

Scotland's Rural College

Dairy-beef calves: current practices and views of calf producers and rearers

Bell, DJ; Duthie, C-A; Haskell, MJ; Mason, CS

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JOINT INTERNATIONAL CONGRESS ON ANIMAL SCIENCE 2023

Co-organized by the European Federation of Animal Science (EAAP),
the World Association for Animal Production (WAAP) and Interbull

**CLIMATE CHANGE, BIODIVERSITY AND GLOBAL
SUSTAINABILITY OF ANIMAL PRODUCTION**

**FROM AUGUST 26 TO SEPTEMBER 1, 2023
LYON - FRANCE**



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Table of Contents

The European Federation of Animal Science (EAAP)	2
Welcome to the EAAP + WAAP + INTERBULL 2023 in Lyon	3
National Organizers of the 74 th EAAP Annual Meeting	4
YoungEAAP	5
Country information: France	6
Agriculture in France	7
About Lyon	8
Conference venue	9
Practical information	10
Useful information	12
Information for participants	13
General programme	15
WAAP Plenary Session (Session 1)	16
EAAP-WAAP Plenary Session (Session 26)	17
Organization of scientific programme	18
Room overview	19
Scientific programme – Sunday 27 August 2023	24
Scientific programme – Monday 28 August 2023	25
Scientific programme – Tuesday 29 August 2023	55
Scientific programme – Wednesday 30 August 2023	70
Scientific programme – Thursday 31 August 2023	104
Study commissions	137
Technical tours	140
Social events	144
Touristic tours	146

The European Federation of Animal Science (EAAP)

Every year, the EAAP (The European Federation of Animal Science) organizes an international meeting which attracts between 900 and 2,000 people.



The main aims of the EAAP are to promote, by means of active co-operation between its members and other relevant international and national organizations, the advancement of scientific research, sustainable development and production systems; experimentation, application and extension; to improve the technical and economic conditions of the livestock sector; to promote the welfare of farm animals and the conservation of the rural environment; to control and optimise the use of natural resources in general and animal genetic resources in particular; to encourage the involvement of young scientists and technicians. More information on the organization and its activities can be found at www.eaap.org.

Address: Via G. Tomassetti 3 A/1
I-00161 Rome, Italy

Phone: +39 06 4420 2639

E-mail: eaap@eaap.org

Web: <http://www.eaap.org>

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2000-2004	A. Aumaitre (France)
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Welcome to the EAAP + WAAP + INTERBULL 2023 in Lyon



On behalf of the French Organising Committee, we are very delighted to welcome you to attend the Joint International Congress on Animal Science co-organised by the European Federation of Animal Science (EAAP), the World Association for Animal production (WAAP) and Interbull to be held in Lyon, the capital of the Auvergne-Rhône-Alpes French region, from August 26th to September 1st, 2023.

The general topic of this Congress is 'Climate change, biodiversity and global sustainability of animal production'. Different sessions are jointly organised between the EAAP, WAAP, Interbull and also other partners to cover various areas of knowledge related to animal science, such as genetics, nutrition, physiology, animal health and welfare.

The Auvergne-Rhône-Alpes region covers an area of 69,711 km² in the central-east part of the south of France. It is characterised by diverse natural resources and topographies (including high mountains to the east and volcanos to the west), climates, cultures, folklore, architecture, and languages. The region accounts for 11.9% of the French economic output. It hosts 48,500 farms (with an average of 59 ha), including 51.9% of them for the production of animal products and 10.4% with both plant and animal production. About 20% and 13% of the farms concern the production of beef and milk respectively, and 11% are with sheep, goats or other herbivores. This places the Auvergne-Rhône-Alpes region 3rd in place amongst the other French regions in agriculture. The region had 13% of organic farms, 30% with other labels or quality signs and 30% with short supply chains.



Apart from the outstanding scientific programme, social activities is organised in Lyon, which was the former capital of the Gauls at the time of the Roman empire, a major economic hub during the Renaissance and today the third-largest city and second-largest metropolitan area of France. The city is known as 'the gastronomic capital of the world' and is recognised for its historical and architectural landmarks and for its universities.

The city is also known for its light festival and is a major centre for chemical, pharmaceutical and biotech industries. Several exceptional sites of the region are inscribed on the UNESCO World Heritage List including the historical district of Lyon.

We welcome you and wish you an exceptional stay in Lyon!

Jean-François Hocquette

Senior scientist of INRAE

President of the French Association for Animal Production

The Joint International Congress on Animal Science (EAAP annual congress, WAAP congress and Interbull meeting) is locally co-organised by INRAE (The French National Research Institute for Agriculture, Food, and Environment) and the French Association for Animal Production (AFZ), on behalf of the European Federation of Animal Science (EAAP) and the World Association for Animal production (WAAP) and by "France Génétique Elevage" on behalf of Interbull.

National Organizers of the 74th EAAP Annual Meeting

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Jean-François Hocquette (INRAE, AFZ)

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Xavier Druart

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Insects

Thomas Lefevre
Anna Zaidman-Rémy

Cattle Production

René Baumont
Christophe Denoyelle

Sheep and Goat Production

Jérémie Jost



Conference website: www.eaap2023.org

YoungEAAP



What is the YoungEAAP?

YoungEAAP is a group of young scientists organized under the EAAP umbrella. It aims to create a platform where scientists during their early career get the opportunity to meet and share their experiences, expectations and aspirations. This is done through activities at the Annual EAAP Meetings and social media. The large constituency and diversity of the EAAP member countries, commissions and delegates create a very important platform to stay up-to-date, close the gap between our training and the future employer expectations, while fine-tuning our skills and providing young scientists applied and industry-relevant research ideas.

Committee Members at a glance

- Ines Adriaens (president)
- Jana Obsteter (vice president)
- Giulia Gislou (secretary)

YoungEAAP promotes Young and Early Career Scientists to:

- Stay up-to-date (i.e. EAAP activities, social media);
- Close the gap between our training and the future employer expectations;
- Fine-tune our skills through EAAP meetings, expand the special young scientists' sessions, and/or start online webinars/trainings with industry and academic leaders;
- Meet to network and share our graduate school or early employment experiences;
- Develop research ideas, projects and proposals.

Who can be a Member of YoungEAAP?

All individual members of EAAP can join the YoungEAAP if they meet one of the following criteria:
Researchers under 35 years of age OR within 10 years after PhD-graduation.

Just request your membership form (ines.adriaens@kuleuven.be) and become member of this network!

Country information: France

Facts about France	
Population	68,014,000
Mainland Portugal	633,186 km ²
Atlantic coast line	3,427 km
National Languages	French

Welcome to France!

France is a vaguely hexagonal country, located in the west of the European continent and bordered by Spain, Italy, Switzerland, Germany, Luxembourg and Belgium. The majority language spoken is French.

This small hexagon has always been a center of civilization, a crossroads of people and a natural bridge between Europe and America.

France is bathed by two seas: the Mediterranean Sea to the south, the Atlantic Ocean to the west and to the north of the island of Great Britain: the Channel Strait.

In the south, a mountain range called the Pyrenees separates France from Spain. To the east, a mountain range called the Alps separates France from Italy. Still to the east, a more modest mountain range, the Jura, separates France from Switzerland. A large European river, the Rhine, is the natural border between France and Germany.

France is rich in culture, gastronomy, traditions and festivals. With its 18 regions, each region has its own historical, cultural and gastronomic heritage. You can discover the Auvergne-Rhône Alpes region with all its traditions and historical inspirations. Some cities have medieval inspirations that give them an ancient charm.

The gastronomic culture is very important for the French, bakeries are present at every street corner. You will be able to taste the famous baguette and croissant which are so much dreamed. Let us not forget the culture of the wine. Indeed, each region produces all kind of wine. In the Auvergne Rhône Alpes region, domains such as La Chartreuse, Chateau Bizard, Domaine Autrand are very well known and famous.



Agriculture in France

In 2019, with 77.0 billion euros, France had the highest total agricultural production among the Member States (about 18% of the total production by the EU), followed by Germany (58.2 billion or 14%), Italy (57.8 billion or 14%), Spain (51.7 billion or 12%), the Netherlands (29.1 bn or 7%), Poland (26.4 billion or 6%) and Romania (19.0 billion or 5%).

Agriculture is a source of economic growth in France: in 2019, the value generated by all agricultural and agri-food activities represented 3.4% of the French GDP. In addition, the foreign trade surplus of agri-food products was 7.8 billion euros in 2019.

Agriculture is an activity that creates jobs: in 2019, production and processing activities related to agriculture, forestry, fishing and agri-food industries employed 1.4 million people (employees and non-salaried) in full-time equivalent, or 5.2% of total national employment. In metropolitan France, women represented 30% of permanent agricultural workers in 2019.

Agriculture has a strong anchoring on the French territory: in 2020, agriculture represented 269,000 km² of the French territory. In metropolitan France, this represents 49% of the territory. In addition, France had 416,400 farms in 2020, 20% less than ten years ago. Cattle production uses 33% of the French agricultural area. The average area of French farms continues to increase to reach 69 ha in 2020 (compared to 55 ha in 2010). The French agriculture is also characterized by a growing importance of organic farming.



France has an important animal production: the country is indeed the second largest European dairy producer and the largest beef producer with the greatest diversity of bovine breeds over the World. It also has the third largest pig population (behind Germany and Spain). The main animal productions are dairy products (36% in value), bovine meat (21%), pork (13%), poultry meat (12%), eggs (6%), veal (4%) and small ruminants (3%).



About Lyon

Lyon constitutes a very interesting place to hold the EAAP + WAAP + INTERBULL congress as it is crossed by two rivers, the Rhône and the Saône, and immediately takes on a particular attraction, that of the banks and quays, walks, daydreams on the terrace, cruises, etc. The city connotes a certain sweetness of life.

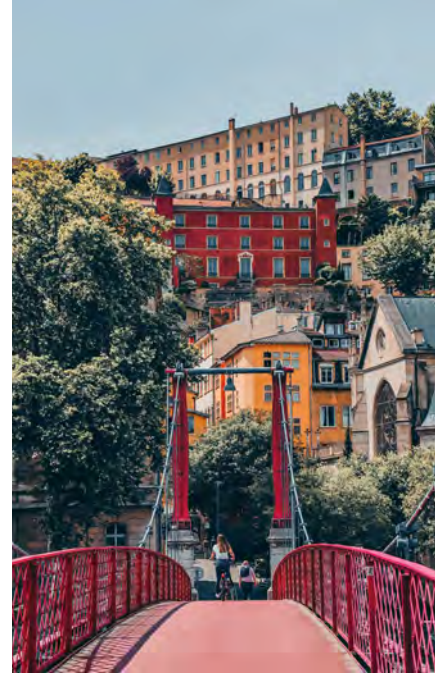
The city born in 43 B.C. preserves a heritage of which its inhabitants are proud and have at heart to develop by making it live: the restaurants, the bookshops, the art galleries or the second-hand shops that enliven the Vieux-Lyon are just a few examples.

One of its most popular attractions, the Parc de la Tête d'Or, adjacent to the convention center, is the largest urban park in France. Totally dedicated to leisure, discovery and relaxation, its green spaces are the scene of many activities: zoos, rides, stores, shows, pony rides, botanical gardens, etc. Everything is gathered to make your visit a magical moment. Young and old children, tourists, sportsmen or simple walkers, everyone will find his happiness there.

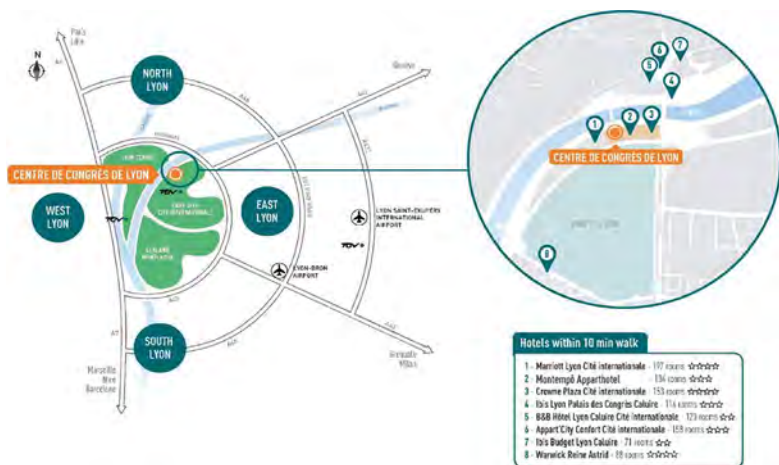
The Auvergne-Rhône-Alpes region offers a wide range of destinations such as the Alps and Mont Blanc, the roof of Europe, the Drôme and Ardèche, evocative of Provence, and the Auvergne and its volcanoes, where many regional research INRAE laboratories are located.

Lyon, internationally known as the capital of gastronomy, as well as its region, have very popular and famous culinary meat and fish specialties such as the pâté en croute (pâté baked in a crust), the brioche sausage, the Poularde de Bresse or even the Lyon quenelle (pike quenelles often served with a crayfish sauce). The region also offers beef meat from breeds adapted to the terroir such as Charolaise, Limousine, Salers, Aubrac.

It will also be the occasion to taste the regional wines in agreement with some of the twenty cheeses AOC (protected designation of origin) of the region such as the Fourme d'Ambert, the Reblochon, the Beaufort, the Abondance, the Saint-Nectaire, the Salers, etc.



Conference venue

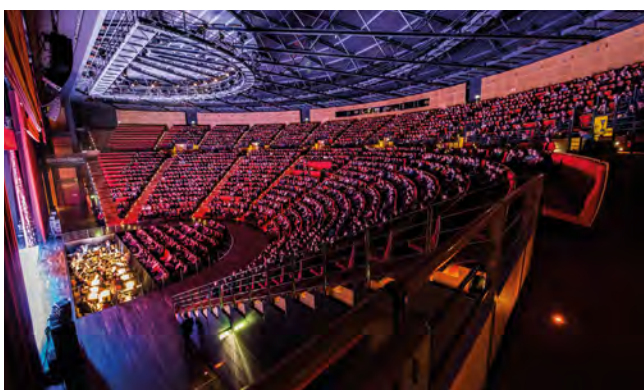


Centre de Congrès de Lyon
1 Quai Charles de Gaulle
69006 Lyon - FRANCE

Centre de Congrès Lyon

The EAAP2023 conference will take place in the Congress Center of Lyon.

In the heart of the Cité internationale, right in the city center, on the edge of the Parc de la Tête d'Or, the Lyon Convention Centre is ideally located and easily accessible by all means of transport.



Practical information

How to get there via Public Transport

It is very easy to travel around Lyon as the city benefits from a very developed transportation system, as well as the traditional taxi.

By bus

- C1 from Lyon Part Dieu train station – Stop at Cité internationale | Centre de Congrès
- C2 from Lyon Part Dieu train station – Stop at Cité internationale | Transbordeur
- C4 from the Jean Macé metro station – Stop at Cité internationale | Centre de Congrès
- C5 from the Cordeliers metro station – Stop at Cité internationale | Centre de Congrès
- C26 from the Grange Blanche metro station – Stop at Cité internationale | Transbordeur
- Bus 70 from Lyon Part Dieu train station – Stop at Cité internationale | Transbordeur

It's possible to take a ticket directly in stations.

Save time and plan your arrival: <http://www.tcl.fr>

By taxi

A taxi station/Cab points are also available at the Congress Center and the Amphitheater.

- Taxi Lyon - Tel: +33 (0)4 72 10 86 86
- Allo taxi - Tel: +33 (0)4 78 28 23 33
- Taxi Lyon - Tel: +33 (0)4 78 26 81 81

By train

The Lyon Convention centre is just 10 minutes away from the Lyon Part Dieu TGV train station and just 15 minutes away from the Perrache TGV train station.

Save time-plan your arrival: <http://www.sncf-connect.com>

By road

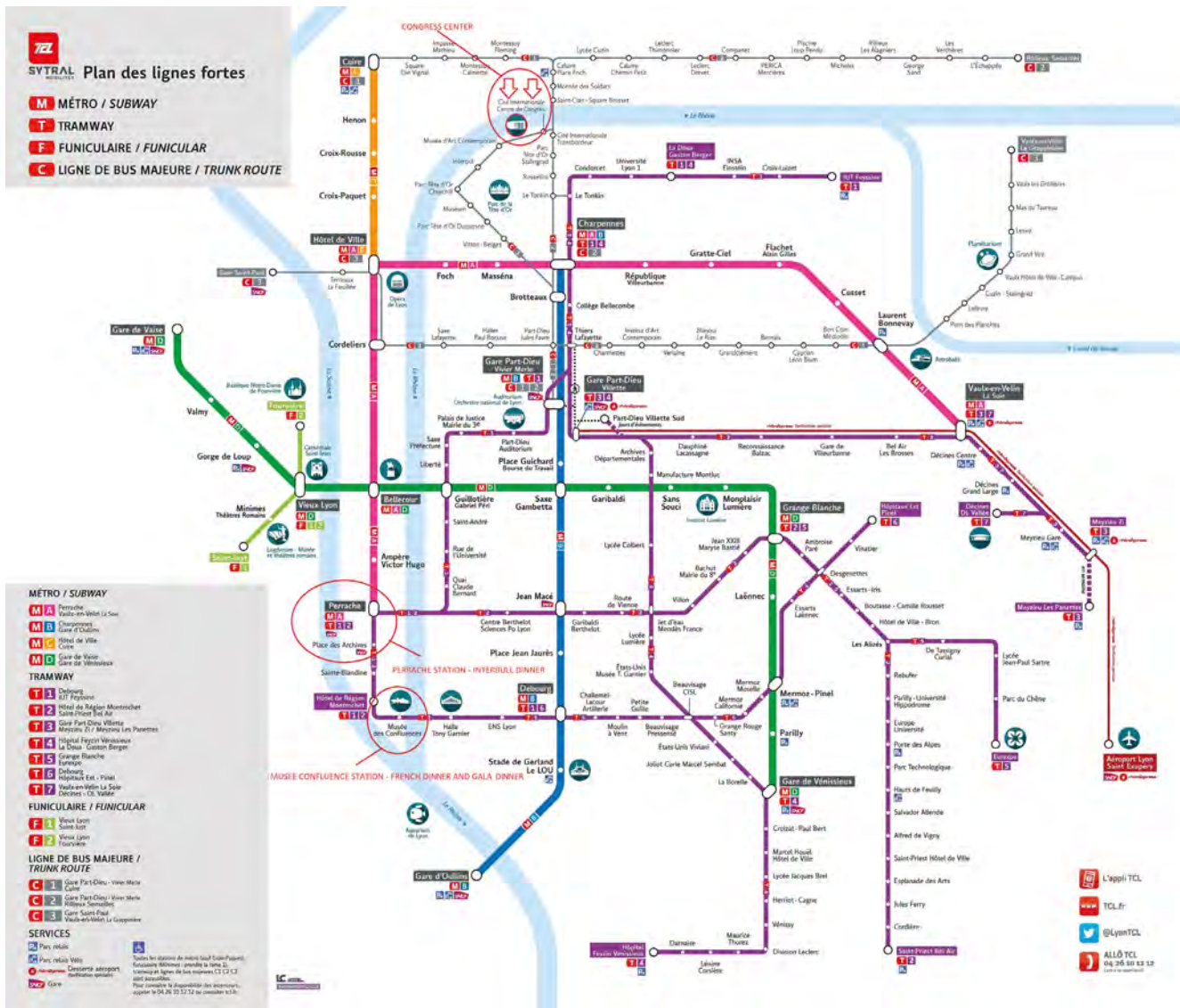
Ideally located in the heart of Europe, the Lyon Convention centre is just 1 hour away from Geneva, 3 hours away from Turin, 4 hours away from Paris, 4 and a half hours away from Milano and 5 hours away from Barcelona by car. The venue has 3 carparks onsite in the heart of the Cité Internationale district.

- Address: Centre de Congrès de Lyon – 1 Quai Charles de Gaulle – 69006 Lyon - FRANCE
- Périphérique Nord Exit at Porte de Saint Clair
- GPS coordinates: Latitude: 45.7851676 | Longitude: 4.8528885
- 3 carparks onsite

By air

- Lyon city centre is less than 30 minutes away from the Saint Exupéry International Airport via the Rhone Express shuttle service
- Lyon Saint Exupéry airport, France's 2nd regional airport, serves 117 destinations of which 80 are international with more than forty airlines
- 50 airports are served daily
- Totally interconnected, Lyon Saint Exupéry airport is directly connected to the TGV (high speed trains) and to the city in under 30 minutes thanks to the Rhone Express shuttle service
- An additional business airport – Lyon Bron is just 20 minutes outside the city Bartek

Save time and plan your arrival: <http://www.lyonaerports.com>



Useful information

Official language

The official working language of the congress is English. No translation will be provided.

Passport and visa

Entry formalities in France vary according to the country of origin. European Union (EU) citizens and the European Economic Area (EEA) as well as third-country nationals holding a residence permit of a Schengen State, do not need a Visa to enter in France. All non-EU citizens are asked to contact their local embassies for any specific requirements. All foreign citizens entering France must have either a valid passport or a national valid ID card.

Currency and money exchange

Currency in France is the Euro (€). Most banks are open at 08:30 – 12:30 13:30 – 18:00. Monday through Friday. (Banks at the airports are open 08:30 – 12:00 and 13:30 – 18:00 h). Post offices are open from 9:00 – 12:30 and from 14:00 – 18:30 h. Please notice that there will be no exchange facilities at the congress venue. France also has an extensive network of cash dispensers which operate 24 hours a day. ATM's are widely distributed through the city. Most credit cards allow you to withdraw money from ATM's. You can exchange money from at least four exchange bureaus from Monday to Saturday.

Local time zone

The local time in France is the Central European Time (UTC/GMT +2 hours).

Climate

August, the last month of the summer, in Lyon, is a moderately hot month with average temperatures ranging between max 27.2 °C (81 °F) and min 16 °C (60.8 °F).

Electricity

France uses a 220 V system, sockets have the European standard and plugs are two-prong.

Conference app

An EAAP 2023 App will be available from www.eaap2023.org to all registered delegates before the conference. The conference app will contain comprehensive information about the conference, venue, program and abstracts, as well as interactive possibilities.

Information for participants

The registration desk for Interbull on level 2 'Gratte-Ciel' is open for participants the following days and times:

- Saturday, 26 August 07:30 – 18:00
- Sunday, 27 August: 07:30 – 16:00

The registration desk for WAAP and EAAP on level -1 'Bellecour' is open for participants the following days and times:

- Sunday, 27 August: 07:30 – 18:00
- Monday, 28 August: 07:30 – 19:30
- Tuesday, 29 August: 07:30 – 18:30
- Wednesday, 30 August: 07:30 – 18:30
- Thursday, 31 August: 07:30 – 18:00

Guidelines for authors oral communication

The Organising Committee of the 74th EAAP Annual Meeting will do its utmost to help authors for their presentations and to facilitate their arrival and stay at the congress.

Please take a few minutes to read the following guidelines regarding the on-site organisation of the congress for the smooth running of the sessions.

Oral presentations

After having picked-up your badge at the Welcome Area, you need to go give your presentation file to the technicians in the Preview room located in the Welcome Area.

Please be sure to upload your presentation at least half a day before your scheduled oral presentation.

All presentations scheduled for Monday morning must be uploaded on Sunday.

The preview room will be open from Sunday 27th to Thursday 31st from 08:00 to 18:00.

1. Technical guideline

Presentation format

The file for your oral presentation must be created in a PowerPoint file (.ppt or .pptx). Your presentation should be composed of slides in a landscape format 16:9 according to your allocated time (on average 15 slides for 15 mins and 30 slide for 30 mins).

You will not be allowed to use your personal computer in the conference room.

If you insert images or pictures they must be in the following format: .jpg, or .gif (.pict prohibited) and must be in high definition to allow efficient viewing. Images/pictures resolution should be 1920×1080 minimum (width by height).

If you have video files attached to your power point presentation they must be in the following format: .mpg, .mpeg, .avi, .wmv or .mov and must be saved in the same folder as the presentation.

And do not forget, when saving your final presentation on a USB device, to make sure to include your video files if any, and all links to these multimedia files.

If you operate under Mac:

Oral communications in Macintosh format are supported by the preview system after on-site conversion:

- Please allow sufficient time for conversion of Macintosh files to a format compatible with the pre-projection system.
- Conversion of Keynote presentations with specific animations is not guaranteed.
- Prefer Windows-compatible fonts

The fonts installed on the workstations (pre-projection and rooms) support standard Western European characters.

In the conference room

The computer equipment available in the conference rooms is strictly identical to that in the pre-projection room. A computer screen on the lectern allows you to follow the presentation without having to turn towards the screen. In the event of technical problems, please contact the technical staff in the room, who will take appropriate action.

Each conference room is equipped with the following:

- A video projection system
- Laptop computer with mouse

Click on your name to open your oral presentation and press the 'Escape' key to return to the main menu at the end of your presentation.

Do not come at the last minute in the meeting room hoping to connect your own laptop or your USB key: you will NOT be able to connect it. You should go to the preview room.

Duration of your presentation

Please respect the time allotted to your presentation.

Do not go over the time limit and remember to save time for discussion. Remember to speak directly into the microphone at a suitable speed for everybody to understand.

Official language

The official language of the Congress is English, which means that all presentations and questions must be delivered in English.

2. Authors disclosure of potential conflicts of interest

Except for talks from sponsors, the Scientific Committee requires that all presentations should be as free of commercial bias as possible and free of any information on commercial products or services.

Poster presentations

Posters will be presented in portrait format (A0, 118,9 cm high and 84,1 cm wide) with the title, the addresses of authors, the picture of the presenting author and the scientific content (introduction, methods, results, discussion, conclusion).

The poster should be printed by the participants.

Please indicate the number of your abstract to the staff in the poster room for installation.

The number of your poster will be displayed on the top of the panel.

Posters belonging to the Sessions 01 – 46 should be put up on Monday morning and the poster discussion session takes place on Tuesday August 29th from 14.00 - 15.00 h, when authors should be in attendance at their poster.

The posters should be removed before Tuesday August 29th 18.00 h.

Posters belonging to Sessions 47 – 96 should be put up on Wednesday morning and the poster discussion session takes place on Wednesday August 30th from 14.00 - 15.00 h, when authors should be in attendance at their poster.

The posters should be removed before Thursday August 31st 15.00 h.

General programme

Day	Time	Subject
Saturday, 26 August	08:00 - 17:30	Interbull meeting
	19:30 - 23:00	Interbull dinner
Sunday, 27 August	08:00 – 18:30	Writing and Presenting Scientific papers
	08:00 – 18:00	Interbull meeting and WAAP Plenary Sessions
	18:00 – 20:00	Welcome cocktail
Monday, 28 August	08:30 – 13:00	EAAP study commission sessions
	14:00 – 18:00	EAAP study commission sessions
	18:15 – 20:00	Welcome and Ceremony awards
	20:00 – 22:00	Welcome cocktail
Tuesday, 29 August	08:30 – 13:00	Plenary Session
	14:00 – 15:00	Poster Session
	15:00 – 18:30	Study commission sessions
	20:30 – 01:30	French dinner
Wednesday, 30 August	08:30 – 13:00	Study commission sessions
	14:00 – 15:00	Poster Session
	15:00 – 18:30	Study commission sessions
	18:30 – 20:00	EAAP General Assembly
Thursday, 31 August	08:30 – 13:00	Study commission sessions
	14:00 – 18:00	Study commission sessions
	19:30 – 01:00	Gala dinner
Friday, 1 September	08:00 – 18:00	Technical tours

WAAP Plenary Session (Session 1)

August 27 th 9:00 – 18:00	
'Climate change, biodiversity and global sustainability of animal production'	
09:00 – 09:10	Welcome and Introduction to the 18 th World Congress for Animal Production <i>Philippe Chemineau (France), President of WAAP</i>
Control of green house gas emissions in ruminants farming Co-Chairs: Jean-Louis Peyraud (<i>INRAE and FAA France</i>) and Anne Mottet (<i>FAO Italy</i>) Sponsor: C-Lock inc./GreenFeed Associated partner: the French Academy of Agriculture (FAA)	
09:10 – 09:20	Sponsor presentations and Introduction
09:20 – 10:00	The real place of livestock in GHG emissions and their control for climate change <i>Kris Johnson, Washington State University (USA)</i>
10:00 – 10:40	Global GHG emissions from livestock systems: updated baselines, projections, and mitigation options <i>Dominik Wisser, FAO (Italy)</i>
10:40 – 11:10 Coffee break	
11:10 – 11:30	Genetic control of ruminant methane emissions in livestock <i>Anouk Van Breukelen, Wageningen University Research (the Netherlands)</i>
11:30 – 11:50	Effective strategies to mitigate methane emissions by ruminants <i>Claudia Arndt, ILRI (Kenya)</i>
11:50 – 12:10	Tannins, legumes and methane production by ruminants <i>Bart Lardner, University of Saskatchewan (Canada)</i>
12:10 – 12:30	Enteric methane reduction in ruminants by early-life interventions <i>Diego Morgavi, INRAE (France)</i>
12:30 – 14:00 Lunch break	
Biodiversity as a lever for sustainable animal production Co-Chairs: Michel Rieu (<i>FAA France</i>) and Matthias Gauly (<i>UBZ Italy</i>) Sponsor: Sommet de l'Elevage Associated partner: The French Academy of Agriculture (FAA)	
14:00 – 14:10	Sponsor presentations and Introduction <i>by the co-Chairs</i>
14:10 – 14:50	Sustainable intensification of animal production with sylvopastoral systems <i>Julian Chara, CIPAV (Colombia)</i>
14:50 – 15:30	Sustainability of low-inputs livestock systems <i>Anne Mottet, Food & Agriculture Organization - FAO (Italy)</i>
15:30 – 15:50	Agroecological transformation of tropical livestock production through integrating improved forages <i>An Notenbaert, Alliance Bioversity and CIAT (Kenya)</i>
15:50 – 16:20 Coffee Break	
16:20 – 16:40	Livestock-wildlife conflicts: A struggle for land use and conservation in the U.S. Mountain West <i>Bret Taylor, United States Department of Agriculture (USA)</i>
16:40 – 17:00	Community-based breeding programs (CBBP): Platforms for genetic improvement and biological discovery <i>Joram M. Mwacharo, ICARDA (Ethiopia)</i>
17:00 – 18:00	General discussion and Concluding remarks of both sessions

EAAP-WAAP Plenary Session (Session 26)

August 29th 8:30 – 12:30

Chair: Isabel Casasús

08:30 – 08:45 The livestock sector and research in animal science in France
Xavier Fernandez (France)

08:45 – 09:00 Questions of farmers to science
Christiane Lambert (France)

Primum non nocere: Can we feed the planet without depleting its resources?

09:00 – 09:30 Solutions to achieve sustainable and healthy diets worldwide
Hervé Guyomard (France)

09:30 – 10:00 Moving towards bold food systems resilience
Jessica Fanzo (USA)

10:00 – 10:30 A social-ecological agenda for transforming land management toward sustainability
Tobias Plieninger (Germany)

10:30 – 11:00 Coffee break

11:00 – 11:30 General discussion chaired by Isabel Casasús

Leroy Award Presentation

11:30 – 12:00 EAAP beyond Europe: establishing and using capacity to feed the World
Johannes Soelkner (Austria)

WAAP Award Presentation

12:00 – 12:30 Potential impact of antioxidants and plant derived polyphenols on animal health and productivity
Frank Dunshea (Australia)

Organization of scientific programme

In the 'Room Overview' section (pages 19-23) several abbreviations are shown which are to do with the organization of the various sessions. These are explained below.

EAAP Commissions

The Scientific Programme of the EAAP Annual Meeting is organized by the Scientific Committee of EAAP, chaired by the Vice-President for Scientific Affairs, Dr Johannes Sölkner. The Scientific Committee comprises the Presidents of the 11 Commissions (see pages 100-101) and is assisted by a Secretary, Dr Geoff Pollott.

The 11 Commissions are: Cattle (C), Genetics (G), Health and Welfare (H+W), Horse (H), Livestock Farming Systems (LFS), Nutrition (N), Physiology (Ph), Pig (P), Sheep and Goat (S+G), Insects (I) and Precision Livestock Farming (PLF).

Type of sessions

- **Theme sessions (T)** are on key topics in animal science suggested by a Commission at its Annual Commission Meeting and consist of invited and offered papers
- **Industry sessions (I)** are led and supported by industry organizations involved with a Commission and comprise invited and offered papers
- **Free Communications (bottom-up; BU)** are sessions created from submitted abstracts and titles are announced in early April after abstracts have been received
- **Discovery sessions (D)** are invited and submitted single/multiple presentations on hot/emerging topics suggested by a Commission
- **Challenge sessions (C)** are free format (workshop, open committee, round table) to debate important issues and have no theatre paper presentations, other than an introductory talk
- **Young EAAP sessions (YE)** are to identify topics particularly oriented towards early-career scientists
- **Project sessions (P)** are sessions based around a project which wants to share its results with the wider scientific community, often combined with submitted abstracts.
- **Working Group sessions (WG)** are the results of an EAAP working group

All sessions are open to all delegates to the Annual Meeting.

Room overview

Sunday 27 August 2023
9:00 – 18:00

Room: Auditorium Lumière

Session 01

WAAP Plenary Session

Chair: Chemineau

9:00 – 12:30

Control of green house gas emissions in ruminants farming

Chair: Peyraud / Mottet

14:00 – 18:00

Biodiversity as a lever for sustainable animal production

Chair: Rieu / Gauly

Room	Monday 28 August 2023 8:30 – 13:00	Monday 28 August 2023 14:00 – 18:00
Prestige Gratte Ciel	Session 02 Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 1 (LFS; D; ATF)	Session 14 Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 2 (LFS; D ATF)
Foyer Amphitheatre Rhone	Session 03 Up side and down side of 'genomic selection' (G; T; Interbull)	Session 15 Breeding for climate change – mitigation (G; P; ReLivestock)
Bellecour 2 (Streamed WAAP sessions)	Session 04 Adaptation of breeding strategies and genetics to climate change, right animal for right environment (G; WG-AnGR)	Session 16 Alternative and new feed resources to reduce feed/ food competition and enhance circularity of livestock production (N; T)
Bellecour 1	Session 05 Climate care dairy farming: follow up – Part 1 (C; P; CCCFarming)	Session 17 Climate care dairy farming: follow up – Part 2 Chair: Edouard / Becciolini (C; P; CCCFarming)
Gratte Ciel 2	Session 06 Production of high quality animal products and implementation of new technologies in animal husbandry (C; P; GREENANIMO)	Session 18 Carcass grading for quality and efficiency – underpinning future sustainability of beef and lamb (C; T)
Bellecour 3	Session 07 Challenges of fish nutrition for sustainable aquaculture (N; T)	Session 19 Advances in nutritional modelling and feeding systems (in memory of Daniel Sauvant) (N; D)
Gratte Ciel 1	Session 08 Various topics in pig production (P; B)	Session 20 Early career competition 'Innovative approaches to pig and poultry production', supported by Wageningen Academic Publishers (P; EC)
Tête D'or 2	Session 09 Insect applications (I; T)	Session 21 Insects as feed: sustainability, legislation and safety (I; T)
Tête D'or 1	Session 10 Impact of epigenetics and genetics in determining animal physiology (Ph; T)	Session 22 Environmental stress: mitigating the adverse effects on animal physiology (Ph; T)
Gratte Ciel 3	Session 11 Improving pig welfare in conventional production systems (H+W; T)	Session 23 Improving animal welfare in conventional production systems (H+W; T)
Roseraie 3	Session 12 Technologies for outdoor systems: which application and opportunities? (PLF; T)	Session 24 New traits and proxies from sensor technologies for breeding purpose (G/PLF; T)
Roseraie 2	Session 13 Innovations and technological advancements in small ruminant production with particular emphasis in Mediterranean semi-extensive or extensive systems (S+G; T)	Session 25 Molecular measures of diversity and their role in monitoring and management of breeds (G; WG; Interbull, WG-AnGR)

Tuesday 29 August 2023 8:30 – 12.30	Room	Tuesday 29 August 2023
Room: Main Amphitheatre Session 26 EAAP-WAAP Plenary Session, Leroy and WAAP Awards Lectures		Posters 14:00 – 15:00
		Theatre 15:00 - 18:30
	Prestige Gratte Ciel	Session 27 Breeding programs & strategies (G; B)
	Foyer Amphitheatre Rhone	Session 28 Breeding for improved animal health and welfare (G; T)
	Foyer Amphitheatre Parc	Session 29 Innovative animal products and farming systems oriented to new consumer demand and trend (C; P; BovINE)
	Tête D'or Lounge	Session 30 Looking back, looking forward – Research on Beef production and quality in China and France (CSBF) and between Australia-France-China (The Triangle Project) (C; T)
	Bellecour 2 (Streamed WAAP sessions)	Session 31 Pasture based solutions to realise a role for ruminants in a sustainable food system (LFS; T)
	Bellecour 1	Session 32 Beyond rumen: role of nutrition in cattle's intestinal health (N; T) Sponsor presentation – Selko
	Gratte Ciel 2	Session 33 Horses in farms and territories: challenges and new solutions (H; T)
	Bellecour 3	Session 34 Sustainable pig and poultry production, including the use of water (P; WG)
	Gratte Ciel 1	Session 35 Is there a future for experimental animal research in Europe and, if so, what is it? (P; P)
	Tête D'or 2	Session 36 Technologies in insect production + controlling quality (I; C)
	Tête D'or 1	Session 37 Omics and integrative analyses towards understanding inter-organ cross-talk and whole body physiology of livestock (Ph; T)
	Gratte Ciel 3	Session 38 Equal opportunities and open communication for early career scientists (yEAAP; EC)
	Roseraie 3	Session 39 TechCare and ClearFarm: pilots on PLF tools for monitoring animal welfare (PLF; P)
Roseraie 2	Session 40 The transition from pregnancy to lactation in dairy goats and sheep (S+G; T)	

Room	Wednesday 30 August 2023 8:30 – 13:00	Wed 30th Aug pm
		Posters 14:00 – 15:00
		Theatre 15:00 – 18:30
Prestige Gratte Ciel	Session 41 Open the black box: using omics to better understand biological interpretation of complex traits (G; T)	Session 55 Breeding for climate change – adaptation (G; P; ReLivestock)
Foyer Amphitheatre Rhone	Session 42 Animal genetics to address food security and sustainability (G; P; FABRE-TP) Sponsor presentation – Illumina	Session 56 Establishing breeding programs in extensive systems (including developing regions) with climate change in mind (G; WG; FAGRWG)
Foyer Amphitheatre Parc	Session 43 Better calves for better farms: how the young stock can be the key to success (C/G; D)	Session 57 Grassland management and grassland-based feeding systems for efficient and sustainable milk and meat production (C; T)
Tête D'or Lounge	Session 44 Building on a resilient dairy sector – from animal, farm and regional perspective – Part 1 (C; P; R4D/ADSA)	Session 58 The future of animal products: improved quality management, more alternatives or cell-based products? (C; D)
Bellecour 2 (Streamed WAAP sessions)	Session 45 Transformation of livestock practices in response to society's expectations on animal welfare, market demand for animal products and environmental issues (LFS; T)	Session 59 Environmental challenges of cattle tropical grazing systems (C; T; CIRAD, CaSSECS)
Bellecour 1	Session 46 Innovation in ruminant nutrition and feeding (N; T)	Session 60 Minerals in animal nutrition: supplementation – Part 1 (N; I)
Gratte Ciel 2	Session 47 One-health, one nutrition, one Earth: role of nutrition in livestock production (N; D)	Session 61 Resilient livestock farming systems in the face of climate and other global challenges – adaptation and mitigation (LFS; T)
Bellecour 3	Session 48 How can poultry farming systems evolve to meet the major societal and environmental challenges? (P; WG)	Session 62 Poultry and pig low-input and organic production systems' welfare (P/H+W; P)
Gratte Ciel 1	Session 49 Monoguthealth – Part 1 (P; P)	Session 63 Monoguthealth – Part 2 (P; P)
Tête D'or 2	Session 50 Insect genetics and reproduction (I; WG)	Session 64 Project session: Farmyng (I; P)
Tête D'or 1	Session 51 Leveraging the microbiome for resilience and sustainability in ruminant production – insights from H2020 HoloRuminant (Ph; P)	Session 65 Remote sensing applied to livestock farming: discovering physiological and ethological clues to optimize productive performance and animal welfare (Ph; T)
Gratte Ciel 3	Session 52 Nitrogen management in the dairy supply chain and other tools to improve the efficiency and sustainability of cattle farming (C; B)	Session 66 Innovation in non-ruminant nutrition and feeding (N; T)
Roseraie 3	Session 53 PLF for health and welfare – Part 1 (PLF/H+W; T)	Session 67 PLF for health and welfare – Part 2 (PLF/H+W; T)
Roseraie 2	Session 54 Life Green Sheep and Farm management to adapt goat and sheep farming to climate change: solutions and experiments (S+G; P)	Session 68 Small Ruminant Technologies (Sm@RT) and Thematic network EuroSheep (S+G; P)

Room	Thursday 31 August 2023 8:30 – 12:00 Commissions meetings 12.00-13.00	Thursday 31 August 2023 14.00 – 18-00
Prestige Gratte Ciel	Session 69 Methods & genomic prediction (G; B) Genetics Commission Meeting	Session 83 Genetic diversity Chair: Neumann / Schiavo (G; B)
Foyer Amphitheatre Rhone	Session 70 Genetic parameters & GWAS (G; B)	Session 84 EuroFAANG: genotype-to-phenotype research across Europe and beyond (G; P)
Foyer Amphitheatre Parc	Session 71 Building on a resilient dairy sector – from animal, farm and regional perspective – Part 2 (C; P; R4D)	Session 85 Climate care dairy farming: herd management – Part 3 (C; D)
Tête D'or Lounge	Session 72 What are the stakeholder and societal expectations of intrinsic and extrinsic quality of animal products? (C; D) Cattle Commission meeting	Session 86 How to address stakeholder and societal expectations of intrinsic and extrinsic quality of animal products? (C; D)
Bellecour 2 (Streamed WAAP sessions)	Session 73 Molecules in animal nutrition: over and above building blocks (N; T)	Session 87 Carbon sources and sinks within global livestock systems (LFS; T)
Bellecour 1	Session 74 Balancing the feed for the economy, the environment, and society (N; T) Nutrition Commission meeting	Session 88 Minerals in animal nutrition: basal diet – Part 2 (N; I)
Gratte Ciel 2	Session 75 Livestock based circularity for health and sustainable land use (LFS; T) Livestock Farming Systems Commission meeting	Session 89 Explainable models and artificial intelligence supporting farming decisions (PLF; T)
Bellecour 3	Session 76 Humans and horses: from One Health to One Life perspectives (H; T) Horse Commission meeting	Session 90 Genetics in horses (H; T)
Gratte Ciel 1	Session 77 Trade-offs between health, production and welfare in pigs and poultry: which tools do we have and which research is needed? (P; C) Pig Commission meeting	Session 91 Nitrogen excretion and ammonia emission in pig and poultry production (P; B)
Tête D'or 2	Session 78 Insect nutrition (substrates) & insect health (I; T) Insect Commission meeting	Session 92 Inflammation and energy metabolism in young and adult livestock (Ph; T)
Tête D'or 1	Session 79 Improved insight into the reproductive physiology of livestock (Ph; T) Physiology Commission meeting	Session 93 Recent advances on in vitro systems (from cell culture to in vitro digestion methods): relevance as alternatives to animal experimentation for livestock research (Ph; T)
Gratte Ciel 3	Session 80 Animal behaviour (H+W; B) Health and Welfare Com. meeting	Session 94 Free communications in animal health and welfare (H+W; T)
Roseraie 3	Session 81 Precision feeding (PLF/N; T) Precision Livestock Farming Commission meeting	Session 95 Happy Delivering innovative and holistic milk based monitoring and decision-making PLF tools – collaboration with HappyMoo (PLF; P)
Roseraie 2	Session 82 Product quality and efficiency of small ruminant production systems (S+G; T) Sheep and Goat Commission Meeting	Session 96 ERANET-funded 'Grass To Gas' and EU-funded 'SMARTER' projects (S+G; P)

Scientific programme

Sunday 27 August 2023

Session 01.

WAAP Plenary Sessions

Room: Bellecour 2

Date: Sunday 27 August 2023; 9:00 – 18:00

Chair: Chemineau / Peyraud / Mottet / Rieu / Gauly

Theatre Session 01	Book of Abstracts page
9:20 The real place of livestock in GHG emissions and their control for climate change <i>invited</i> K. Johnson	149
10:00 Global emissions from livestock systems: updated baselines, projections, and mitigation options <i>invited</i> D. Wisser, G. Tempio, A. Falcucci and G. Cinardi	149
10:40 Coffee break	
11:10 Genetic control of ruminant methane emissions in livestock <i>invited</i> A.E. Van Breukelen, M.N. Aldridge, R.F. Veerkamp and Y. De Haas	150
11:30 Effective strategies to mitigate enteric methane emissions by ruminants <i>invited</i> C. Arndt	150
11:50 Tannins, legumes and methane production by ruminants <i>invited</i> H.H. Lardner	151
12:10 Enteric methane reduction in ruminants by early-life interventions <i>invited</i> D.P. Morgavi	151
12:30 Lunch break	
14:10 Sustainable intensification of animal production with silvopastoral systems <i>invited</i> J. Chára	152
14:50 Sustainability of low-input livestock systems <i>invited</i> A. Mottet	152
15:30 Agroecological transformation of tropical livestock production through integrating improved forages <i>invited</i> A.M.O. Notenbaert	153
15:50 Coffee break	
16:20 Livestock-wildlife conflicts: a struggle for land use and conservation in the U.S. Mountain West <i>invited</i> J.B. Taylor and H.N. Wilmer	153
16:40 Community-based breeding programs (CBBP): platforms for genetic improvement and biological discovery <i>invited</i> J.M. Mwacharo, A. Haile and B. Rischkowsky	154

Scientific programme

Monday 28 August 2023

Session 02.

Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 1

Room: Prestige Gratte Ciel

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Lee / O'Mara

	Theatre Session 02	Book of Abstracts page
8:30	'Sustainable livestock systems': what does this mean? – welcome and introduction	154
invited	<i>F. O'Mara and M. Lee</i>	
8:45	Friend or Foe? The role of animal-source foods in healthy and environmentally sustainable diets	155
invited	<i>L. Merbold, T. Beal, C. Gardner, M. Herrero, L. Iannotti, S. Nordhagen and A. Mottet</i>	
9:15	The economic sustainability of dairy production systems in the EU and beyond	155
invited	<i>F. Thorne, E. Dillon, T. Donnellan, P. Jeanneaux, R. Jongeneel and L. Latruffe</i>	
9:45	Methods to assess the sustainability of livestock systems: challenges and opportunities	156
invited	<i>E. De Olde</i>	
10:15	Coffee break	
10:45	SustAnimal – a multi-actor knowledge centre for livestock in future Swedish food systems	156
invited	<i>M. Hetta, S. Agenäs, D.J. De Koning, H. Oscarsson, P. Peetz Nielsen and A. Wallenbeck</i>	
11:00	Breeding livestock for sustainable systems	157
invited	<i>P.W. Knap, K.M. Olson and M.A. Cleveland</i>	
11:30	Panel discussion (morning)	157
invited	<i>A. Granados and A.S. Santos</i>	
12:15	Use of grazing with dairy goats to design sustainable food systems	158
	<i>H. Caillat, E. Bruneteau and B. Ranger</i>	
12:30	Benefits and limits of farm animals to control herbage mass, pests and weeds in orchards: a review	158
	<i>G. Maillet, A. Dufils, F. Angevin, S. Ramonteu, J.L. Peyraud and R. Baumont</i>	
12:45	A new concept for agro-ecological efficiency at different scales of ruminant production systems	159
	<i>H. Nguyen-Ba, P. Veysset and A. Ferlay</i>	

Session 03.

Up side and down side of 'genomic selection'

Room: Tête D'or Lounge

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Miglior / Jornaux

	Theatre Session 03	Book of Abstracts page
8:30	Issues and perspectives in genomic selection in limited size breeds: the case of Italian Simmental	159
invited	<i>N.P.P. Macciotta, L. Degano, D. Vicario and A. Cesarani</i>	

9:00	Impact of genomic selection on genetic diversity in five European local cattle breeds <i>J.J. Winding, T.H.E. Meuwissen, P. Croiseau, G. Restoux and R. Bonifazi</i>	160
9:15	Accounting for sequential genomic selection in broiler breeding <i>J. Hidalgo, D. Lourenco, S. Tsuruta, V. Breen, W. Herring and I. Misztal</i>	160
9:30	Changes in the genome due to genomic selection in two pig populations <i>Y.C.J. Wientjes, M.P.L. Calus, P. Bijma, A.E. Huisman and K. Peeters</i>	161
9:45	Practical approaches to managing increased homozygosity caused by genomic selection <i>invited C. Baes, C. Obari, B. Makanjuola, C. Rochus, C. Maltecca, F. Schenkel and F. Miglior</i>	161
10:15	Coffee break	
10:45	Positive and negative effects of genomic selection <i>invited I. Misztal</i>	162
11:15	Storing and analysing a million genomes on a desktop computer <i>G. Gorjanc, J. Obsteter, G. Mafra Fortuna, R. Ros-Freixedes, M. Johnsson and I. Pocrnic</i>	162
11:30	Large scale screening for genetic defects in Holstein cattle using transmission disequilibrium test <i>F. Besnard, M. Boussaha, H. Leclerc, J. Jourdain, D. Boichard and A. Capitan</i>	163
11:45	Genomic selection strategies and their potential to maintain rare alleles and de-novo mutations <i>M.F. Schrauf, Y.C.J. Wientjes, H.A. Mulder and J. Vandenplas</i>	163
12:00	Genomic prediction with selected sequence variants in gestation length of New Zealand dairy cattle <i>Y. Wang, K.M. Tiplady, E.G.M. Reynolds, M.A. Nilforooshan, C. Couldrey and B.L. Harris</i>	164
12:15	Novel runs of homozygosity islands in the Finnish Ayrshire population <i>K. Sarviaho, P. Uimari and K. Martikainen</i>	164
12:30	Sometimes we win, sometimes we lose: the consequences of genomic selection <i>invited D. Lourenco, F. Guinan, G. Wiggans, J. Dürr, S. Tsuruta and I. Misztal</i>	165

Session 04.

Adaptation of breeding strategies and genetics to climate change, right animal for right environment

Room: Bellecour 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Kargo / Sturaro

	Theatre Session 04	Book of Abstracts page
8:30	Old, native cattle breeds; from critically endangered to successfully utilized in niche productions <i>N. Svartedal and O. Vangen</i>	165
8:45	Kenyan pastoralists and climate change: breeding as a possible adaptation strategy? <i>J. Jandl, M. Wurzinger, L. Gichuki, B. Habermann, R. Siamito and T.A. Crane</i>	166
9:00	Adapting climate-smart breeding practices for small ruminants in pastoral communities of Kenya <i>J.M. Ojango, E. Oyieng, J.W. Gitau, N. Ndiwa, J. Gachora and A.W.T. Muigai</i>	166
9:15	Zooarchaeology for conservation biology: introducing ARETI <i>A. Spyrou, G. Hadjipavlou and D. Bradley</i>	167
9:30	A robustness proxy based on variations in energetic allocation to growth in Duroc fattening pigs <i>G. Lenoir, L. Flatres-Grall, R. Muñoz-Tamayo, I. David and N.C. Friggens</i>	167

9:45	Genetic architecture of skin histology with implications for heat tolerance in beef cattle <i>R.G. Mateescu, F.M. Rezende, K.M. Sarlo Davila, A. Hernandez, A.N. Nunez Andrade, G.A. Zayas, E.E. Rodriguez and P.A. Oltenacu</i>	168
10:00	Ewe-lamb allocation trade-offs shape ewe lifetime production depending on dietary energy scarcity <i>M. Hiltbold and F. Douhard</i>	168
10:15	Coffee break	
10:45	System performance of three dairy-beef genotypes divergent in carcass merit <i>N. Byrne, D. Fahy, M. Kearney and N. McHugh</i>	169
11:00	Characterization and main factors of variation of milk production in suckler cows <i>B. Sepchat, M. Barbet and A. De La Torre</i>	169
11:15	Mediterranean Baladi cattle presents adaptive traits to cope with climate change in the Near East <i>A. Shabtay, E. Lipkin, M. Soller, F. Garcia-Solares, J. Sölkner, E. Shor-Shimoni, A. Bagnato, M.G. Strillacci and M. Cohen-Zinder</i>	170
11:30	Effect of some environmental variables on milk traits in dairy sheep <i>F. Correddu, A. Cesarani, G. Gaspa, I. Peana, G. Fois, C. Dimauro and N.P.P. Macciotta</i>	170
11:45	Genomic tolerance to harsh climate conditions in beef cattle as a result of cross-breeding program <i>R. Tian and H. Asadollahpour Nanaei</i>	171
12:00	Expected selection responses in breeding plans aiming to limit environmental impacts of trout farming <i>S. Pouil, J. Aubin and F. Phocas</i>	171
12:15	Defining resilience traits in sheep from fibre diameter variation of wool <i>E.G. Smith, S.F. Walkom, D.J. Brown and S.A. Clark</i>	172
12:30	Evaluating the impact of uncertainty in estimated breeding values on optimal contribution selection <i>I. Pocrnic, J. Ortiz and G. Gorjanc</i>	172
12:45	Increasing genetic gain without compromising diversity by selection based on mating qualities <i>T.A.M. Niehoff, J. Ten Napel, P. Bijma, T. Pook, Y.C.J. Wientjes, B. Hegedús and M.P.L. Calus</i>	173

Session 05.

Climate care dairy farming: follow up – Part 1

Room: Bellecour 1

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Galama / Rees

	Theatre Session 05	Book of Abstracts page
8:30	Holistic perspectives on climate care cattle farming <i>G. Van Duinkerken</i>	173
9:00	Climate care farming aspects in China <i>W. Wang</i>	174
9:30	Producer adoption of climate-smart agriculture practices on U.S. grazing lands <i>A. Blair, K. Cammack, H. Menendez, J. Brennan and K. Ehlert</i>	174
9:45	Assessing impacts of new legislation on Dutch dairy farms using a revised linear programming model <i>A. Van Der Linden, L.M. Alderkamp, C.W. Klootwijk, G. Holshof, N. Van Eekeren, F. Taube and C.E. Van Middelaar</i>	175
10:00	Gaseous emissions (building, storage, pasture) of dairy systems combining or not grazing and housing <i>N. Edouard, X. Vergé, C. Flechard, Y. Fauvel and A. Jacotot</i>	175

10:30 Coffee break

11:00	Agri-food and net zero: a science-policy-society perspective	176
	<i>R. McGuire, S. Huws, C. Foyer, P. Forster, M. Welham, L. Spadavecchia, D. Curry and N. Scollan</i>	
11:15	Testing the effects of grassland swards for yield, greenhouse gas emissions and soil health	176
	<i>P.R. Hargreaves, D.Z. Kreismane, A. Dorbe, K. Klumpp, J. Bloor, A. Cieślak, M. Szumacher, A. Szejner and R.M. Rees</i>	
11:30	How to mitigate methane and ammonia emissions at the farm level with innovative approaches	177
	<i>P.J. Galama, H.J. Van Dooren, H. De Boer and C. Schep</i>	
11:45	Effect of mitigation measures on GHG and ammonia emissions of pilot farms in European countries	177
	<i>D. Ruska, K. Naglis-Liepa, P. Hargreaves, A. Lenerts, M. De Vries, P. Galma, A. Kuipers, A. Cieslak, J. Bell, R. Rees, V. Juskiene and M. Skorupka</i>	
12:00	Economic aspects of mitigation practices on pilot dairy farms in Europe	178
	<i>K. Naglis-Liepa, D. Ruska, A. Lenerts and D. Kreismane</i>	
12:15	Specialized or integrated systems: on-farm eco-efficiency of dairy farming in northern Germany	178
	<i>R. Loges, T. Reinsch, I. Vogeler, C. Kluss and F. Taube</i>	
12:30	Modelling methane emission from dairy cows, barn, and storage	179
	<i>S. Lashkari, F.R. Dalby and C.F. Børsting</i>	
12:45	Impact of sorbent application on NH ₃ and CO ₂ and CH ₄ gas emissions from dairy cattle manure	179
	<i>V. Juskiene, R. Juska, G. Kadziene, D. Stankeviciene and R. Juodka</i>	

Poster Session 05

Book of Abstracts page

05.14	Greenhouse gas emissions on dairy farms in Slovenia	180
	<i>M. Klopčič, T. Perčič, M. Bric, S. Rogina, G. Šen, T. Kramer, J. Klopčič, D. Drašler and A. Dolinar</i>	

Session 06.

Production of high quality animal products and implementation of new technologies in animal husbandry

Room: Gratte Ciel 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Georgieva / Hocquette

Theatre Session 06

8:30	'Greenanimo' – green future through research	180
	<i>S.Y. Georgieva</i>	
8:45	PLS-DA analysis on hand-held spectrometer for on-line prediction of beef marbling in slaughterhouses	181
	<i>M. Kombolo, A. Goi, M. Santinello, N. Rampado, S. Atanassova, J. Liu, P. Faure, L. Thoumy, A. Neveu, D. Andueza, M. De Marchi and J.-F. Hocquette</i>	
9:00	Application of computed tomography and hyperspectral images for enhanced meat quality evaluation	181
	<i>T. Stoyanchev, I. Penchev, S. Georgieva, A. Daskalova and S. Atanassova</i>	
9:15	Effect of husbandry factors on marbling deposition	182
	<i>A. Nicolazo De Barmon, I. Legrand, J. Normand and J.J. Bertron</i>	
9:30	Effect of birth type on meat quality in Ile-de-France lambs	182
	<i>E. Achkakanova, I. Penchev and S. Georgieva</i>	
9:45	Relationships between lamb feed efficiency, rumen volume and carcass quality measured by CT scanning	183
	<i>N.R. Lambe, A. McLaren, K.A. McLean, J. Gordon and J. Conington</i>	

10:00 Do biomarkers of residual feed intake in beef cattle remain consistent regardless of feeding level? 183
G. Cantalapiedra-Hijar, K. Nedelkov, P. Crosson and M. McGee

10:15 Coffee break

10:45 Practical application of Observer XT software for behaviour and welfare research in sheep and cattle 184
N.A. Bozakova and M. Halil

11:00 Software tools and technologies used to study animal behaviour-benefits and capabilities of Observer 184
M. Halil, N. Bozakova and S. Georgieva

11:15 Animal welfare: from research to practice 185
I. Veissier, V. Brunet, D. Ledoux and A. De Boyer Des Roches

11:30 Effects of warm climatic periods on dairy cow behaviour and welfare in a maritime European climate 185
M.J. Haskell, I. Sullivan, M. March and L. Shewbridge-Carter

11:45 Behavioural and hormonal effects of intensive sheep farming on milking behaviour in a milking parlour 186
I. Nedeva, T. Slavov, V. Radev, S. Georgieva and I. Varlyakov

12:00 Combining cattle and sheep in a grassland-based system: which effects for system multiperformance? 186
S. Prache, K. Vazeille, B. Sepchat, P. Note, P. Veysset and M. Benoit

12:15 Milking temperament and its relation with test day milk yield in Bulgarian Murrah buffaloes 187
T. Stepancheva, I. Marinov and Z. Gergovska

Poster Session 06

06.15 Introduction of lupins in lamb diets: effects on carcass, meat quality and intramuscular fatty acids 187
M. Almeida, S. Garcia-Santos, D. Carloto, A. Arantes, J. Lorenzo, J.A. Silva, V. Santos, J. Azevedo, C. Guedes, L. Ferreira and S. Silva

06.16 Lipid composition of dromedary camels (*Camelus dromedarius*) raised in extensive and intensive system 188
M. Lamraoui, J. Pestana, M. Costa, C. Alfaia, Y. Khelef, N. Sahraoui, A.M. Almeida and J.A.M. Prates

06.17 Effective application of UAVS in modern livestock agriculture 188
T. Petrova, Z. Petrov and M. Marinov

06.18 Effects of dietary beet pulp on rumen fermentation, beef quality, and intramuscular adiposity 189
M. Baik, S.H. Lee and S.Y. Kim

06.19 The identification of high-quality *Perilla frutescens* Tan lamb meat by multi-metabolomics analyses 189
Y. Yu, B.Y. Zhang, X.Z. Jiang, Y.M. Cui, H.L. Luo and B. Wang

06.20 Effect of feeding garlic-citrus supplement on carcass characteristics and fatty acid profile of beef 190
M.E. Eckhardt, T. Brand, S.A. Salami, B.M. Tas, J.F. Legako, T.E. Lawrence and L.W. Lucher

06.21 Main microclimatic indicators in a milking parlor for dairy cows 190
D. Dimov, T. Penev, I. Marinov, J. Mitev, T. Miteva and M. Stoyanov

06.22 Estimation of rib composition and intramuscular fat from DXA or smartphone imaging in crossbred bull 191
C. Xavier, B. Meunier, I. Morel, Q. Delahaye, Y. Le Cozler, M. Bonnet and S. Lerch

06.23 Perception of beef by the Algerian consumer 191
M. Sadoud and J.F. Hocquette

06.24 Effect of intramammary infection on milk protein profile measured at the quarter level in dairy cows 192
V. Bisutti, D. Giannuzzi, A. Vanzin, A. Toscano, M. Gianesella, S. Pegolo and A. Cecchinato

06.25 Antioxidant and anti-hypertensive properties of acid whey from Greek yoghurt 192
E. Dalaka, A. Vaggeli, G.C. Stefos, I. Palamidi, A. Savvidou, I. Politis and G. Theodorou

Room: Bellecour 3

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Medale / Skiba

Theatre Session 07		Book of Abstracts page
8:30	Recent developments in aquaculture feeds – an industry perspective <i>invited</i> A. Obach	193
9:00	Nutritive value of soybean meals from different origins fed to Nile tilapia N.V. Nguyen, H. Le, V.K. Tran, D.H. Pham, T.L.T. Tran, J.M. Hooft and D.P. Bureau	193
9:15	EcoXtract® green solvent increases rainbow trout performances and decreases susceptibility to VHSV D. Rigaudeau, N. Abdedaim, T. Rochat, L. Jep, F. Terrier, P. Boudinot, S. Skiba-Cassy, L. Jacques and C. Langevin	194
9:30	Environmental impact of aquafeed for rainbow trout containing alternative protein meals M. Berton, C. Fanizza, V. Stejskal, M. Prokešová, M. Zare, H.Q. Tran, F. Brambilla, E. Sturaro, G. Xiccato, A. Trocino and F. Bordignon	194
9:45	New strategies for fish nutrition <i>invited</i> S. Skiba-Cassy, J. Roy, L. Marandel, E. Cardona and F. Medale	195
10:15 Coffee break		
10:45	Rainbow trout hepatic cell lines reveal differences of DL-Methionine and DL-HMTBa function M. Klünemann, K. Pinel, K. Masagounder, I. Seilliez and F. Beaumatin	195
11:00	Millennial salmon – sustainable salmon feed using black soldier fly meal M.L. Lefranc, H.B. Bergoug and K.K. Kousoulaki	196
11:15	Digestibility of ingredients derived from food by-products (insect and single-cell) in Asian seabass R. Le Boucher, W. Chung, J. Ng Kai Lin, L. Tan Shun En, C.S. Lee and C. Wu	196
11:30	Specialty feeds to enhance the health value of farmed fish <i>invited</i> J. Dias, A. Ramalho-Ribeiro, A. Gonçalves, M.T. Dinis and P. Rema	197
Poster Session 07		Book of Abstracts page
07.10	Evaluation of growth performance of pure <i>Clarias gariepinus</i> and its hybrid in monosex culture F.O. Olukoya, O.T.F. Abanikannya, K.O. Kareem-Ibrahim, M.S. Hedonukun and S.O. Adebambo	197
07.11	The effect of feeding on dissolved oxygen and turbidity in trout cultivated in an aquaponics I. Sirakov, K. Velichkova, A. Asenov and R. Rusev	198
07.12	Factors affecting feeding of fish cultivated in recirculation aquaculture system K. Velichkova and I. Sirakov	198
07.13	Effect of mycotoxin co-occurrence on zootechnical performance and health indices of <i>Sparus aurata</i> C. Papadouli, S. Vardali, T. Karatzinos, M. Maniaki, P. Panagiotaki, D. Kogiannou, C. Nikoloudaki, I. Nengas, M. Henry, G. Rigos and E. Golomazou	199
07.14	Fasting influences on several blood chemistry changes: indicators of malnutrition in Nile tilapia S. Boonanuntanasarn, P. Pasomboon, S. Seedum and W. Auppakhun	199
07.15	Technological developments and 3D imaging for the diagnosis of aquaculture fish diseases M. Merhaz, M. Frétau, D. Rigaudeau and C. Langevin	200
07.16	Comparative analyses of growth parameters of pure and hybrid African Catfishes fed two feed types O.T.F. Abanikannya, F.O. Olukoya, K.O. Kareem-Ibrahim, S.M. Adebambo and M.S. Hedonukun	200

07:17	Influence of feeding frequency on growth parameters of African Catfish <i>F.O. Olukoya, K.O. Kareem-Ibrahim, A.A. Jimoh, K.O. Bakare, Z.F. Shopeyin, S.A. Shitta and O.T.F. Abanikannda</i>	201
07:18	The impact of a probiotic supplementation in aquaculture – a bioinformatic modelling <i>A. Brzoza, L. Napora-Rutkowski, M. Mielczarek, T. Kaminska-Gibas, T. Suchocki and J. Szyda</i>	201

Session 08.

Various topics in pig production

Room: Gratte Ciel 1

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Trevisi / Vigors

	Theatre Session 08	Book of Abstracts page
8:30	Role of daily feeding rhythms in the genetics of feed efficiency in growing pigs <i>H. Gilbert, L. Agboola, A. Foury, M. Teissier, F. Gondret and M.P. Moisan</i>	202
8:45	Using sequence variants to detect SNP and pathways affecting pig gut microbiota and feed efficiency <i>H. Gilbert, M. Teissier, K. Fève, S. Legoueix, Y. Billon, V. Déru, A. Aliakbari, J. Bidanel, O. Zemb, Y. Labrunne and J. Riquet</i>	202
9:00	Using digestive efficiency to improve feed efficiency in pig breeding schemes <i>V. Déru, M.J. Mercat, D. Picard, B. Ligonesche, G. Lenoir, L. Flatrès-Grall, F. Ytournel, J. Bidanel and H. Gilbert</i>	203
9:15	Can automatic records of activity predict maternal ability and health in sows? <i>K. Nilsson, A. Bergh and A. Wallenbeck</i>	203
9:30	Cross-breeding strategies to optimize litter size – a way to improve piglet survival? <i>K. Nilsson and A. Wallenbeck</i>	204
9:45	Genetic parameters for genetic variance uniformity in Swiss pigs' birth weight <i>C. Kasper, A. Lepori, J.P. Gutiérrez, N. Formoso-Rafferty, E. Sell-Kubiak and I. Cervantes</i>	204
10:00	A multivariate gametic model for the analysis from reciprocal crosses for two Iberian varieties <i>H. Srihi, D. López-Carbonell, N. Ibáñez-Escriche, J. Casellas, P. Hernández, S. Negro and L. Varona</i>	205
10:15	Coffee break	
10:45	Impact of vaccination against GnRF on growth performance and meat quality of gilts at market weight <i>N. Quiniou, P. Chevillon and F. Colin</i>	205
11:00	Using different gas mixtures for pig stunning – influence on meat quality and gene expression <i>J. Gelhausen, T. Krebs, T. Friehs, J. Knöll, I. Wilk, D. Mörlein and J. Tetens</i>	206
11:15	Lean tissue grows slower in the belly and loin regions of Australian domestic pork carcasses <i>L.T. King, F. Anderson, M. Corlett, A. Williams and G.E. Gardner</i>	206
11:30	Carcass characteristics and boar taint in entire male pigs from commercial French organic farms <i>S. Lombard, A. Roinsard and A. Prunier</i>	207
11:45	Boot swabs to assess efficiency of cleaning and disinfection of slatted floors in pig barns <i>R.H. Mateus-Vargas, N. Kemper, K. Butenholz, N. Volkmann, C. Sürrie and J. Schulz</i>	207
12:00	The impact of temperature on transmission of African swine fever in contaminated livestock vehicles <i>Y. Gao, A. Boklund, L. Nielsen, L. Alban and M. De Jong</i>	208
12:15	Porcine ear necrosis is associated with social behavior and blood biomarkers in weaned pigs <i>T. Nicolazo, C. Clouard, C. Teixeira Costa, G. Boulbria, A. Lebret, V. Normand and E. Merlot</i>	208
12:30	Pelleting and botanical source influence starch utilization in growing pigs <i>A. Agouros, M. Le Gall, K. Quémeñeur, Y. Lechevestrier, L. Montagne, N. Quiniou and E. Labussière</i>	209

12:45	Effects of a blend of phytogenic feed additives on performance in fattening pigs fed liquid feed <i>A. Samson, W. De Gaiffier, E. Janvier and S. Constantin</i>	209
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Poster Session 08

Book of Abstracts page

08.17	Genetic parameters of digestive coefficients in three pig breeds <i>C. Carillier-Jacquin, P. Ganier, J. Bidanel, C. Hassenfratz, B. Blanchet, V. Deru, E. Labussiere and H. Gilbert</i>	210
08.18	Breeding for uniformity in piglet birth weight to improve survival <i>C. Kasper, A. Lepori, J.P. Gutiérrez, N. Formoso-Rafferty, E. Sell-Kubiak and I. Cervantes</i>	210
08.19	Genetic lines influence carcass traits and quality of pork <i>X. Li, M. Ha, R. Warner, R. Hewitt, D. D'Souza and F. Dunshea</i>	211
08.20	Boar taint: pedigree-based BLUP and genomic BLUP, and associations with green-ham quality traits <i>S. Faggion, P. Carnier and V. Bonfatti</i>	211
08.21	Diversity of pig breeds reared in the Czech Republic <i>E. Krupa, Z. Krupová, E. Žáková, N. Moravčíková and I. Vrtková</i>	212
08.22	Wild boar and domestic pig identification based on GBS study <i>A. Koseniuk, G. Smolucha, A. Gurgul, T. Szmatoła, M. Oczkowicz and A. Radko</i>	212
08.23	Structural analysis of the HK2 gene in the aspect of pigs performance and meat quality parameters <i>K. Woźniak, A. Terman, D. Polasik, G. Žak, M. Tyra and K. Ropka-Molik</i>	213
08.24	Methods to maximize accuracy of selection in maternal genetic model for genetic evaluation of pigs <i>M. Satoh</i>	213
08.25	Parentage control of pigs based on SNP data <i>E. Žáková, Z. Krupová, E. Krupa, J. Stibal and I. Vrtková</i>	214
08.26	Prediction of piglet survival based only on birth weight or within-litter birth weight variability <i>J.M. Mbutia, C. Kasper, M. Zenk, G. Bee, C.C. Metges and G. Daş</i>	214
08.27	Effect of fenugreek cotyledons on farrowing sow performances <i>M. Le Bot, J. Laurain, E. Belz and A. Benarbia</i>	215
08.28	Effects of different dietary fibres on constipation in sows during late pregnancy <i>D. Lu, Y. Pi, H. Ye, D. Han, B. Kemp, N. Soede and J. Wang</i>	215
08.29	Effect of transportation condition of pigs during transport for slaughter under different season <i>D.C. Song, S.Y. Chang, J.W. An, S.H. Park, K.H. Jeon and J.H. Cho</i>	216
08.30	<i>Salmonella</i> excretion level by pigs and impact of disinfection on antibiotic resistance of <i>E. coli</i> <i>C. Soumet, A. Kerouanton, A. Bridier, B. Anger, V. Dorenlor, V. Rose, F. Eono, C. Houdayer, E. Houard, E. Eveno, F. Souchaud, B. Houry, C. Valentin, P. Houée, I. Attig, N. Haddache, M. Denis and C. Fablet</i>	216
08.31	Climate change adaptation in mixed pigs-beef cattle systems in grasslands areas: key role of organic <i>S. Mugnier, L. Valero, C. Husson, F. Von Kerssenbrock, B. Dounies, H. Rapey and C. Philippeau</i>	217
08.32	Financial implications associated with ante- and <i>post-mortem</i> inspection findings in finishing pigs <i>D.L. Teixeira, L.C. Salazar and L.A. Boyle</i>	217
08.33	Training during rearing: effect on body reserves' flexibility & long-term reproduction in rabbit doe <i>J.J. Pascual, E. Martínez-Paredes, L. Ródenas, E. Blas and M. Cambra-López</i>	218

Room: Tête D'or 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Sanchez / Gligorescu

Theatre Session 09		Book of Abstracts page
8:30	Replacement of poultry by-product meal by black soldier fly larvae meal in diets for dogs <i>B. Agy Loureiro, R.K. Nobrega Cardoso, R. Silva Carvalho, W.A. Zamora Restan, M. Dalim, N. Martin Tome and A. Paul</i>	218
8:45	<i>Hermetia illucens</i> meal in Rainbow trout diet – preliminary data of a commercial scenario <i>S. Bellezza Oddon, I. Biasato, C. Caimi, P. Badino, F. Gai, M. Renna and L. Gasco</i>	219
9:00	Mealworm protein hydrolysate as a novel functional ingredient for aquaculture applications <i>L. Sanchez</i>	219
9:15	Effect of black soldier fly larvae oil on performance and health of lactating sows and piglets <i>C. Omphalius, M. Walraven, S. Juliiand and H. Bergoug</i>	220
9:30	Effects of dietary <i>Tenebrio molitor</i> meal and chitosan on health and meat quality of weaned piglets <i>C. Zacharis, E. Bonos, A. Tzora, I. Skoufos, G. Magklaras, I. Giavasis, I. Giannenas, E. Antonopoulou, C. Athanasiou and A. Tsinas</i>	220
9:45	Defatted insect meals: impact on <i>in vitro</i> ruminal fermentation and lipid biohydrogenation <i>M. Renna, M. Coppa, C. Lussiana, A. Le Morvan, L. Gasco, L. Rastello and G. Maxin</i>	221
10:00	Can the mixture of <i>Hermetia illucens</i> and <i>Tenebrio molitor</i> meals improve performance in broilers? <i>I. Biasato, M. Gariglio, E. Fiorilla, V. Bongiorno, E.E. Cappone, S. Bellezza Oddon, L. Gasco and A. Schiavone</i>	221
10:15	Coffee break	
10:45	Including different products from black soldier fly larvae in the diet of slow-growing broilers <i>A. Rezaei Far, T. Veldkamp, J. Van Harn, S. Naser El Deen, P. Van Wikselaar and I. Fodor</i>	222
11:00	Effect of feeding black soldier fly larvae products to slow-growing broilers on welfare and health <i>A. Doerper, G. Gort, I.C. De Jong, T. Veldkamp and M. Dicke</i>	222
11:15	The immune response of slow-growing broiler chickens fed black soldier fly larvae meal <i>A. Rezaei Far, C.A. Jansen, J. Van Harn, P. Van Wikselaar, S.K. Kar and T. Veldkamp</i>	223
11:30	Does BSF meal have an impact in broilers with a subclinical necrotic enteritis challenge? <i>T. Veldkamp, J.J. Mes, A. Rezaei Far, S. Naser El Deen, P. Van Wikselaar, I. Fodor, R. Van Emous and L. Van Eck</i>	223
11:45	Black soldier fly larval diet eliminate chicken coronavirus at an early infection stage <i>Y. Zhang, C.Y. Yang, C.J. Li, Z.H. Xu, P. Peng, C.Y. Xue, J.K. Tomberlin, W.F. Hu and Y.C. Cao</i>	224
12:00	Black soldier fly larvae meal alter chicken gut microbiota to restricts coronavirus infection <i>C.Y. Yang, Y. Zhao, O. Peng, C. Li, Y. Cao and Y. Zhang</i>	224
12:15	Black soldier fly larvae meal as the main protein source improves feed efficiency in laying hens <i>A. Rezaei Far, I. Fodor, P. Van Wikselaar, S. Naser El Deen and T. Veldkamp</i>	225
12:30	Antibacterial and anticoccidial activities of black soldier fly extract <i>L. Sedano, E. Chambellon, F.I. Bussiere, E. Helloin, M. Vian, C. Guidou, C. Trespuech and A. Silvestre</i>	225
Poster Session 09		Book of Abstracts page
09:16	The metabolizable energy value of black soldier fly larvae fat used in broiler chicken diets <i>B. Kierończyk, M. Rawski, K. Stuper-Szablewska, K. Dudek and D. Józefiak</i>	226

09.17	<i>Hermetia illucens</i> larva fat affects broiler chicken breast meat quality <i>B. Kierończyk, M. Rawski, Z. Mikołajczak, P. Szymkowiak, K. Stuper-Szablewska, M. Dudek and D. Józefiak</i>	226
09.18	Evaluation of two black soldier fly products on hens' performance, hatchability, and health traits <i>P. Hristakieva, N. Mincheva, I. Ivanova, K. Velikov and A. Petrova</i>	227
09.19	Insect meals digestibility for rainbow trout aquafeeds: <i>in vivo</i> and <i>in vitro</i> preliminary results <i>C. Caimi, F. Moyano Lopez, S. Bellezza Oddon, M.J. Aznar, V. Zambotto, F. Gai and L. Gasco</i>	227
09.20	Suitability of full-fat and defatted black soldier fly meal as ingredient for chicken diets <i>D. Murawska, D. Witkowska, M. Gesek, T. Bakula and J. Błażej-Grabowska</i>	228
09.21	Protein and amino acids digestibility of two black soldier fly larvae meal forms in broilers <i>A. Cerisuelo, E.A. Gómez, A. Martínez-Talaván, L. Piquer, D. Belloumi, C. Cano, M. Martínez, C. Fernández and S. Rojo</i>	228
09.22	CIPROMED: a PRIMA project on the use of alternative proteins in the Mediterranean value chains <i>C.G. Athanassiou, S. Smetana, A. Tassoni, L. Gasco, F. Gai, A. Shpigelman, D. Pleissner, M. Gastli, L. Conceição, F. Robinson, J.-I. Petrusán and C.I. Rumbos</i>	229
09.23	Replacing fishmeal by <i>Hermetia illucens</i> larvae on growth performance and meat quality in broiler <i>K.H. Jeon, D.C. Song, S.Y. Chang, J.W. Ahn, H.A. Cho, S.H. Park, H. Kim and J.H. Cho</i>	229
09.24	Investigation of the suitability of two <i>Tenebrio molitor</i> meals in diets of weaned piglets <i>C. Zacharis, G. Magklaras, I. Giavasis, I. Giannenas, E. Antonopoulou, A. Tsinas, C. Athanassiou, A. Tzora, I. Skoufos and E. Bonos</i>	230
09.25	Effect of different black soldier fly frass in plant yield and nutritional value <i>I. Rehan, I. Lopes, D. Murta, O. Moreira and R. Menino</i>	230

Session 10. Impact of epigenetics and genetics in determining animal physiology

Room: Tête D'or 1

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Jammes

Theatre Session 10		Book of Abstracts page
8:30	The place of epigenetics in the livestock of tomorrow <i>invited E.M. Ibeagha-Awemu and M. Wang</i>	231
9:00	A capture-based approach for DNA methylation analysis in cattle <i>V. Costes, A. López-Catalina, O. Gonzalez Recio, M. Ben Sassi, D.E. Rico, G. Foucras, C. Le Danvic, C. Hozé, M. Boussaha, D. Boichard, H. Jammes and H. Kiefer</i>	231
9:15	DNA-methylome analysis of milk somatic cells upon subclinical mastitis in Holstein cattle <i>S. Pegolo, D. Giannuzzi, A. Vanzin, V. Bisutti, A. Toscano, E. Capra, P. Ajmone Marsan and A. Cecchinato</i>	232
9:30	Feed efficiency correlates with the transcriptomic response to feed intake in the pig duodenum <i>G. Devailly, K. Fève, S. Saci, J. Sarry, S. Valière, J. Lluch, O. Bouchez, L. Ravon, Y. Billon, H. Gilbert, M. Beaumont and J. Demars</i>	232
9:45	Epigenetic biomarkers for environmental enrichment and parity in pregnant sows <i>M.M. Lopes, A. Chaulot-Talmon, A. Frambourg, H. Kiefer, C. Gerard, J. Demars, E. Merlot and H. Jammes</i>	233
10:00	A large population study to assess the magnitude of foetal programming in cattle <i>C. Fouéré, C. Hozé, M. Boussaha, H. Kiefer, M.P. Sanchez and D. Boichard</i>	233
10:15 Coffee break		
10:45	Non-coding exonic microsatellite in bovine Nrf2 gene influences sperm oxidative stress capacity <i>K. Anwar, G. Thaller and M. Saeed-Zidane</i>	234

11:00	Maternal methionine restriction affects liver metabolism and foie gras production in duck offspring <i>C.M.D. Bonnefont, A. Sécula, H. Chapuis, L. Bodin, L.E. Bluy, A. Bonnet, A. Cornuez, M.-D. Bernadet, J. Barrieu, E. Cobo, X. Martin, H. Manse, L. Gress, M. Lessire, F. Mercierand, M.-C. Le Bourhis, A. Collin and M. Morisson</i>	234
11:15	Garcinol promotes hepatic gluconeogenesis by inhibiting PCAF acetyltransferases in late-pregnant Sow <i>W.L. Yao, Q.Y. Fu and J.X. Ning</i>	235
11:30	Early high nutrition affects epigenetics related to lipogenesis in grass-fed Wagyu <i>D. Nishino, S. Khounsaknalath, K. Saito, A. Saito, T. Abe, E. Kobayashi, S. Yasuo and T. Gotoh</i>	235

Poster Session 10

Book of Abstracts page

10.11	Construction of a single-cell transcriptome map of sheep horn development <i>X.H. He, Y.Y. Luan, S.J. Wu, Y.H. Ma and L. Jiang</i>	236
10.12	The effect of short and long term cryopreservation on chicken primordial germ cells <i>M. Ibrahim, K. Stadnicka, E. Grochowska, B. Lazar, E. Varkonyi and M. Bednarczyk</i>	236
10.13	The effect of garcinol on muscle <i>post mortem</i> glycolysis and meat quality in pigs <i>T.X. Wang, L. Huang and X.M. Liu</i>	237
10.14	The effect of methionine supplementation on DNA methylation during the suckling period of ewe lambs <i>A. Martín, O. Madsen, F.J. Giráldez, J. De Vos and S. Andrés</i>	237
10.15	Effect of supplementary diet at cow-calf phase on DNA methylation in muscle of Angus-Nellore calves <i>R. Curi, L. Rodrigues, R. Cooke, W. Baldassini, L.A. Chardulo and O. Machado Neto</i>	238

Session 11.

Improving pig welfare in conventional production systems

Room: Gratte Ciel 3

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Gottardo / Blanco Penedo

Theatre Session 11

Book of Abstracts page

8:30	Improving pig welfare in commercial pig farms <i>K. O'Driscoll</i>	238
9:15	Effects of different nutritional strategies on the prevalence of tail biting in weaned piglets <i>E. Janvier, W. De Gaiffier, J. Piqué, S. Lebas and A. Samson</i>	239
9:30	Validation of an Irish tail biting risk assessment tool <i>R.M. D'Alessio, C.G. Mc Aloon, C. Correia-Gomes, A. Hanlon and K. O'Driscoll</i>	239
9:45	Improving finishing pig welfare by providing rooting and bedding materials <i>M. Ocepek, R.C. Newberry and I.L. Andersen</i>	240
10:00	Impact of enrichment material and space allowance on damaging behaviour in pigs <i>M. Cupido, S.M. Mullan, K.M. O'Driscoll and L.A. Boyle</i>	240
10:15	Coffee break	
10:45	An investigation of early life indicators in relation to ear necrosis in pigs <i>L. Markland, K. O'Driscoll, F. Leonard and L. Boyle</i>	241
11:00	Improving the welfare of sows and piglets: an exploration of teeth resection under the 3S framework <i>L. Boyle</i>	241
11:30	Mitigating the impacts of hot conditions on lactating sows through meal delivery or feed <i>N. Quiniou, J. Dupuis and D. Renaudeau</i>	242

11:45	Effect of comfort and enrichment for pregnant sows on the health and resilience of their offspring <i>M. Lagoda, K. O'Driscoll, M. Galli, J. Cerón, A. Ortín-Bustillo, J. Marchewka and L. Boyle</i>	242
12:00	Use of organic nest-building material in free-farrowing pens with short term fixation <i>J. Wahmhoff, N. Kemper, A. Van Asten and I. Traulsen</i>	243
12:15	Welfare of group-housed sows in the mating area <i>S. Geisler, A. Van Asten, N. Kemper and I. Traulsen</i>	243
12:30	Current knowledge and ways forward to improve welfare of cull sows during transport and in lairage <i>C. Kobek-Kjeldager, L.D. Jensen, L. Foldager, L.M. Gould, K. Thodberg, D.L. Schrøder-Petersen and M.S. Herskin</i>	244
12:45	Exposure times and stunning effectiveness for argon and nitrogen-argon mixture for pigs at slaughter <i>J. Knöll, J. Gelhausen, T. Friebs, T. Krebs, D. Mörlein, J. Tetens and I. Wilk</i>	244

Poster Session 11

11.14	Stability of performance in sows switching between crate and pen from one parity to the next <i>L. Canario, J. Bailly, S. Reignier, M. Poupin, Y. Billon and W. Hébrard</i>	245
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Session 12. Technologies for outdoor systems: which application and opportunities?

Room: Roseraie 3

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Maroto-Molina / Gautier

Theatre Session 12

Book of Abstracts page

8:30	Preliminary results on the use of weather data to predict production output in a Merino flock <i>P.G. Theron, T.S. Brand, S.W.P. Cloete and K. Dzama</i>	245
8:45	GIS-based data integration system as a design tool for rangeland management in productive landscapes <i>M. Odintsov Vaintrub, M. Bianchini, L. Lizzi, F. Paciocco, M. Francioni and P. D'Ottavio</i>	246
9:00	Remotely monitored animal behaviour using sensor ear tags on cattle in Switzerland <i>K. Ueda, U. Heikkilä, N. Gobbo Oliveira Erünlü, J. Bérard, O. Wellnitz and S. Rieder</i>	246
9:15	Differentiating feeding behaviour in grazing cattle based on IMU data and machine learning algorithms <i>N. Tilkens, A.L.H. Andriamandroso and J. Bindelle</i>	247
9:30	Monitoring animal movements by virtual fencing collars – a comparison of different GPS intervals <i>D. Hamidi, M. Komainda, N.A. Grinnell, F. Riesch, J. Horn, M. Hamidi, I. Traulsen and J. Isselstein</i>	247
9:45	The impact of virtual fence use on blood markers linked to stress and acute phase response in cattle <i>J. Ranches, M. Ferreira, G.M.P. Hernandez, A.R. Santos, R.C. O'Connor, D. Johnson, D.W. Bohnert and C. Boyd</i>	248
10:00	Drones to facilitate the monitoring of grazing animal: which application and opportunities? <i>A. Lebreton, A. Demarbaix, F. Demarquet, J. Douhay, P.-G. Grisot, L. Depuille and E. Nicolas</i>	248

10:15 Coffee break

10:45	Modular communication gateways, a new opportunity for precision management of agroecological farms <i>M. Odintsov Vaintrub and P. Di Giuseppe</i>	249
11:00	Deploying a LoRa network in mountainous areas to connect animals and shepherds <i>T. Kriszt, O. Benoit, G. Besche, J.D. Guyonneau, E. González-García and J.B. Menassol</i>	249

Poster Session 12

Book of Abstracts page

12.10	Effect of successive drone herding on behaviour and spatial distribution of grazing cattle <i>H. Anzai and M. Kumaishi</i>	250
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12.11	Evaluation of the RumiWatchSystem to measure activity and grazing behaviour of sheep <i>E. Dunne, N. McHugh and F.M. McGovern</i>	250
12.12	Remote monitoring of cattle using sensor ear tags <i>K. Ueda, T. Kuntzer, U. Heikkilä, N. Gobbo Oliveira Erünlü, J. Bérard, C. Beglinger, O. Wellnitz and S. Rieder</i>	251

Session 13. Innovations and technological advancements in small ruminant production with particular emphasis in Mediterranean semi-extensive or extensive systems

Room: Roseraie 2

Date: Monday 28 August 2023; 8:30 – 13:00

Chair: Hadjipavlou / Lauvie

	Theatre Session 13	Book of Abstracts page
8:30	Update on sensor technologies for performance recording, management and welfare in small ruminants <i>G. Caja, A. Elhadi, E. González, J.B. Menassol, G. Tessnière, V. Giovanetti, M. Decandia, M. Acciaro, E.M. Sossidou, S.I. Patsios, L.T. Csiszter, L. Grova, G.H.M. Jorgensen, I. Halachmi, A.B. Shamaï, T.W.J. Keady, C.M. Dwyer, T. Waterhouse, A. McLaren and C. Morgan-Davis</i>	251
	invited	
9:00	P@stor-all: a spatialized information system for decision-making in extensive grazing systems <i>U. Kalenga Tshingomba, L. Sautot, M. Teisseire and M. Jouven</i>	252
9:15	Day and night sexual activity of rams as recorded by an automatic heat detector <i>M. Alhamada, E. González-García, N. Debus, A. Lurette, J.-B. Menassol and F. Bocquier</i>	252
9:30	Walking distance and maintenance energy requirements of sheep during mountain pasturing <i>T. Zanon, M. Gruber and M. Gauly</i>	253
9:45	Percutaneous liver biopsy obtention by ultrasonographic guidance in small ruminants <i>S. González-Luna, X. Moll, S. Serhan, B. Chaalia, A.A.K. Salama, X. Such and G. Caja</i>	253
10:00	Modelling milk yields of New Zealand dairy goats undergoing normal and extended lactations <i>N. Lopez-Villalobos and S.A. Turner</i>	254
10:15	Coffee break	
10:45	Operational use of GPS collars for decision making by agro-silvo-pastoral farmers in Mediterranean areas <i>L. Sautot, I. Candela and M. Jouven</i>	254
11:00	AGRICYGEN: innovative phenotyping and high-throughput genotyping studies of Cyprus sheep and goats <i>G. Hadjipavlou, S. Andreou, T. Christofi, A.C. Dimitriou, A.N. Georgiou, L. Koniali, G. Maimaris, P. Markou and S. Panayidou</i>	255
11:15	Genetic improvement of milk production traits in the Cyprus Damascus goat population <i>S. Andreou, A.N. Georgiou, G. Maimaris, A. Dimitriou, L. Koniali and G. Hadjipavlou</i>	255
11:30	Genetic trends for test day milk yield in White Maritza and Patch-faced Maritza sheep breeds <i>P. Zhelyazkova and D. Dimov</i>	256
11:45	Genetic and environmental effects on the survival and growth rates of Cyprus Chios lambs <i>T. Christofi, S. Panayidou, L. Koniali and G. Hadjipavlou</i>	256
12:00	Genetic and non-genetic factors affecting survival and growth of Cyprus Damascus goat kids <i>L. Koniali, S. Andreou, T. Christofi and G. Hadjipavlou</i>	257
12:15	Feed restriction in dairy ewes decreases milk lipolysis and remodels the milk proteome and lipidome <i>M. Delosière, L. Bernard, C. Hurtaud, H. Larroque, S. Emery, A. Delavaud, M. Taillandier, P. Le Faouder, M. Bonnet and C. Cebo</i>	257

Poster Session 13		Book of Abstracts page
13.14	Garlic essential oil supplementation in sheep: effect on fermentation parameters <i>C. Saro, I. Mateos, F.J. Giráldez and M.J. Ranilla</i>	258
13.15	Effect of garlic essential oil supplementation on rumen microbial community of sheep <i>I. Mateos, E. Mata-Nicolás, C. Saro, R. Li, R. Baldwin, F.J. Giráldez and M.J. Ranilla</i>	258
13.16	High-precision scanning system for complete 3D goat udder and teat imaging and analysis <i>G. Coquereau, P.G. Marnet, L. Delattre, J.M. Delouard and P. Martin</i>	259
13.17	Asymmetric udder – a possible indicator of subclinical mastitis in ewes <i>K. Tvarožková, V. Tančin, M. Oravcová, M. Uhrinčat, L. Mačuhová, B. Gancárová and M. Ptáček</i>	259
13.18	Effects of the nature of milk replacer on growth performances and carcass and meat quality of kids <i>J. Normand, C. Boyer, S. Meurisse, A. Pommaret and M. Drouet</i>	260
13.19	Effect of somatic cell count and stage of lactation on milk production <i>L. Mačuhová, V. Tančin, J. Mačuhová, M. Uhrinčat and M. Oravcová</i>	260
13.20	Fit of mathematical models to the lactation curves of dairy sheep <i>L. Guevara, L.S. Gloria, J.C. Angeles-Hernandez, A.M. Fernandes and M.L.C. Abreu</i>	261
13.21	Udder health in dairy ewes in Slovakia: current situation <i>V. Tančin, K. Tvarožková, B. Gancárová, L. Mačuhová, M. Uhrinčat, M. Vršková and M. Oravcová</i>	261
13.22	Evaluation of udder health of dairy goats using electrical conductivity under practical conditions <i>M. Uhrinčat, V. Tančin, K. Tvarožková, B. Gancárová, L. Mačuhová and M. Oravcová</i>	262
13.23	Milk recording protocols and goodness of fit of models applied to dairy sheep lactations <i>L. Guevara, L.S. Gloria, J.C. Angeles-Hernandez, I. Nacarati Da Silva, A.M. Fernandes and A. Peláez Acero</i>	262
13.24	Heritability of milk lipolysis in French Alpine goats <i>H. Larroque, C. Robert-Granié, S. Meurisse, P. Trossat, L. Bernard, C. Hurtaud, C. Huau, T. Fassier, R. Rupp and C. Cebo</i>	263
13.25	Castration method affects the fatty acid profile of subcutaneous and intramuscular fat in sheep <i>H.A. O'Neill, N. Skele, O.B. Einkamerer, A. Hugo and F.W. Nesper</i>	263
13.26	Somatic cell count and prevalence of udder pathogens isolated in raw goat milk <i>B. Gancárová, K. Tvarožková, M. Uhrinčat, L. Mačuhová and V. Tančin</i>	264
13.27	Lowering crude protein and supplementing rumen protected methionine and lysine in dairy ewes <i>K. Droumsekas, A. Plomaritou, I.C.C. Christou, A. Tsigkas, M.A. Belaid, D. Martinez Del Olmo, J. Mateos and A. Foskolos</i>	264
13.28	FASTOChe project: meat sheep grazing on plant species rich in bioactive secondary compounds <i>M. Bernard, H. Hoste, L. Sagot and D. Gautier</i>	265

Session 14.

Sustainable livestock farming – defining metrics and rationalising trade-offs? – Part 2

Room: Prestige Gratte Ciel

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Lee / O'Mara

Theatre Session 14		Book of Abstracts page
14:00	Multiple mitigation strategies may lead to reduction in emissions for mixed Kenyan dairy systems <i>M.W. Graham, C. Arndt, D. Korir, S. Leitner, L. Merbold, P. Ndung'u, F. Teillard and A. Mottet</i>	265

14:15	Assessing multifunctionality of livestock breeds and species at global level <i>G. Leroy, F. Joly, C. Looft, P. Boettcher and R. Baumung</i>	266
14:30	Predicting sustainable futures: does disease in early life result in trade-offs in ewe productivity? <i>J. Duncan, H. McDougall, G. Mitchell, R. Evans, M. Reeves, L. Andrews, E. Geddes, L. Melville, D. Ewing and F. Kenyon</i>	266
14:45	The welfare of housed and grazing beef cattle assessed by hormones levels and physical check scores <i>M.J. Rivero and A.S. Cooke</i>	267
15:00	Creating a shared framework for standardizing life cycle assessments in livestock production systems <i>P. Goglio, M. Trydeman Knudsen, K. Van Mierlo, N. Röhrig, M. Fossey, A. Maresca, H. Fatemeh, M. Ahmed Waqas, J. Yngvesson, G. Nassy, R. Broekema, S. Moakes, C. Pfeifer, R. Borek, D. Yanez-Ruiz, M. Quevedo Cascante, A. Syp, T. Zylowsky, M. Romero-Huelva and L.G. Smith</i>	267
15:15	Defining operational sustainability and the need for systems approach in assessing livestock farming <i>A.H. Herlin, S. Hellstrand and H.U. Sverdrup</i>	268
15:30	The global roundtable for sustainable beef; multi-stakeholder engagement driving progress worldwide <i>R. Petre and J. Eisele</i>	268

15:45 Coffee break

16:15	Developing a decision support system for integral sustainability improvement of Dutch dairy farm <i>M. De Vries, J.W. Reijs, G.J. Doornewaard, A.P. Bos and C.A. Schep</i>	269
16:30	Animal welfare index in sustainability assessments <i>L. Rydhmer and E. Rööös</i>	269
16:45	Sustainability analysis of large-scale dairy farming in China from water-energy-labour nexus insight <i>X. Du, Q. Wang and Z. Shi</i>	270
17:00	Characterizing the socio-economic and environmental performance of Irish beef and sheep farms <i>M.C. Ayala, J.C.J. Groot, K. Kilcline, I.J.M. De Boer, C. Grace, J. Kennedy, B. Moran and R. Ripoll-Bosch</i>	270
17:15	Benchmarking the sustainability performance of pastoral dairy-beef production systems <i>M. Kearney, J. Breen, E. O` Riordan and P. Crosson</i>	271
17:30	Measuring, reporting and verifying farm sustainability (Food Futures) <i>R. McGuire, A. Aubry, S. Morrison, J. Birnie and N. Scollan</i>	271
17:45	Closing of the 3 rd ATF-EAAP LFS symposium <i>F. O`Mara and M. Lee</i>	272

Poster Session 14

Book of Abstracts page

14.15	Environmental performance by type of Iberian farm in the Dehesa ecosystem <i>J. García-Gudiño, J. Perea, E. Angón and I. Blanco-Penedo</i>	272
14.16	Ration protein content affects intake, production, efficiency and methane emission of dairy cows <i>F. Schori, C. Kasper and A. Münger</i>	273
14.17	Is protein autonomy synonymous with economic efficiency? <i>E. Bertrand, C. Corre and R. Bore</i>	273
14.18	Development of multicriteria analysis' methodology in an experimental farms network <i>C. Corre and C. Brasseur</i>	274
14.19	Multicriteria analysis on French experimental farm which develops its feed self-sufficiency <i>C. Corre and R. Boré</i>	274
14.20	Partial indicators monitoring in dairy farm: effect of feed efficiency improvement on gross margin <i>G.S.S. Gian Simone Sechi and A.A.S. Alberto Stanislaio Atzori</i>	275

14.21	Comparison of methodologies for estimating animal emissions from smallholder cattle systems <i>E. Balcha and C. Arndt</i>	275
14.22	Developing a common framework to measure sustainability in food systems with limited arable land <i>P. Bhérier-Breton, A. Woodhouse, E. Svanes, H.F. Olsen and B. Aspeholen Åby</i>	276
14.23	Partial indicators monitoring in dairy farms: feed efficiency implications on gross margin <i>G.S. Sechi and A.S. Atzori</i>	276

Session 15.

Breeding for climate change – mitigation

Room: Tête D'or Lounge

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Pszczola / Neumann

	Theatre Session 15	Book of Abstracts page
14:00	Genomic evaluation to reduce enteric methane emissions in Holstein cattle <i>F. Malchiodi, H.R. Oliveira, S. Narayana, A. Fleming, H. Sweett, S. Shadpour, J. Jamrozik, G. Kistemaker, P. Sullivan, F.S. Schenkel, B. Van Doormaal, C.F. Baes and F. Miglior</i>	277
14:30	Methane phenotyping for genetic selection – can we measure bulls, not cows? <i>L.R. McNaughton, P. Beatson, G. Worth, D.J. Garrick, D. Garrick, R. Handcock and R.J. Spelman</i>	277
14:45	Novel formulas to calculate methane production from concentrations while using sniffers <i>C.I.V. Manzanilla-Pech, M.H. Kjeldsen, T. Villumsen and J. Lassen</i>	278
15:00	Predicting methane production and intensity from milk mid-infrared spectra <i>S. Fresco, A. Vanlierde, R. Lefebvre, M. Gaborit, D. Boichard, R. Bore, S. Fritz, N. Gengler and P. Martin</i>	278
15:15	Genetic parameters for enteric methane emissions of dairy cows using random regression models <i>A.E. Van Breukelen, M.N. Aldridge, R.F. Veerkamp and Y. De Haas</i>	279
15:30	Heritability of methane emission in dairy cows estimated from GreenFeed measures in commercial herds <i>B. Heringstad, K.A. Bakke and G. Difford</i>	279
15:45	Coffee break	
16:15	Rapid measurements for breeding low methane cattle <i>S.J. Rowe, A. Searle, T. Bilton, S. Sevier, S. Gebbie, A. Jonker, P. Janssen, S. Hickey, N. Amyes, S. Worku and J. McEwan</i>	280
16:30	Collecting and preparing sniffer records for genetic evaluation of enteric methane in dairy cattle <i>T.M. Villumsen, P. Løvendahl, V. Milkevych, R. Krogh, C.I.V. Manzanilla-Pech, M. Bjerring, J. Lassen and G. Sahana</i>	280
16:45	Methods and tools for automated processing of sniffer-based methane emission data from dairy cows <i>V. Milkevych, R.K. Nielsen, T.M. Villumsen, P. Løvendahl and G. Sahana</i>	281
17:00	Indicators of genetic selection using sniffer method to reduce methane emissions from Holstein cows <i>Y. Uemoto, T. Tomaru, M. Masuda, K. Uchisawa, K. Hashiba, Y. Nishikawa, K. Suzuki, T. Kojima, T. Suzuki and F. Terada</i>	281
17:15	Reducing methane emissions: foundations for genetic evaluations for sustainable Irish beef cattle <i>C.V. Ryan, S. Conroy, T. Pabiou, D.C. Purfield and R. Evans</i>	282
17:30	Determining relative values of genetic traits of Chinese dairy cattle in greenhouse gas mitigation <i>Y. Wang, R. Shi, A. Van Der Linden, B.J. Ducro, Y. Wang, Y. Hou, S.J. Oosting and C.E. Van Middelaar</i>	282
17:45	Effects of breeding for feed efficiency on carbon footprint of milk – LCA approach <i>S. Hietala, A. Astaptsev, E. Negussie, M.H. Lidauer and T. Mehtiö</i>	283

Poster Session 15**Book of Abstracts page**

15.14	Automated CT analysis to identify low emitting ruminants <i>S. Hitchman, L. Grundy, W. Bain, T. Johnson, M. Reis, H. Gunnarsdottir, J. McEwan and S. Rowe</i>	283
15.15	Enteric methane emission of Nellore cattle from two lines selected for yearling weight <i>S.B. Gianvecchio, M.S. Borges, J.A. Silva, J.P.S. Valente, J.O.S. Marcatto, L.G. Albuquerque, J.N.S.G. Cyrillo and M.E.Z. Mercadante</i>	284
15.16	Genetic correlation between enteric methane emission and feed efficiency and growth traits in cattle <i>M.E.Z. Mercadante, J.P.S. Valente, S.B. Gianvecchio, J.O.S. Marcatto, M.S. Borges, J.A. Silva, I.M.C. Garcia, S.F.M. Bonilha and L.G. Albuquerque</i>	284
15.17	Heritability of predicted enteric methane emission in Japanese Holstein cows <i>R. Tatebayashi, A. Nishiura, F. Terada, Y. Uemoto, M. Aihara, T. Suzuki, I. Nonaka and O. Sasaki</i>	285
15.18	Using genomic markers and microbiome data to predict methane emissions from Holstein cows <i>N. Saedi, M.S. Lund and E. Karaman</i>	285

Session 16. **Alternative and new feed resources to reduce feed/food competition and enhance circularity of livestock production**

Room: Bellecour 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Ranilla García / Stergiadis

Theatre Session 16**Book of Abstracts page**

14:00	Non-traditional feed ingredients in diets for pigs invited <i>H. Stein</i>	286
14:30	Effect of genotypes on agronomic and antinutritional traits of <i>Lupinus albus</i> L. for livestock <i>M. Oteri, D. Scordia, R. Armone, V. Nava, F. Gresta and B. Chiofalo</i>	286
14:45	Dietary effects of xylanase and flaxseeds on performance, meat quality and bone health in broilers <i>D. Lanzoni, M. Skřivan, M. Englmaierová, M. Marounek, E. Skřivanová, A. Baldi and C. Giromini</i>	287
15:00	The effect of hydrolysed yeast on production performance and gastrointestinal health in broilers <i>N. Irshad, V. Perricone, S. Sandrini, C. Lecchi, P. De Faria Lainetti, A. Agazzi and G. Savoini</i>	287
15:15	Yoghurt acid whey effects on broiler performance, meat oxidative status and caecal barrier integrity <i>V.V. Paraskeuas, G. Papadomichelakis, A. Pappas, P. Simitzis, E.C. Anagnostopoulos, I.P. Brouklogiannis, E. Griela, I. Palamidi, G. Theodorou, I. Politis and K.C. Mountzouris</i>	288
15:30	The effect of <i>Citrus unshiu</i> peel on growth performance, digestibility and immunity in weaning pig <i>A.S. Sureshbabu, A.K. Adhimoalam and T.M. Min</i>	288
15:45	Coffee break	
16:15	The effect of replacing grains with bakery by-products on performance and pigs' diet preference <i>F. Veldkamp, H.M. Vermeer, J. Kater, A. Ten Berge, J.M.J. Rebel and I.C. De Jong</i>	289
16:30	Replacing hexane by 2-methyloxolane for defatting soybean meal does not impair dairy cow performance <i>V. Menoury, A. Ferlay, L. Jacques, V. Rapinel and P. Nozière</i>	289
16:45	<i>In vitro</i> rumen fermentation traits of <i>Mentha piperita</i> , and products of oil extraction <i>S. Massaro, J. Andersen, G. Secchi, D. Giannuzzi, S. Schiavon, E. Franciosi and F. Tagliapietra</i>	290

17:00	<i>In vitro</i> rumen fermentation of mushroom-pretreated <i>Acacia mellifera</i> simulating ruminant digestion C. Rothmann, E.D. Cason and P.D. Vermeulen	290
17:15	Valorisation of atypical land in cattle production systems in search of self-sufficiency D. Starling, A. Farruggia and T. Puech	291
17:30	Growth of black belly ewe lambs ingesting non-conventional feeds in the form of complete feed blocks D. Barde, E. Traore, R. Arquet, N. Minatchy and H. Archimede	291

Poster Session 16

Book of Abstracts page

16.13	Diet effect of <i>Hermetia illucens</i> on proximate and fatty acid composition of broiler meat R. Berrocal, E. Molinero, S. Rueda, M.M. Campo and L. Mur	292
16.14	Antioxidant and rumen microbiota shift of Holstein cows by aquatic plant silage in Tibetan plateau B. Li, X. Huang, X. Yang and Y. Wang	292
16.15	Feeding olive cake alters the mRNA of SREBF1 in adipose tissue of cows M.C. Neofytou, D. Miltiadou, E. Sfakianaki, S. Symeou, D. Sparaggis, A.L. Hager-Theodorides and O. Tzamaloukas	293
16.16	Improving gut functions and egg nutrition with stevia Residue in laying hens M.X. Tang, Y.L. W., C. Y., C. P., H.G. L., Y. L., Y.D. C., W. L., X. X. and X.F. K.	293
16.17	<i>In vitro</i> evaluation of olive stones and sorghum used as forage in ruminant diets N. Kellali, N. Merino, E. Mata-Nicolás, I. Mateos, C. Saro, N. Lakhdara and M.J. Ranilla	294
16.18	Preservation of agro-industrial co-products as silage for ruminant feed K. Paulos, C. Costa, J.M.S. Costa, L. Cachucho, P.V. Portugal, J. Santos-Silva, F. Lidon, M.R. Marques, E. Jerónimo and M.T.P. Dentinho	294
16.19	Combination of organic acid and heat treatment decreased ruminal protein degradation in Soybean meal D.K. Yoo, S.W. Jeong and J.K. Seo	295
16.20	Bakery by-products in herbage-based diets for dairy cows: effects on milk yield and reticular pH A.-M. Reiche, M. Tretola, J. Eichinger, A.-L. Hütten, A. Münger, L. Eggerschwiler, L. Pinotti and F. Dohme-Meier	295
16.21	Evaluation of legumes for fermentability and protein fractions using <i>in vitro</i> rumen fermentation B.Z. Tunkala, K. Digiacomo, P.S. Alvarez Hess, F.R. Dunshea and B.J. Leury	296
16.22	Dehydration temperature- effect on physicochemical and nutritional characteristics of byproducts M. Alves, K. Paulos, C. Costa, D. Gonçalves, T. Orvalho, J.M.S. Costa, L. Cachucho, J. Santos-Silva, E. Jerónimo and M.T.P. Dentinho	296
16.23	Bacterial ecology and silage quality improvement upon treatment with microbial inoculants I. Nikodinoska, M. Franco, M. Rinne and C.A. Moran	297
16.24	Growth performance, carcass and meat quality of pigs fed <i>Chlorella vulgaris</i> supplemented diets J.M. Almeida, M. Parreiras, R. Varino, A. Sequeira, R.J.B. Bessa and O. Moreira	297
16.25	Inclusion of slow-release ammonia-treated barley in concentrates – feed intake and milk production K.S. Eikanger, M. Eknæs, I.J. Karlengen, J.K. Sommerseth, I. Schei and A. Kidane	298
16.26	Reducing aggression in finishing pigs through short application liquid calming herbal blend C. Nicolás-Jorrillo, D. Carrión, D. Escribano, A. Brun and E. Jiménez-Moreno	298
16.27	Evaluating fermentative profile in corn silage using chemical and biological additives C. Mastroeni, S. Van Kuijk, F. Ghilardelli, S. Sigolo, E. Fiorbelli and A. Gallo	299
16.28	Effect of <i>Chlorella vulgaris</i> incorporation in pig diets on pork chemical composition and fatty acids J.M. Almeida, A.P. Portugal, R.J.B. Bessa and O. Moreira	299

16.29	<i>Bacillus</i> fermentation products of hog hair waste serve as potential animal feed additives <i>W.J. Chen, K.C. Chang, Z.J. Zhuang, Y.H. Cheng and Y.H. Yu</i>	300
16.30	Effect of coffee grounds on digestibility, ruminal fermentation, and microbial protein synthesis <i>M. Medjadbi, I. Goiri, R. Atxaerandio, S. Charef, C. Michelet, J. Ibarruri, B. Iñarra, D. San Martin and A. García-Rodríguez</i>	300
16.31	Environmental impact of former food estimated through life cycle assessment <i>M.G.D. Azzena, A. Luciano, L. Pinotti and A.S. Atzori</i>	301
16.32	Effect of coffee grounds on productive performance, milk fatty acid profile and methane production <i>M. Medjadbi, I. Goiri, R. Atxaerandio, S. Charef, C. Michelet, J. Ibarruri, B. Iñarra, D. San Martin and A. García-Rodríguez</i>	301
16.33	Effect of including fresh pears as feedstuff in lactating ewes' diet on the ewes' milk curd strength <i>I. Caro, J. Mateo, S. Kasaiyan, N. Merino, E. Mata-Nicolás, I. Mateos, C. Saro, A. Martín, F.J. Giráldez and M.J. Ranilla</i>	302
16.34	Upcycling of Citrus and Vinification by-products' bioactive compounds for broiler diets <i>A. Mavrommatis and E. Tsiplakou</i>	302

Session 17.

Climate care dairy farming: follow up – Part 2

Room: Bellecour 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Edouard / Becciolini

Theatre Session 17	Book of Abstracts page
14:00 Simplified method developed for estimating the on-farm EFGHG and NH ₃ – presentation & results <i>X. Vergé, P. Robin, V. Becciolini, A. Cieślak, N. Edouard, L. Fehmer, P. Galama, P. Hargreaves, V. Juškieienė, G. Kadžiene, A.-S. Lissy, D. Ruska and M. Szumacher</i>	303
14:30 Simulation of three farming strategies on ammonia and GHG emissions and economics <i>P. Galama and H. Pishgarkomileh</i>	303
14:45 Exploring the effect of dairy cow replacement decisions on feed efficiency and sustainability <i>A. De Vries</i>	304
15:00 Practical monitoring of individual methane production rates in dairy cows: an alternative <i>C.M. Levraut, J.T. Eekelder, P.W.G. Koerkamp, C.F.W. Peeters, J.P.M. Ploegaert and N.W.M. Ogink</i>	304
15:30 Air filtering as alternative approach to combat emissions from cattle facilities <i>A. Kuipers, P. Galama, R. Maasdam, S. Spoelstra and P. Groot Koerkamp</i>	305
15:45 Coffee break	
16:15 UAV-based approaches for gaseous emissions assessment in cattle farming <i>V. Becciolini, A. Mattia, M. Merlini, G. Rossi, F. Squillace, G. Coletti, U. Rossi and M. Barbari</i>	305
16:30 Reducing N leaching by adapting N application timing and quantities to weather and grass growth <i>L. Bonnard, E. Ruelle, M. O'Donovan, M. Murphy and L. Delaby</i>	306
16:45 Reducing greenhouse gases in dairy cattle farming through innovative technologies <i>A. Svitojus and E. Gedgudas</i>	306
17:00 Annual quantification of GHG and NH ₃ emissions coming from compost-bedded pack housing systems <i>E. Fuertes, G. De La Fuente, J. Balcells and R. Seradj</i>	307
17:15 A study of the building-integrated photovoltaic cattle houses application scenario in China <i>Q. Wang, X. Du and Z. Shi</i>	307
17:30 Effect of manure management and environmental temperature on microbial communities in dairy manure <i>E. Fuertes, R. Seradj, J. Balcells and G. De La Fuente</i>	308

- 17:12 Simultaneous comparison of 5 methods to quantify enteric methane emitted by lactating dairy cows 308
A. Vanlierde, F. Dehareng, O. Christophe and E. Froidmont

Session 18.

Carcass grading for quality and efficiency – underpinning future sustainability of beef and lamb

Room: Gratte Ciel 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Pethick / Neveu

Theatre Session 18

Book of Abstracts page

- 14:00 Meeting consumer expectations: a 3G global beef eating quality predictive model for Europe 309
A. Neveu, R. Polkinghorne, R. Watson, H. Cuthbertson and J. Wierzbicki
- 14:15 Development of a carcass grading system for South African beef 309
M.S. Faulhaber, P.E. Strydom and N. Hall
- 14:30 French consumer evaluation of eating quality of Limousin beef 310
M. Kombolo, J. Liu, I. Legrand, F. Noel, P. Faure, L. Thoumy, D. Pethick and J.-F. Hocquette
- 14:45 BeefQ – testing a beef eating quality prediction system for Wales and England 310
P.K. Nicholas-Davies, R. Polkinghorne, A. Neveu, H. Cuthbertson and T. Rowe
- 15:00 Assessment of untrained consumers on eating quality in Zebu and crossbred cattle at aging times 311
A. Barro, M. Coutinho, G. Rovadoscki, A.M. Bridi and J.F. Hocquette
- 15:15 Loin residual glycogen and free glucose do not affect Australian lamb loin eating quality 311
S.M. Moyes, D.W. Pethick, G.E. Gardner and L. Pannier
- 15:30 Combining eating quality and individual cut tracking to maximise value and decrease waste in beef 312
H. Cuthbertson, R. Polkinghorne and A. Neveu
- 15:45 Coffee break
- 16:15 Changing the Australian trading language for beef and lamb to adapt to new measurement technologies 312
G.E. Gardner, S. Stewart, P. McGilchrist, C. Steele, H. Calnan, S. Connaughton, K. Mata and R. Apps
- 16:30 The precision and accuracy of the Q-FOM grading camera predicting rib eye traits in beef carcasses 313
S.M. Stewart, M. Christensen, H. Toft, T. Lauridsen and R. O'reilly
- 16:45 Predicting IMF% and visual marbling scores on beef portion steaks with a Marel vision scanner system 313
L. Pannier, T.M. Van De Weijer, F.T.H.J. Van Der Steen, R. Kranenborg and G.E. Gardner
- 17:00 Improved analysis of dual energy x-ray absorptiometry images enhances lamb eating quality prediction 314
F. Anderson, L. Pannier, C. Payne, S. Connaughton, A. Williams and G.E. Gardner
- 17:15 Aligning upper and lower commercial beef DEXA images to predict CT composition 314
H.B. Calnan, A. Williams and G.E. Gardner
- 17:30 Calibration of chain-speed DXA units using synthetic phantom blocks in two Australian lamb abattoirs 315
S.L. Connaughton, F. Anderson, A. Williams and G.E. Gardner
- 17:45 Objective carcass measurement from commercial supply chains contributing to genetic improvement 315
D.J. Brown, R. Alexandri, S.F. Walkom, D.W. Pethick, P. McGilchrist, S. Stewart, W.S. Pitchford and G.E. Gardner

Poster Session 18		Book of Abstracts page
18.15	Potential of deep learning video image analysis for automated SEUROP-classification <i>T. Rombouts, M. Seynaeve and S. De Smet</i>	316
18.16	Hand-held NIR device predicting chemical intramuscular fat% in pork <i>M.T. Corlett, F. Anderson and G.E. Gardner</i>	316
18.17	An optimisation model for operational planning in lamb supply chains <i>G. Wang, F.L. Preston, C. Smith, D. Flanigan, S.M. Miller, W.S. Pitchford and D. Meehan</i>	317
18.18	Predicting P8 fat depth in hot beef carcasses using a handheld microwave system <i>J. Marimuthu, R.K. Abraham and G.E. Gardner</i>	317
18.19	Meat@ppli, a smartphone application to predict fat content of beef <i>J. Normand, B. Meunier, M. Bonnet and B. Albouy-Kissi</i>	318
18.20	Computed tomography vs chemical composition for determination of Australian lamb carcase composition <i>K. Mata, G. Gardner and F. Anderson</i>	318
18.21	Assessing dual-energy X-ray absorptiometry prediction of intramuscular fat content in beef <i>C.L.N. Nunes, R.S.R. Vilela, E.B. Schultz, M.I. Hannas, C.M. Veloso, M.M. Ladeira and M.L. Chizzotti</i>	319
18.22	In-abattoir 3D image parameters of beef carcasses for predicting carcass classification and weight <i>H. Nisbet, N. Lambe, G. Miller, A. Doeschl-Wilson, D. Barclay and C.A. Duthie</i>	319
18.23	Prediction of liveweight from linear conformation traits in beef cattle <i>M. Meister, L. Speiser and A. Burren</i>	320
18.24	Beef marbling assessment by accredited graders and a hand-held camera device <i>M. Kombolo-Ngah, N.S.R. Mendes, A. Neveu, A. Barro, M. Christensen and J.F. Hocquette</i>	320
18.25	Beef on dairy – meat quality and prediction of intramuscular fat on the slaughter line <i>F.F. Drachmann and M. Therkildsen</i>	321
18.26	Pig carcass and cuts lean meat content determined by X-ray computed tomography <i>M. Font-I-Furnols, A. Brun and M. Gispert</i>	321
18.27	Relationships between ultimate pH, weight, conformation and fatness of carcasses <i>N. Silva Rodrigues Mendes, R. Rodrigues Silva, T. Ferreira De Oliveira, P.F. Rivet, M.P. Ellies-Oury, S. Chriki and J.F. Hocquette</i>	322
18.28	Elite Dairy Beef – a pathway for male dairy calves into the premium beef market <i>H. Cuthbertson, R. Polkinghorne, A. Neveu, T. Maguire, O. Catalan and R. Law</i>	322

Session 19.

Advances in nutritional modelling and feeding systems (in memory of Daniel Sauvant)

Room: Bellecour 3

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Baumont / Cannas

Theatre Session 19		Book of Abstracts page
14:00	The contribution of Daniel Sauvant to modelling in animal science <i>J. Van Milgen and P. Faverdin</i>	323

14:15	Systemic modelling of nutrient partitioning: from the seed sown by D. Sauvant to future prospects	323
invited	<i>L. Puillet</i>	
14:45	Mechanistic model of the dynamics of body retention and utilization of phosphorus and calcium in sow	324
	<i>J. Heurtault, P. Schlegel and M.P. Létourneau-Montminy</i>	
15:00	Modelling the digestive utilization of calcium and phosphorus in laying hens	324
	<i>F. Hervo, B. Méda, A. Narcy and M.-P. Létourneau-Montminy</i>	
15:15	A dynamic mechanistic model to forecast the oscillatory feeding behaviour of lactating dairy cows	325
	<i>E. Fiorbelli, A.S. Atzori, A.T. Büşra, L. Tedeschi and A. Gallo</i>	
15:30	A dynamic <i>in silico</i> model of rumen microbial fermentation and methane production	325
	<i>R. Muñoz-Tamayo, S. Ahvenjärvi, A.R. Bayat and I. Tapio</i>	

15:45 Coffee break

16:15	Future directions in ruminant feeding systems: opportunities and challenges for sustainability	326
invited	<i>L.O. Tedeschi</i>	
16:45	Meta-analysis in animal science: a valuable tool to generate new knowledge from previous experiments	326
	<i>M.P. Létourneau Montminy, C. Loncke, P. Schmidely, M. Boval, J.B. Daniel and D. Sauvant</i>	
17:00	Global sensitivity analysis of INRAtion®V5 for dairy cows: Sobol' indices	327
	<i>S. Jeon, S. Lemosquet, T. Senga Kiese and P. Nozière</i>	
17:15	Effects of housing or feeding practice in dairy goats estimated by the INRAtion®V5 feeding system	327
	<i>S. Giger-Reverdin, V. Berthelot and D. Sauvant</i>	
17:30	Dynamic models to inform precision supplementation of heifers grazing dormant native grasslands	328
	<i>H.M. Menendez Iii, J.R. Brennan, A.K. Dagel and K. Olson</i>	
17:45	Comparison of measured enteric methane emission with model calculations of commercial dairy diets	328
	<i>L. Koning and L.B. Šebek</i>	

Poster Session 19

Book of Abstracts page

19.13	Optim'Al can optimize dairy cow rations on economic cost and protein autonomy with INRA 2018 system	329
	<i>P. Chapoutot, G. Tran, V. Heuze and A. Berchoux</i>	
19.14	Modelling the dynamics of dairy cattle response to heat stress using system dynamics methodology	329
	<i>R. Cresci, B. Atamer Balkan, L.O. Tedeschi and A.S. Atzori</i>	
19.15	Volatolomics for developing non-invasive biomarkers of ruminal function and health in dairy cows	330
	<i>E. Jorge-Smeding, C. Martin, L. Volmerange, E. Rispal, M. Bouchon, Y. Rochette, N. Salah, F. Violleau and M. Silberberg</i>	
19.16	Estimation of total urinary nitrogen excretion in fattening beef cattle from urinary spot samples	330
	<i>C. Garcia-Vazquez, P. Nozière, L. Salis, R. Bellagi, J. David and G. Cantalapiedra-Hijar</i>	
19.17	Advancing mathematical modelling for equines	331
	<i>E.M. Leishman, C. Cargo-Froom, P. Darani, S. Cieslar and J.L. Ellis</i>	
19.18	Predicting equine voluntary forage intake using meta-analysis	331
	<i>E.M. Leishman, M. Sahar, P. Darani, S. Cieslar and J.L. Ellis</i>	
19.19	Score using indicators of reticulo-rumen pH kinetics to characterize subacute ruminal acidosis	332
	<i>C. Villot, K. Biard, C. Martin, A. Boudon and M. Silberberg</i>	
19.20	The INRA mechanistic beef growth model captures feed efficiency ranking in Charolais bulls	332
	<i>G. Cantalapiedra-Hijar and S. Lerch</i>	

19.21	A framework for predicting the environmentally attainable intake of dairy cows <i>J.F. Ramirez-Agudelo, L. Puillet and N.C. Friggens</i>	333
19.22	An integrated tool to apply the INRA2018 feeding system in ruminant rationing: INRAtion®V5 <i>P. Noziere, J. Agabriel, R. Baumont, P. Chapoutot, L. Delaby, R. Delagarde, A. De La Torre, P. Faverdin, S. Giger-Reverdin, P. Hassoun, A. Lamadon, G. Maxin, D. Sauvant, B. Sepchat, P. Souvignet and S. Dutot</i>	333
19.23	Milk yield and mammary metabolism in response to increasing amino acids and protein supplies <i>S. Lemosquet, C. Loncke, J.C. Anger, A. Hamon, J. Guinard-Flament and M.N. Haque</i>	334
19.24	Ruminal fatty acid biohydrogenation pathways in lambs and kids fed a high concentrate diet <i>V. Berthelot, Y.D. Yekoye and L.P. Broudiscou</i>	334
19.25	Can high fat concentrates offset the high methane production caused by high forage diets? <i>N. Ayanfe, S. Ahvenjärvi, A. Sairanen and A.R. Bayat</i>	335
19.26	Updates of the expenditures and requirements for growing dairy goats <i>S. Giger-Reverdin and D. Sauvant</i>	335
19.27	Feed efficiency relates to the ability of supporting lactation in dairy cows facing feed restriction <i>L. Barreto-Mendes, J. Pires, A. De La Torre, I. Ortigues-Marty, I. Cassar-Malek and F. Blanc</i>	336
19.28	Effects of rumen protected calcium gluconate on hindgut dynamics and nutrient partitioning <i>M. Hall and J.G.H.E. Bergman</i>	336

Session 20. Early career competition ‘Innovative approaches to pig and poultry production’, supported by Wageningen Academic Publishers

Room: Gratte Ciel 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Vigors / Nilsson

Theatre Session 20	Book of Abstracts page
14:00 The impact of observation frequency and duration, on resilience traits in pigs <i>W. Gorssen, C. Winters, R. Meyermans, L. Chapard, K. Hooyberghs, S. Janssens, A. Huisman, K. Peeters, H. Mulder and N. Buys</i>	337
14:15 Are tail biting and tail necrosis really only a problem in the domestic pig? <i>I. Czycholl, K. Büttner, W. Baumgärtner, C. Puff and J. Krieter</i>	337
14:30 Innovative rearing strategies for heavy pigs: weight and chemical composition of dry-cured hams <i>A. Toscano, D. Giannuzzi, I.H. Malgwi, V. Halas, P. Carnier, L. Gallo and S. Schiavon</i>	338
14:45 Comparison of different non-linear growth models on post-weaning growth of pigs <i>K.O. Kareem-Ibrahim, O.T.F. Abanikanda and O.A. Folorunsho</i>	338
15:00 Effect of glutamine and/or milk supplementation post-weaning on pig growth and intestinal structure <i>E.A. Arnaud, G.E. Gardiner, S.R. Vasa, J.V. O’Doherty, T. Sweeney and P.G. Lawlor</i>	339
15:15 Effect of lysine level in finisher diets on performance in crossbreds from two terminal sire lines <i>S. Goethals, K. Hooyberghs, N. Buys, S. Janssens and S. Millet</i>	339
15:30 Birth weight effects on performance and gut health status of weaned piglets <i>C. Negrini, F. Correa, D. Luise, S. Viridis, M. Mele, G. Conte, M. Mazzoni and P. Trevisi</i>	340
15:45 Coffee break	
16:15 Effects of sugary and salty ex-food in pigs’ diets on growth performance and pork sensory traits <i>S. Mazzoleni, M. Tretola, C.E.M. Bernardi, P. Lin, P. Silacci, G. Bee and L. Pinotti</i>	340

16:30	Performances, milk quality, and piglet growth in lactating sows fed former food products <i>P. Lin, G. Bee, S. Neuenschwander and M. Girard</i>	341
16:45	Effect of arginine supplementation on the productive performance of gestating sows: a meta-analysis <i>S. Virdis, D. Luise, P. Bosi and P. Trevisi</i>	341
17:00	Are pre-weaning piglet and sow parameters a proxy for uniformity and daily gain? <i>K. Hooyberghs, S. Goethals, W. Gorssen, L. Chapard, R. Meyermans, B. Chakkingal Bhaskaran, S. Millet, S. Janssens and N. Buys</i>	342
17:15	Dietary polyphenol extracts improve the performance of broilers challenged with necrotic enteritis <i>S.A. Salami, L. Chew, B.S. Lumpkins and B. Tas</i>	342
17:30	Effects of <i>Bacillus subtilis</i> DSM 32315 or <i>Bacillus velezensis</i> CECT 5940 on chicken PBMCs <i>F. Larsberg, M. Sprechert, D. Hesse, G. Loh, G.A. Brockmann and S. Kreuzer-Redmer</i>	343
17:45	Effect of creatine monohydrate <i>in ovo</i> feeding on progeny performance of young breeder flocks <i>C.A. Firman, V.K. Inhuber, D.J. Cadogan, W.H.E.J. Van Wettere and R.E.A. Forder</i>	343

Poster Session 20

Book of Abstracts page

20:15	Statistical modelling and estimation of pig body weight based on its linear body measurements <i>O.T.F. Abanikanda, K.O. Kareem-Ibrahim and Z.A. Ahmad</i>	344
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Session 21.

Insects as feed: sustainability, legislation and safety

Room: Tête D'or 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Veldkamp / Barbosa

Theatre Session 21

Book of Abstracts page

14:00	The potential of insects in sustainable agri-food systems <i>invited K.B. Barragán-Fonseca</i>	344
14:30	Sustainability potential of insect production systems <i>S. Smetana, A. Bhatia, U. Batta, N. Mouhrim and A. Tonda</i>	345
14:45	Maximizing sustainability in insect production: a multi-objective optimization approach <i>A. Anita, N. Mouhrim, A. Green, D. Peguero, A. Mathys, A. Tonda and S. Smetana</i>	345
15:00	Lowering impacts of chicken meat through <i>H. illucens</i> larvae supplementation in the feed? <i>D. Ristic, S. Kechovska, C.L. Coudron, A. Schiavone, J. Claeys, F. Gai and S. Smetana</i>	346
15:15	Use of locusts as feed and food: turning threats into opportunities <i>H.P.S. Makkar, V. Heuzé and G. Tran</i>	346
15:30	<i>Chrysomya chloropyga</i> in broiler feed: valorising abattoir waste for sustainable feed <i>E. Pieterse, E.Y. Gleeson and L.C. Hoffman</i>	347
15:45	Coffee break	
16:15	Waste side story: a success role for mealworms <i>C. Ricciardi, L. D'Orleans, C. Oundjian, M. Leheup, T. Lefebvre and F. Peyrichou</i>	347
16:30	Ammonia emissions of <i>Hermetia illucens</i> larvae grown on different diets <i>C.L. Coudron, S. Berrens, M. Van Peer, J. Claeys and D. Deruytter</i>	348
16:45	Chemical & microbiological safety of insect rearing on yet to be legally authorised residual streams <i>E.F. Hoek- Van Den Hil, A.F.G. Antonis, Y. Hoffmans, K. Van Zadelhoff, R. Deurenberg, O.L.M. Haenen, M.E. Bruins, J.W. Van Groenestijn, A. Borghuis, F. Schaafstra, T. Veldkamp, P. Van Wikselaar and M. Appel</i>	348

17:00	Growth and chemical composition of insects reared on 'yet to be legally authorised' residual streams <i>S. Naser El Deen, P. Van Wikselaar, A. Rezaei Far, I. Fodor, E.F. Hoek - Van Den Hil, Y. Hoffmans, M.E. Bruins, J.W. Van Groenestijn, A. Borghuis, F. Schaafstra and T. Veldkamp</i>	349
17:15	Safety and production performance of insects reared on catering waste <i>E.F. Hoek- Van Den Hil, S. Naser El Deen, K. Van Rozen, P. Van Wikselaar, H.J.H. Elissen, R.Y. Van Der Weide, A. Rezaei Far, I. Fodor, N. Meijer and T. Veldkamp</i>	349
17:30	Mycotoxin accumulation and metabolization by insects: an overview <i>K.C.W. Van Dongen, K. Niermans, E.F. Hoek-Van Den Hill, J.J.A. Van Loon and H.J. Van Der Fels-Klerx</i>	350
17:45	Manure as a substrate for insect rearing: ecological progress or health risk? <i>A. Anselmo, A. Cordonnier, L. Plasman, J. Maljean, C. Aerts, D. Evrard, A. Marien, E. Janssen, V. Ninane, S. Gofflot, P. Veys, M.-C. Lecrenier, V. Baeten and D. Michéz</i>	350

Poster Session 21

Book of Abstracts page

21.14	Quality characteristics of black soldier fly produced by different substrates <i>A.R. Hosseindoust, S. Ha, J. Mun, H. Tajudeen, S. Park and J. Kim</i>	351
21.15	The value of organic fertilizer from <i>Hermetia illucens</i> frass in the sustainable agriculture <i>S. Kaczmarek and K. Dudek</i>	351
21.16	Effects of rearing substrates and processing methods on black soldier fly meal quality <i>S. Ha, A.R. Hosseindoust, Z. Khajehmiri, J. Mun, H. Tajudeen, S. Park and J. Kim</i>	352
21.17	The use of insect meals for broiler feeds with a lower environmental footprint <i>P. Chantzi, I. Giannenas, E. Bonos, E. Antonopoulou, C. Athanasiou, A. Grigoriadou, A. Tzora and I. Skoufos</i>	352
21.18	Diet mediated PUFA accumulation and $\omega 6$ - $\omega 3$ ratio improvement in mealworm larvae (<i>Tenebrio molitor</i>) <i>S. Yoon, C. Ricciardi, C. Oundjian, M. Leheup, T. Lefebvre and F. Peyrichou</i>	353
21.19	Agro-industry by-products for <i>Tenebrio molitor</i> rearing to generate a new aquaculture feed ingredient <i>I. Vieira, D. Murta and M.V. Santos</i>	353
21.20	Transfer of veterinary drug residues from substrate to black soldier fly larvae and frass <i>K.C.W. Van Dongen, E. De Lange, L. Van Asseldonk and H.J. Van Der Fels-Klerx</i>	354

Session 22. Environmental stress: mitigating the adverse effects on animal physiology

Room: Tête D'or 1

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Zachut

Theatre Session 22

Book of Abstracts page

14:00	Drinking heated water improves the growth performance and rumen microbiota of beef cattle in winter <i>T. He, S. Long, X. Wang, T. Liu and Z. Chen</i>	354
14:15	Elevated temperature induces transcriptional and epigenetic changes in the lungs of chickens <i>D. Schokker, J. De Vos, P.B. Stege, O. Madsen, H.J. Wijnen, S.K. Kar and J.M.J. Rebel</i>	355
14:30	Supplementing heat stressed cows with plant extract affects performance welfare and oxidative stress <i>J.R. Daddam, D. Daniel, I. Pelech, G. Kra, H. Kamer, U. Moallem, Y. Lavon and M. Zachut</i>	355
14:45	Immunomodulatory effect of exosomes from the plasma of heat-stressed cows on bovine monocytes <i>L.G. De Matos, S. Dimauro, M. Falco, J.F.S. Filipe, C. Zamboni, F. Cecilian, V. Martini, A. Agazzi, A. Scarafoni, G.C. Heinzl, G. Sala, A. Boccardo, A. Maggolino, P. Depalo and C. Lecchi</i>	356
15:00	Late gestation heat stress: programming effects on three generations <i>J. Laporta</i>	356

invited

15:45 Coffee break

16:15	Temporal patterns of environmental heat stress in Holstein heifers: association with age at calving <i>V. Tsiamadis, G.E. Valergakis, A. Soufleri, G. Arsenos, G. Banos and X. Karamanlis</i>	357
16:30	Effect of stocking density on heat stress in fattening pigs <i>L. De Prekel, D. Maes, A. Van Den Broeke and M. Aluwé</i>	357
16:45	Chromium yeast alleviates heat stress in Holstein mid-lactation dairy cows <i>F. Ma, Y. Wo, Q. Shan and P. Sun</i>	358
17:00	May anti-oxidants reduce glyphosate-based herbicides adverse effects on chicken embryo-development? <i>M. Fréville, A. Estienne, C. Ramé, C. Rat, J. Delaveau, P. Froment and J. Dupont</i>	358
17:15	Bromide as a thyroid hormone disruptor <i>H.L. Lucht and N.H. Casey</i>	359
17:30	The impact of THI on milk characteristics, productivity, and metabolism in lactating dairy cows <i>G. Meli, V. Fumo, G. Savoini and G. Invernizzi</i>	359

Poster Session 22

Book of Abstracts page

20.12	A selected phytogetic solution improves performance and thermal tolerance of heat stressed pigs <i>A. Morales, P. Sakkas, M. Soto, N. Arce, N. Quilichini and M. Cervantes</i>	360
20.13	Effects of Met, Lys and His supplementation on the metabolic response to heat stress in dairy cows <i>Á. Kenéz, E. Jorge-Smeding, Y.H. Leung, A. Ruiz-González and D.E. Rico</i>	360
20.14	Evaluation of earwax and hair cortisol level in relation to environmental stressors in Hanwoo cattle <i>M. Ataallahi, G.W. Park, E. Nugrahaeningtyas, M. Dehghani, J.S. Lee and K.H. Park</i>	361
20.15	Effects of energy levels and heat stress on growth performance and blood metabolites in Hanwoo calve <i>Y.H. Jo, J.G. Nejad, J.S. Lee, K.K. Park, E.J. Kim and H.G. Lee</i>	361
20.16	The effect of a summer diet on heat stress in lactating sows and their piglets <i>A. Van Den Broeke, L. De Prekel, D. Maes and M. Aluwé</i>	362
20.17	Physiological implication of omega-3 fatty acid supplementation on animal welfare in laying hens <i>S.K. Kang</i>	362
20.18	The effect of different bedding materials on dust and toxic gas concentrations in calf housing <i>D. Witkowska, A. Ponieważ and D. Murawska</i>	363
20.19	Mitigate density stress by using a proprietary orange essential oil <i>A.N. Nalovic, A.A. Auvray and J.G. Gabarrou</i>	363
20.20	The effects of heating drinking water or calcium propionate on fattening beef cattle in winter <i>T. He, Z. Chen and S. Long</i>	364
20.21	Water quality in dairy cattle farms: impact on animal production, reproduction and health <i>V. Resende</i>	364
20.22	Study on the effect of improving the pig gut microbiota of <i>Rhodobacter sphaeroides</i> <i>D. Shin, J. Park, S. Son, H. Lee and J. Kim</i>	365
20.23	Algae-based beta-glucan mitigates the adverse effects of heat stress in lactating sows <i>J. Mun, A. Hosseindoust, S. Ha, S. Park, H. Tajudeen, S. Oh and J. Kim</i>	365
20.24	Effect of dietary mineral level and creep feeding on sows performance under high ambient temperature <i>H. Tajudeen, A. Hosseindoust, J.Y. Mun, S. Ha, S. Park, S. Yoon and J. Kim</i>	366

Room: Gratte Ciel 3

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Minozzi / Trocino

Theatre Session 23		Book of Abstracts page
14:00	Pre-weaned dairy calf welfare: from the 'End the Cage Age' movement to the EFSA mandate <i>M. Brscic</i>	366
14:30	Impact of individual pens removal on veal calves' behaviour <i>D. Bastien and V. Lefoul</i>	367
14:45	Quarter level milk yield in dairy cows before and after separation in a cow-calf contact system <i>S. Ferneborg and S. Agenäs</i>	367
15:00	Two different training protocols to encourage dam-reared calves to drink supplemental milk <i>J. Sørby, S. Ferneborg, S.G. Kischel and J.F. Johnsen</i>	368
15:15	Effects of automatic TMR feeding system on the health status of finishing bulls and heifers <i>O. Martinić, L. Magrin, P. Prevedello, G. Fabbri, G. Cozzi and F. Gottardo</i>	368
15:30	Associations between feed push-up frequency, feeding behaviour and milk yield in dairy buffaloes <i>G. Esposito, E. Raffrenato, G. Bosoni, F. Caruso and F. Righi</i>	369
15:45 Coffee break		
16:15	Comparing dairy cow welfare in loose-housing and in tie-stall systems using animal-based indicators <i>V. Lorenzi, L. Bertocchi, C. Montagnin and F. Fusi</i>	369
16:30	Time-controlled hay racks horses: what effect on behaviour? <i>M. Roig-Pons and S. Briefer</i>	370
16:45	Exploring techniques to mitigate heat stress in feedlot lambs <i>P.G. Theron, T.S. Brand, S.W.P. Cloete and K. Dzama</i>	370
17:00	Management practices and welfare of dairy goats in Greece <i>G. Arsenos, S. Vouraki, V. Papanikolopoulou, L.V. Ekateriniadou and I. Sakaridis</i>	371
17:15	Risk factors for navigation ability of laying hens at housing in an aviary system <i>C. Ciarelli, F. Bordignon, G. Pillan, G. Xiccato and A. Trocino</i>	371
17:30	Busy birds – what do turkey hens use dust baths for? <i>K. Skiba, M. Kramer, P. Niewind, B. Spindler and N. Kemper</i>	372
17:45	Pre-slaughter fasting on stress response and meat quality in rainbow trout (<i>Oncorhynchus mykiss</i>) <i>A. De La Llave-Propín, A. Martínez Villalba, R. González Garoz, J. De La Fuente, C. Pérez, E. González De Chavarri, M.T. Díaz, A. Cabezas, M. Villarroel and R. Bermejo-Poza</i>	372
Poster Session 23		Book of Abstracts page
23.14	Effects of a new cooled cubicle waterbed on cow behaviour and lameness: a randomized control trial <i>O. Levrard, R. Guatteo, A. Lehébel, L. Bouglé, M. Tourillon, N. Brisseau and A. Relun</i>	373
23.15	Evaluation of milk and residual milk production of dairy Gyr cows <i>R.C. Castanheira, M.I. Paiva, K.T. De-Sousa, M.S.V. Salles, E.A. Silva and L. El Faro</i>	373
23.16	Environmental enrichment and tactile stimulation on the welfare of F1 Holstein × Gir calves <i>C.O. Miranda, A.E. Vercesi Filho, M.L.P. Lima, F.F. Simili, M.S.V. Salles, E.G. Ribeiro, J.A. Negrão and L.E.F. Zadra</i>	374

23.17	Heat stress indicators in dairy cattle breeding provided by automatic milking systems (AMS) <i>M.A. Leandro, J. Stock, J. Bennewitz and M.G.G. Chagunda</i>	374
23.18	Impact of floor type and group size on veal calves' behaviour <i>D. Bastien and V. Lefoul</i>	375

Session 24. **New traits and proxies from sensor technologies for breeding purposes**

Room: Roseraie 3

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Pocrnic / Lourenco

	Theatre Session 24	Book of Abstracts page
14:00	Heterogeneity of 3D cameras feed intake heritabilities in Holstein, Jersey and Nordic Red cows <i>C.I.V. Manzanilla-Pech, R.B. Stephansen and J. Lassen</i>	375
14:15	Genomic correlations of MIR-predicted and measured feed efficiency traits in Holstein Friesian <i>A. Seidel, C. Heuer, L.M. Dale, A. Werner, H. Spijkers and G. Thaller</i>	376
14:30	Heritability of dry matter intake in Norwegian Red with measures on feed intake in commercial herds <i>K.A. Bakke and B. Heringstad</i>	376
14:45	Assessing the potential of faecal NIR spectra for the prediction of feed efficiency in dairy cows <i>S. Ampuero Kragten, T. Haak, K.-H. Südekum and F. Schori</i>	377
15:00	Genetic parameters for potential auxiliary traits for lameness based on data from PLF technologies <i>K. Schodl, B. Fuerst-Waltl, F. Steininger, M. Suntinger, H. Schwarzenbacher, A. Köck, D4dairy Consortium and C. Egger-Danner</i>	377
15:15	Breeding for resilience based on rumination time data of Chinese Holstein heifers <i>W. Lou, R. Shi, B. Ducro, A. Van Der Linden, H.A. Mulder, S.J. Oosting and Y. Wang</i>	378
15:30	Validation of a high-throughput movable 3D device for the acquisition of the whole cattle body <i>A. Lebreton, C. Allain, L. Delattre, J. Loof, Y. Do and M. Bruyas</i>	378
15:45	Coffee break	
16:15	MIRS coupled with machine learning for the prediction of cow colostrum immunoglobulins concentration <i>A. Costa, A. Goi and M. De Marchi</i>	379
16:30	Extracting video-based phenotypes in a pig breeding programme <i>C. Coello, Ø. Nordbø, R. Sagevik, F. Cheikh, M. Ullah, K.H. Martinsen and E. Grindflek</i>	379
16:45	Impact of the social effect on feeding behaviour in pigs <i>P. Núñez, S. Gol, J. Reixach and N. Ibañez-Escriche</i>	380
17:00	Assessing lactating sow behaviour using sensor technology and machine learning <i>G. Dumas, L. Maignel, J.-G. Turgeon and P. Gagnon</i>	380
17:15	Relationships between sow activity over the days after farrowing and litter weight gain <i>O. Girardie, D. Laloë, M. Bonneau, Y. Billon, J. Bailly, I. David and L. Canario</i>	381
17:30	Multi-camera tracking of turkeys in large groups using instance segmentation <i>Z. Wang, P. Langenhuizen, B. Visser, H.P. Doekes, P. Bijma and P.H.N. De With</i>	381
17:45	Evaluation of tracking individual broilers using video data <i>J.E. Doornweerd, G. Kootstra, R.F. Veerkamp, B. De Klerk, M. Van Der Sluis, A.C. Bouwman and E.D. Ellen</i>	382

- 24:15 Genetic variation of new sheep traits measured by dual energy Xray absorptiometry 382
C.E. Payne, B. Paganoni, S.F. Walkom, G.E. Gardner and D.J. Brown

Session 25. Molecular measures of diversity and their role in monitoring and management of breeds

Room: Roseraie 2

Date: Monday 28 August 2023; 14:00 – 18:00

Chair: Danchin / Fernandez

- 14:00 Monitoring within-breed genetic variation at global level 383
invited *G. Leroy, R. Baumung, G. Mészáros, I. Curik, J.J. Windig, B. Rosen, Y.T. Utsunomiya, P. Burger, L. Coli, P. Boettcher, A. Stella, C. Looft and J. Soelkner*
- 14:30 Real-time monitoring of genetic diversity in animal populations: the RAGEMO project 383
C. Danchin, I. Palhière, B. Servin and G. Restoux
- 14:45 Evolution of the genomic relationship between a local breed and its mainstream sister breed 384
H. Wilmot, M.P.L. Calus and N. Gengler
- 15:00 Fine decomposition of inbreeding into the source of the co-ancestries 384
S. Antonios, S.T. Rodríguez-Ramilo, J.M. Astruc, L. Varona and Z.G. Vitezica
- 15:15 Predicting homozygosity-by-descent to manage inbreeding and diversity 385
N.S. Forneris and T. Druet
- 15:30 GWAS analyses for dairy traits in Cyprus sheep and goat breeds reveal important protein networks 385
G. Maimaris, A.N. Georgiou, A.C. Dimitriou and G. Hadjipavlou
- 15:45 Coffee break
- 16:15 A severely introgressed South China pig breed in urgent need of purification 386
L. Cao, T. Luan, T.H.E. Meuwissen, P. Berg, J. Yang and Z. Wu
- 16:30 Insights into ancient and recent inbreeding patterns in Alpine Grey cattle using ROH analysis 386
G. Gomez Proto, E. Mancin, B. Tuliozi, C. Sartori and R. Mantovani
- 16:45 Study of Bottleneck effect for conservation of Poonchi chicken from international borders of India a 387
M. Azad, D. Chakraborty, K. Kour, D. Kumar and P. Birwal
- 17:00 Up to date results from the ongoing *in situ* genetic management of the local breed Noire de Challans 387
R. Rouger, H. Deloison, M. Teissier, G. Restoux and S. Brard-Fudulea
- 17:15 An empirical approach to assess increase in homozygosity: the Gochu Asturcelta pig 388
K.D. Arias, J.P. Gutiérrez, I. Fernández, I. Álvarez and F. Goyache
- 17:30 Preliminary analysis of Nubian goats and their influence on Old English and Anglo-Nubian goats 388
S.A. Rahmatalla, D. Arends, G.B. Neumann, H. Abdel-Shafy, J. Conington, M. Reissmann, M.K. Nassar and G.A. Brockmann
- 17:45 Towards a flexible definition of core sets based on the haplotype diversity of German sheep 389
J. Geibel, C. Reimer, A. Weigend, Y. Shakya, H. Melbaum, K. Gerdes and S. Weigend
- 18:00 Use of genomic information for the determination of insemination doses per sire in a gene bank 389
C. Reimer, S. Weigend, T. Pook and J. Geibel

25.15	Is it possible to skip the SNP selection step for breed assignment? <i>H. Wilmot, T. Niehoff, H. Soyeurt, N. Gengler and M.P.L. Calus</i>	390
25.16	Copy number variation regions differing in segregation patterns spanned different sets of genes <i>K.D. Arias, J.P. Gutiérrez, I. Fernández, I. Álvarez and F. Goyache</i>	390
25.17	Genomic characterization as tool in the breed recognition process <i>C. Danchin and D. Duclos</i>	391
25.18	Homozygosity by descent in mice divergently selected for environmental birth weight variability <i>C. Ojeda-Marín, J.P. Gutiérrez, N. Formoso-Rafferty and I. Cervantes</i>	391
25.19	Inbreeding depression is associated with recent HBD segments in Belgian Blue beef cattle <i>M. Naji, J.L. Gualdron Duarte, N.S. Forneris and T. Druet</i>	392
25.20	Assessing the intrapopulation structure of Slovak Spotted cattle by genome-wide data <i>R. Kasarda, N. Moravčíková, J. Candrák, J. Prišťák and I. Pavlík</i>	392
25.21	Genomic selection has aided Nordic Jersey to decrease risks of inbreeding <i>S. Tenhunen, J.R. Thomasen, L.P. Sørensen, P. Berg and M. Kargo</i>	393
25.22	Management of local cattle breed diversity in Croatia: use of molecular and pedigree indicators <i>A. Ivanković, Z. Ivkić, G. Šubara, M. Pečina, J. Ramljak and M. Konjačić</i>	393
25.23	Genomic differences between the domesticated pig breed and its ancestor wild boar <i>N. Moravčíková, R. Kasarda, M. Hustinová, E. Krupa, Z. Krupová and E. Žádková</i>	394
25.24	Genetic polymorphism of kappa-casein in Serbian Holstein-Friesian cattle <i>M. Zorc, M. Šaran, L.J. Štrbac, D. Janković, P. Dovč and S. Trivunović</i>	394
25.25	Estimation of recent and ancestral inbreeding for X-chromosome in Old Kladrub horse <i>L. Vostry, M. Shihabi, J. Farkas, G. Kövér, H. Vostra-Vydrova, B. Hofmanova, I. Nagy and I. Curik</i>	395
25.26	Genetic diversity and population structure of a Peruvian nucleus cattle herd using SNP data <i>F.-A. Corredor, D. Figueroa, R. Estrada, W. Salazar, C. Quilcate, H. Vasquez, J. Gonzales, J. Maicelo, P. Medina and C. Arbizu</i>	395
25.27	Within-breed stratification for across-breed reference population <i>H. Wilmot, T. Druet, I. Hulsegge, N. Gengler and M.P.L. Calus</i>	396

Scientific programme

Tuesday 29 August 2023

Session 26.

EAAP Plenary Session

Room: Amphitheatre

Date: Tuesday 29 August 2023; 8:30 – 13:00

Chair: Casasús

Theatre Session 26	Book of Abstracts page
8:30 The livestock sector and research in animal science in France <i>invited</i> X. Fernandez, J.F. Hocquette and S. Ingrand	396
9:00 Solutions to achieve healthy and sustainable diets worldwide <i>invited</i> H. Guyomard, A. Forslund, A. Tibi, B. Schmitt, P. Debaeke and J.-L. Durand	397
9:30 Moving towards bold food systems resilience <i>invited</i> J. Fanzo	397
10:00 A social-ecological agenda for transforming land management toward sustainability <i>invited</i> T. Plieninger	398
10:30 Coffee break	
11:30 EAAP beyond Europe: establishing and using capacity to feed the world <i>invited</i> H. Sölkner	398

Session 27.

Breeding programs & strategies

Room: Prestige Gratte Ciel

Date: Tuesday 29 August 2023; 15:00 – 18.30

Chair: Egger-Danner / Martin

Theatre Session 27	Book of Abstracts page
15:00 Effect of genomic selection on allele frequencies of QTL associated to number of teats in pigs C.A. Sevillano, B. Harlizius, M.S. Lopes, M. Van Son and E.F. Knol	399
15:15 Management of genetic defects in breeding programs S.T. Rodríguez-Ramilo, I. Palhière, J. Raoul and J. Fernández	399
15:30 Genetic management of cryptorchidism and horn mutations in Manech tête Rousse dairy sheep breed J. Raoul, F. Fidelle, C. André, M. Ben Braiek, S. Fabre, A. Gouzenes, D. Buisson and I. Palhière	400
15:45 Strategies to improve selection compared to selection based on estimated breeding values T. Pook, T. Niehoff, Y. Wientjes, L. Zetouni, M. Schrauf and M. Calus	400
16:00 The validity of breeding goals R. Wellmann	401
16:15 Beyond scenarios-optimization of breeding program design using evolutionary algorithms (MoBPSopti) A. Hassanpour, J. Geibel and T. Pook	401
16:30 Ecobreed – what is the economically optimal longevity of a cow? S. Schlebusch	402

16:45 Coffee break

17:15	Differences in breast milk composition in rabbit lines divergently selected for intramuscular fat <i>P. Hernández, N. Ibáñez, I. Heddi, M. Martínez-Álvaro and A. Zubiri-Gaitán</i>	402
17:30	Combined genomic evaluation of Australian Merino and Dohne Merino sheep populations <i>M. Wicki, D.J. Brown, P.M. Gurman, J. Raoul, A. Legarra and A.A. Swan</i>	403
17:45	Effect of germplasm exchange strategies on genetic gain and diversity in dairy stud populations <i>E.A. Lozada-Soto, F. Tiezzi, J. Jiang, J.B. Cole, P.M. Vanraden, S. Toghiani and C. Maltecca</i>	403
18:00	Local livestock breeds in Flanders are confirmed to be 'at risk'! <i>S. Janssens, L. Chapard, R. Meyermans, W. Gorssen and N. Buys</i>	404
18:15	Probabilistic breeder's equation used for retrospective and prospective analyses <i>D. López-Carbonell, I. Pocrnic, G. Gorjanc and L. Varona</i>	404

Poster Session 27

Book of Abstracts page

27:13	Re-organising the Danish dairy cattle sector with alternative breeding goals and crossbreeding <i>J.B. Clasen, R.D. Kring, J.R. Thomasen and S. Østergaard</i>	405
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Session 28.

Breeding for improved animal health and welfare

Room: Foyer Amphitheatre Rhone

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Kargo / Tiezzi

Theatre Session 28

Book of Abstracts page

15:00	How to balance selection for litter size in pigs with survival, health and welfare <i>P.W. Knap, A. Huisman, C. Sørensen and E.F. Knol</i>	405
invited		
15:30	Selection for robustness and welfare in Iberian pig through birth weight uniformity as criterion <i>J.P. Gutiérrez, N. Formoso-Rafferty, F. Sánchez-Esquiliche, M. Muñoz, J.M. García-Casco and I. Cervantes</i>	406
15:45	Resilience parameters in fattening pigs are heritable and associated with tail biting and mortality <i>W. Gorssen, C. Winters, R. Meyermans, L. Chapard, K. Hooyberghs, J. Depuydt, S. Janssens, H. Mulder and N. Buys</i>	406
16:00	The impact of phenotyping, genotyping, and the boar's origin on the genetic gain of organic pigs <i>R.M. Zaalberg, J.B. Clasen, T.M. Villumsen, J. Jensen and T.T. Chu</i>	407
16:15	Genetic correlations between ostrich behavioural traits and slaughter traits <i>P.T. Muvhali, M. Bonato, A. Engelbrecht, I.A. Malecki and S.W.P. Cloete</i>	407
16:30	Genome-wide copy number variants associated with calving ease and retained placenta in Holstein cows <i>I.C. Hermisdorff, H.R. Oliveira, G.A. Oliveira Júnior, T.C.S. Chud, S.G. Narayana, C.M. Rochus, A.M. Butty, F. Malchiodi, P. Stothard, F. Miglior, C.F. Baes and F.S. Schenkel</i>	408

16:45 Coffee break

17:15	Indirect effects in infection transmission enhance genetic selection and other interventions <i>A.D. Hulst, P. Bijma and M.C.M. De Jong</i>	408
17:30	Optimizing dairy cattle breeding goals to improve production and udder health of crossbred cows <i>A. Bouquet, H.M. Nielsen, V. Milkevych, M. Kargo, J.R. Thomasen and M. Slagboom</i>	409
17:45	Genes and variants involved in resistance to paratuberculosis in Holstein and Normande cattle <i>V. Sorin, A. Boulling, A. Delafosse, M. Boussaha, C. Hozé, R. Guatteo, C. Fourichon, S. Fritz, D. Boichard and M.P. Sanchez</i>	409

18:00 A genome-wide association study for clinical mastitis in Italian Holstein 410
F. Galluzzo, G. Visentin, G. Mészáros, J.B.C.H.M. Van Kaam, R. Finocchiaro, M. Marusi and M. Cassandro

18:15 About the genetic connection between milk and health traits in dairy cows within functional regions 410
H. Schneider, J. Heise, A.-M. Krizanac, C. Falker-Gieske, J. Tetens, G. Thaller and J. Bennewitz

Poster Session 28

Book of Abstracts page

28.12 Frequency of genetic disorders in genomically tested females in the Netherlands 411
C. Schrooten and E. Mullaart

28.13 Genome regions and metabolic processes associated with tick resistance in beef cattle 411
P. Martin, T. Hüe, J. Mante, A. Lescane, D. Boichard and M. Naves

28.14 Innovative strategy using phenotypes and genetics to optimize partial sampling applied to boar taint 412
A. Markey, J. Wavreille, P. Mayeres, A.C. Huet, D. Duarte and N. Gengler

28.15 Genetic susceptibility determined by SNP2 in piglets challenged with F4-Enterotoxigenic *E. coli* 412
A. Middelkoop, H. Kettunen, X. Guan, J. Vuorenmaa, R. Tichelaar, M. Gambino, M.P. Rydal and F. Molist

28.16 Reference genes selection for RT-qPCR in chickens after in ovo synbiotic and choline administration 413
E. Grochowska, P. Guz, K. Stadnicka and M. Bednarczyk

28.17 Genetic parameters of coronet scores related to hoof disorders in Japanese dairy cattle 413
Y. Saito, A. Nishiura, T. Yamazaki, S. Yamaguchi, O. Sasaki and M. Satoh

28.18 Selection for a lower growth rate to avoid reaching bone apposition limits in chickens 414
C. Leterrier

28.19 Daily milk yield, variance and skewness of milk deviations in cows' resilience 414
L. Zavadilová, E. Kašná, J. Vařeka and Z. Krupová

28.20 Lameness scoring and its use in genetic selection to improve claw health in Austrian Fleckvieh cows 415
A. Köck, C. Fuerst, B. Fuerst-Waltl, M. Suntinger, K. Linke, J. Kofler, K. Schodl, F.J. Auer and C. Egger-Danner

28.21 Association between udder health genomic breeding values and dairy and health traits in French cows 415
R. Lefebvre, S. Barbey, F. Launay, M. Gaborit, L. Delaby, P. Martin and D. Boichard

28.22 Validating resilience indicators derived from longitudinal performance measurements 416
M. Ghaderi Zefreh, R. Pong-Wong and A. Doeschl-Wilson

28.23 Approaching the genetic evaluation models for clinical mastitis in Spanish dairy cows 416
M.A. Pérez-Cabal, I. Cervantes, J.P. Gutiérrez, J. López-Paredes and N. Charfeddine

28.24 Milk somatic cell counts in winter and summer are genetically different traits in Norwegian goats 417
H.B. Olsen, J. Jakobsen and T. Blichfeldt

28.25 Effects of two different traditional sire breeds on performance and behaviour of rearing pigs 417
A. Lange, M. Wutke, S. Ammer, A.K. Appel, H. Henne, A. Deermann and I. Traulsen

28.26 Evaluation of milk parameters and mastitis predisposition in Cyprus Chios sheep 418
S. Panayidou, T. Christofi, A.N. Georgiou and G. Hadjipavlou

28.27 Influence of early rearing system on later performance of commercial laying hens 418
Q. Berger, N. Bédère, P. Le-Roy, S. Lagarrigue, T. Burlot and T. Zerjal

28.28 Differentially expressed genes in tissues of Pietrain sired pigs challenged with high fiber/fat diet 419
E.U. Nwosu, B. Chakkingal Bhaskaran, E. Kowalski, W. Gorssen, R. Meyermans, S. Janssens, S. Millet, M. Aluwé, S. De Smet and N. Buys

28.29 GWAS based on imputed sequence-level genotypes in a huge cow data set: many roles for the GC gene 419
A.M. Krizanac, C. Falker-Gieske, C. Reimer, J. Heise, Z. Liu, J. Pryce, J. Bennewitz, G. Thaller and J. Tetens

28.30	GWAS for clinical metritis in Polish HF cows <i>P. Topolski, T. Suchocki and A. Żarnecki</i>	420
28.31	Genetic relationships between mastitis, milk yield traits and somatic cell count in Polish HF cows <i>P. Topolski and W. Jagusiak</i>	420

Session 29.

Innovative animal products and farming systems oriented to new consumer demand and trend

Room: Foyer Amphitheatre Parc

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Resconi / Realini

	Theatre Session 29	Book of Abstracts page
15:00	A New Zealand perspective of the role of genetics in underpinning future sheep production systems <i>P. Johnson, D. Scobie, S.-A. Newman, S.J. Rowe, S.M. Clarke and K.M. McRae</i>	421
	invited	
15:30	Blockchain technology in the beef breeding sector <i>B. Jornet and I. Achour</i>	421
15:45	Using science to optimise production systems to produce a premium product – the Lumina™ Lamb Story <i>P.L. Johnson, S. Saunders and A. McDermott</i>	422
16:00	Factors influencing willingness to pay for red meat with potential to improve consumer wellness <i>R. Zhang, Z. Kallas, M.P.F. Loeffen, M. Lee, L. Day, M.M. Farouk and C.E. Realini</i>	422
16:15	Perception of the use of rangeland and roughage by actors of the organic pig and layer hen sectors <i>L. Montagne, M. Goujon and F. Marie</i>	423
16:30	Role of dairy foods in human nutrition <i>C.M. Weaver</i>	423
	invited	
17:00	Coffee break	
17:30	Organoleptic properties of fast-growing and slow-growing chicken meat <i>R. Berrocal, L. Mur, J.L. Olleta, V. Resconi, M. Barahona, J. Romero and M.M. Campo</i>	424
17:45	Implementation of sustainable livestock farming principles for generating innovative animal products <i>M. Cohen-Zinder, E. Shor-Shimoni, H. Omri, F. Garcia Solares, S. Kaakoosh and A. Shabtay</i>	424
18:00	Recent changes and future expectations about meat consumption <i>F. Montossi, G. Ares, L. Antúnez, G. Brito, M. Del Campo, C. Saunders, M. Farouk and C.E. Realini</i>	425
18:15	Sustainability in the beef sector: aligning consumer and farmer perspectives <i>M. Henchion and V.C. Resconi</i>	425
	invited	
	Poster Session 29	Book of Abstracts page
28.11	FT-MIR spectroscopy to discriminate intramuscular fat of beef fed conventional vs sustainable diets <i>S. León-Ecay, I. Goenaga, A. López-Maestresalas, A. Gobeti Barro, M.P. Ellies-Oury, M. Beruete and K. Insausti</i>	426
28.12	Study of the genetic parameters of the destructured meat defect of ham on 3 male lines <i>A. Le Dreau, C. Garcia Baccino, D. Penndu, A. Buchet, P. Doussal and B. Lignesche</i>	426
28.13	Consumers' perception towards using seaweed as an alternative to antibiotics in rabbits in Spain <i>S. Al-Soufi, J. García, E. Cegarra, A. Muñíos, M. Miranda and M. López-Alonso</i>	427

28.14	Perceptions of viticulture-livestock complementarity in Burgundy: first insights <i>R. Ibdhi, O. Aguirre-Saavedra, S. Ambrosino, G. Houndafoche, M. Seignon, Y. Tanguy-Roump and C. Philippeau</i>	427
28.15	Feeding seaweed as an alternative to antibiotics in growing rabbits improves the meat fat profile <i>S. Al-Soufi, J.M. Lorenzo, J. García, E. Cegarra, A. Muiños, M. Miranda and M. López-Alonso</i>	428
28.16	Effects of lamb genotype, primal cuts, and vegetables on baby soups' sensory acceptability <i>M.R. Marques, M. Pimpão, C. Oliveira and J.M. Almeida</i>	428
28.17	Lipid fraction composition of the longissimus thoracis of Lidia beef breed <i>M.M. Campo, M. Barahona, V.C. Resconi, J.V. Romero, S. Romero, S. Zabala, J. Villalon and J.L. Olleta</i>	429
28.18	Innovation in the production and marketing of local breed products, path to long-term sustainability <i>A. Ivanković, G. Šubara, E. Šuran, M. Cerjak, J. Ramljak and M. Konjačić</i>	429
28.19	The ability of the Distell fatmeter to predict intramuscular fat in Yellowtail Kingfish <i>D. Milotic, F. Anderson, G. Partridge, A. Lymbery and G. Gardner</i>	430
28.20	Effect of game species on fatty acids, meat quality and shelf life <i>M.N. Hlohlongoane, U. Marume, O.C. Chikwanha and C. Mapiye</i>	430
28.21	Selection for A2 β -casein genotype in Holstein bulls <i>L. Jiménez-Montenegro, L. Alfonso, J.A. Mendizabal and O. Urrutia</i>	431

Session 30. Looking back, looking forward – Research on Beef production and quality in China and France (CSBF) and between Australia-France-China (The Triangle Project)

Room: Tête D'or Lounge

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Liu / Pethick

	Theatre Session 30	Book of Abstracts page
15:00	Consumer perception of the challenges facing livestock production and meat consumption <i>J.J. Liu, S. Chriki, M. Kombolo, M. Santinello, S. Pflanzler, É. Hocquette, M.P. Ellies-Oury and J.F. Hocquette</i>	431
15:15	invited Sustainable development of China's beef industry driven by a successful triangle beef cooperation <i>Q. Meng</i>	432
15:30	invited The production and quality improvement of mutton in China <i>H.L. Luo</i>	432
15:45	Comparison of sheep meat eating quality thresholds for Chinese, American and Australian consumers <i>R.A. O'Reilly, D.W. Pethick, G.E. Gardner, A.B. Pleasants and L. Pannier</i>	433
16:00	Differences in liver nutrient metabolism contribute to residual feed intake of beef cattle <i>Z.M. Zhou</i>	433
16:15	Marbling in French cattle: average level and factors of variations <i>A. Nicolazo De Barmon, I. Legrand and J. Normand</i>	434
16:30	Effect of high sulphur diet on rumen fermentation and epithelial barrier function in beef cattle <i>H. Wu, Y. Li, Q.X. Meng and Z.M. Zhou</i>	434
16:45	Coffee break	
17:15	Research progress on quality characteristics and regulation of yak meat in China <i>L.Z. Hao, B.Q. Bai, Y. Xiang, Q.X. Meng, J.Z. Niu, Y.Y. Huang and S.J. Liu</i>	435

17:30	Comparison of beef eating quality terminology databases <i>A. Barro, K. Insausti, M. Kombolo, M.P. Ellies-Oury and J.F. Hocquette</i>	435
17:45	Comparison of slaughter performance and meat quality of Tan sheep under different feeding regimes <i>X.G. Zhao, C. Zhang, M. Liu and H.L. Luo</i>	436
18:00	Effect of <i>Piper sarmentosum</i> extract on the growth and nutrient digestion of Hainan Black goat <i>G.D. Ren, Z.Y. Sheng, Y.X. Chen, X.G. Zhao, H. Zhang, H.L. Zhou, W.L. Lv and H.L. Luo</i>	436
18:15	Effects of grazing intensities and supplementary levels on the nutritional composition of lamb meat <i>H. Yang, J. Ji and H.L. Luo</i>	437

Poster Session 30

Book of Abstracts page

30.13	Perspectives on consumer attitudes to meat consumption <i>P. Purslow, W. Zhang and J.F. Hocquette</i>	437
30.14	Effects of different grazing intensities and supplementary feeding levels on meat quality of Hulunbu <i>X.H. Ma, Z. Li, X.G. Zhao, H. Yang and H.L. Luo</i>	438
30.15	Progress of yak carcass grading in Qinghai-Tibet Plateau of China <i>S.S. Zhang</i>	438

Session 31.

Pasture based solutions to realise a role for ruminants in a sustainable food system

Room: Bellecour 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Boland / Baumont

Theatre Session 31

Book of Abstracts page

15:00	Future-proofing the sustainability of pasture based beef production systems <i>invited A.K. Kelly and T.M. Boland</i>	439
15:15	Effect of sward type on growth performance and methane output of lambs in the post-weaning period <i>S. Woodmartin, P. Creighton, T.M. Boland, A. Monaghan and F. McGovern</i>	439
15:30	On farm grass growth prediction in Ireland – 4 year evaluation <i>E. Ruelle, L. Bonnard, D. Hennessy, L. Delaby and M. O'Donovan</i>	440
15:45	Incorporating plantain forage into a grazing dairy system: effect on farm productivity <i>O. Al-Marashdeh and H.M.G.P. Herath</i>	440
16:00	Dry matter production of multispecies swards under dairy grazing in two chemical nitrogen scenarios <i>C. Hearn, M. Egan, M.B. Lynch and M. O'Donovan</i>	441
16:15	Nitrogen herbage yield in grass and grass-white clover swards receiving zero nitrogen <i>Á. Murray, B. McCarthy and D. Hennessy</i>	441
16:30	Grassland-based dairy farms of French Massif Central adapt to climate change with diverse strategies <i>L. Allart, V. Oostvogels, F. Joly, C. Mosnier, N. Gross and B. Dumont</i>	442
16:45	Coffee break	
17:15	Effect of grazing intensity on nitrogen cycle of alpine summer pasture soil <i>S. Raniolo, A. Squartini, L. Da Ros, F. Camin, L. Bontempo, L. Maretto, D. Gianelle, M. Ramanzin, E. Sturaro and M. Rodeghiero</i>	442

17:30	The visibility of the invisible: analysing heifers reactions while learning the virtual fence system <i>D. Hamidi, N.A. Grinnell, M. Komainda, L. Wilms, F. Riesch, J. Horn, M. Hamidi, I. Traulsen and J. Isselstein</i>	443
17:45	Sheep integration into cropping systems for agroecological transition of farming systems in France <i>F. Stark, J. Ryschawy, R. Mettaufer, M. Grillot, I. Shaqura and M. Moraine</i>	443
18:00	Nutrient cycling and efficiency: a comparative flow analysis of meat and dairy sheep farming systems <i>F. Stark, N. Amposta, W. Nasri, M. Lamarque, S. Parisot, P. Salgado and E. González-García</i>	444
18:15	Pasture-based ruminants and biodiversity in contrasting contexts: an account of farmers' narratives <i>V.J. Oostvogels, B. Dumont, H.J. Nijland, L. Allart, I.J.M. De Boer and R. Ripoll-Bosch</i>	444

Poster Session 31

Book of Abstracts page

31.13	Meat quality in Podolian young bulls grazing on wood-pasture in a South Italy marginal area <i>F. Giannico, S. Tarricone, A. Caputi Jambrenghi, L. Tedone, D. Campanile and M.A. Colonna</i>	445
31.14	Good management of the pasture makes it possible to reduce the supplementation of autumn calves <i>D. Douhay</i>	445
31.15	Investigating the effects of lactation number, stage, and milking interval on nitrogen use efficiency <i>Y.M. Hu</i>	446
31.16	Plasma urea and diet crude protein concentration relationship in grazing dairy cows <i>R. Delagarde and N. Edouard</i>	446
31.17	An assessment of woody forage resources indigenous to southern Africa <i>M. Trytsman, F.L. Müller, M.I. Samuels, C.F. Cupido and A.E. Van Wyk</i>	447
31.18	The Effect of heterofermentative lactic acid bacteria on quality of King Napier grass <i>P. Lounglawan</i>	447
31.19	Grass chemical composition to predict methane production from grazing sheep at high latitude <i>Q. Lardy, M. Hetta, M. Ramin and V. Lind</i>	448
31.20	Forage height of native grasslands as an indicator of spatial and temporal grazing management <i>P. Aparicio, I. Paparamborda and P. Soca</i>	448
31.21	Improve the efficiency of fattening grazing sheep on rangeland by supplementary feeding <i>Y. Zhang and M. Xu</i>	449
31.22	The use of sheep of native breeds in the control of invasive plants <i>M. Pasternak, M. Puchała, J. Sikora and A. Kawęcka</i>	449

Session 32.

Beyond rumen: role of nutrition in cattle's intestinal health

Room: Bellecour 1

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Kreuzer / Pinotti

Theatre Session 32

Book of Abstracts page

15:00	Post-rumen health and its implications on health and performance invited <i>M.V. Sanz-Fernandez</i>	450
15:30	Impacts of inflammation and inflammatory diseases on reproduction in dairy cows invited <i>J.E.P. Santos</i>	450
16:00	The role of mycotoxins in the rumen and intestinal health of dairy cows invited <i>A. Gallo</i>	451

16:30 Absorption, metabolism and secretion of tocopherol (vitamin E) stereoisomers in dairy cows 451
invited S.K. Jensen and S. Lashkari

17:00 Coffee break

17:30 The role of rumen health (acetate) on milk fat synthesis and dietary strategies to increase milk fat 452
invited K.J. Harvatine and C. Matamoros

Session 33

Horses in farms and territories: challenges and new solutions

Room: Gratte Ciel 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Vial / Tapprest

Theatre Session 33	Book of Abstracts page
15:00 EUNetHorse-European network to improve the resilience and the performance of equine farms <i>M. Addes</i>	452
15:15 Robustness of equine business structures and global coherence <i>S. Boyer</i>	453
15:30 The equine network, a tool for horse professionals, advisors and teachers <i>G. Mathieu</i>	453
15:45 Does the diversity of the French territories impact farms keeping equines? <i>J. Veslot and G. Bigot</i>	454
16:00 Equestrian practitioners: essential services to support self-organization <i>C. Eslan, C. Vial and S. Costa</i>	454
16:15 Agricultural animal traction in France: characterization of the practice and its users <i>M.M. Miara, M.G. Gafsi and P.B. Boudes</i>	455
16:30 Effects of milking interval and frequency on milk yield in the mare <i>J. Auclair-Ronzaud, M. Bouchet, L. Laschon, E. Lambolez and L. Wimmel</i>	455
16:45 Coffee break	
17:15 Mineral profile of pasture-based mare milk from Basque Mountain horse breed: effect of lactation <i>A. Blanco-Doval, L.J.R. Barron and N. Aldai</i>	456
17:30 Sustainable utilisation of horse manure <i>M. Meyer, C. Eiberger, T. Schilling, D. Winter and L.E. Hoelzle</i>	456
17:45 Use of green waste compost as an alternative bedding to straw in horse husbandry <i>H. Unseld, D. Winter and M. Meyer</i>	457
18:00 Grazing management on practical horse farms <i>C. Siede, M. Komainda, B. Tonn, S.C.M. Wolter, A. Schmitz and J. Isselstein</i>	457
18:15 Use of digital technologies in horse husbandry to increase animal welfare and health <i>M. Pfeiffer, D. Winter, U. Dickhoefer and L.T. Speidel</i>	458
Poster Session 33	Book of Abstracts page
33.13 Working time requirements of work processes in the individual keeping of horses <i>L.T. Speidel, D. Winter and U. Dickhoefer</i>	458
33.14 Equine traction in viticulture: what about the workload of the horse-driver pair? <i>B. Pasquier, N. Delepouve and C. Bénézet</i>	459

33.15	Physiological and behavioural responses of donkeys to effort and discomfort <i>N. Seguin, C. Bonnin, A. Ruet and S. Biau</i>	459
33.16	Offering horse meat in restaurants to develop the demand <i>C. Vial, M. Sebbane and A. Lamy</i>	460
33.17	Relationship between average daily gain and an estimation of consumed grass <i>L. Wimmel, C. Lesoudard and J. Auclair-Ronzaud</i>	460
33.18	Comparison of flying and soil invertebrates' biodiversity on meadows with or without horse grazing <i>G. Goudet, F. Reigner and M. Beltramo</i>	461
33.19	Alterations of faecal microbiota in Jeju crossbred weanling horses <i>J.A. Lee, M.C. Shin, J.Y. Choi and S.M. Shin</i>	461
33.20	Colic incidence among horses in different husbandry systems <i>E. Schlotterbeck, L.T. Speidel and D. Winter</i>	462

Session 34. Sustainable pig and poultry production, including the use of water

Room: Bellecour 3

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Bee / Brodziak

	Theatre Session 34	Book of Abstracts page
15:00	The effect of feeding a soy-free diet on performance and carbon footprint of the feed intake by pigs <i>S. Millet, M. Lourenço, S. Palmans and C. De Cuyper</i>	462
15:15	Exploring variation in feed efficiency of grower-finisher pigs <i>M. Van Der Heide, J.V. Nørgaard and J.G. Madsen</i>	463
15:30	Former food slightly affect pig faecal microbiota without impairing jejunal integrity and physiology <i>M. Tretola, S. Mazzoleni, P. Silacci, L. Pinotti and G. Bee</i>	463
15:45	Bakery products and legume seeds in the diet of growing-finishing pigs <i>M. Van Helvoort and P. Bikker</i>	464
16:00	Recycling agricultural by-products: using purple carrots as an ingredient in layer quails feeding <i>A.S.-G. Sarmiento-García, A.B.-D. Benito-Diaz, C.V.-A. Vieira-Aller and O.O. Olgun</i>	464
16:15	Effect of camelina cake doses as soybean meal substitutions on growth and gut health of piglets <i>D. Luise, F. Correa, S. Viridis, C. Negrini, G. Cestonaro, L. Nataloni, G. Titton, E. Sattin, E. Costanzo and P. Trevisi</i>	465
16:30	The dietary fibre solubility in the maternal diet does not affect the muscle development of piglets <i>M. Girard, F. Correa, F. Palumbo, P. Silacci and G. Bee</i>	465
16:45	Coffee break	
17:15	Improving the sustainability of the Australian pork industry <i>G.L. Wyburn</i>	466
17:30	Are tailor-made health plans effective in triggering changes in pig farm management? <i>P. Levallois, M. Leblanc-Maridor, A. Scollo, P. Ferrari, C. Belloc and C. Fourichon</i>	466
17:45	Pork production can contribute positively to human protein supply <i>R.J.E. Hewitt, D.N. D'Souza and R.J. Van Barneveld</i>	467
18:00	Environmental and economic assessment of a French free-range chicken production system <i>B. Méda, E. Barlier, E. Péchernart, J.-Y. Limier and S. Mignon-Grasteau</i>	467

18:15 Effects of values and calculation changes in three IPCC guidelines on greenhouse gas inventories 468
E. Nugrahaeningtyas, J.S. Lee and K.H. Park

Poster Session 34

Book of Abstracts page

34.13	Bioavailability and repellent activity of phytochemicals against red mites <i>C. Carlu, T. Chabrilat, C. Girard and S. Kerros</i>	468
34.14	Riboflavin yield of common raw ingredients for organic poultry diets <i>V. Decruyenaere, N. Everaert, P. Rondia and J. Wavreille</i>	469
34.15	Sustainable poultry production: biocontrol measures, dietary approaches and packaging strategies <i>G. Maiorano and S. Tavaniello</i>	469
34.16	Genetic correlations between feeding behaviour, meat quality, carcass and production traits in pigs <i>A.T. Kavlak, T. Serenius and P. Uimari</i>	470
34.17	The effect of plant-derived terpenes additive in <i>Ascaris suum</i> management in organic fattening pigs <i>H. Bui, E. Belz, J. Ligonniere and M.E.L.A. Benarbia</i>	470
34.18	Effect of fattening and slaughter value of gilts on their lifetime piglet production <i>M. Szyndler-Nędza, M. Tyra and A. Mucha</i>	471
34.19	Are the ethics of pig breeding addressed in literature? <i>M. Van Der Sluis, R.S.C. Rijkers and K.H. De Greef</i>	471
34.20	Benzoic acid reduces environmental impact in fattener pig diets using life cycle assessment <i>E. Perez-Calvo, S. Lagadec, C. Driquet, D. Planchenault, S. Potot and C. Valliere</i>	472

Session 35.

Is there a future for experimental animal research in Europe and, if so, what is it?

Room: Gratte Ciel 1

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Chalvon-Demersay / Van Milgen

Theatre Session 35

Book of Abstracts page

15:00	Is there a future for experimental animal research in Europe? <i>J. Van Milgen and T. Chalvon-Demersey</i>	472
15:30	Testing minimally invasive blood collection techniques in pigs used for research <i>F.A. Eugenio, F. Gondret, M. Oster and C. Ollagnier</i>	473
15:45	Development of protocols for standard management and recording in pig research facilities <i>A. Wallenbeck, M. Girard, M. Johansen, S. Döpjan, M. Aluwe, C. De Cuyper, E. Labussière, M. Font-I-Furnols, M. Heetkamp and R. Westin</i>	473
16:00	Development of a protocol for administering a capsule to sample small intestine content <i>I. Garcia Viñado, M. Tretola, G. Bee and C. Ollagnier</i>	474
16:15	A modelling approach to investigate metabolic fluxes of amino acids in the small intestine of pigs <i>C.J.J. Garçon, J. Van Milgen, N. Le Floc'h and Y. Mercier</i>	474
16:30	<i>In vitro</i> gas production of pre-treated or untreated feedstuffs using cecum inoculum from horses <i>R.H. Jensen, R.B. Jensen, M.O. Nielsen and A.L.F. Hellwing</i>	475

16:45 Coffee break

17:15 Round table discussion 475
J. Van Milgen and T. Chalvon-Demersey

Poster Session 35

Book of Abstracts page

35.08 UpDown – an R Package to characterize unknown disturbances from longitudinal observations 476
I. David, V. Le and T. Rohmer

Session 36.

Technologies in insect production + controlling quality

Room: Tête D'or 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Heckmann / Deruytter

Theatre Session 36

Book of Abstracts page

15:00 Effect of sex ratio and density mating on reproductive performances in *Tenebrio molitor* 476
E. Soucat, K. Paul, Q. Li, A. Masseron, F. Gagnepain-Germain, A. Chauveau, E. Sellem and T. Lefebvre

15:15 Behavioural responses of black soldier fly to olfactory stimuli: evaluation of a Y-tube olfactometer 477
A. Spindola and M. Pulkoski

15:30 Cold storage: a tool for delayed and stable black soldier fly (*Hermetia illucens*) pupae eclosion 477
D. Deruytter, S. Bellezza Oddon, L. Gasco and C.L. Coudron

15:45 Influence of temperature on coloration in honey bees 478
J. Bubnič and J. Prešern

16:00 The juvenile hormone analogue, pyriproxifen, alters the body composition of *Tenebrio molitor* larvae 478
V. Hill, T. Parr, J. Brameld and A. Salter

16:15 Fate of food pathogens during black soldier fly rearing and processing 479
J. De Smet, D. Van De Weyer, E. Gorrens, N. Van Looveren and M. Van Der Borgh

16:30 Insect as animal feed: Fourier-transformed spectroscopy to reveal their protein molecular structure 479
J. Ortuño and K. Theodoridou

16:45 Coffee break

17:15 Proteomics evaluation of the barrier role of insects for the indirect recycling of fast food in feed 480
M.C. Lecrenier, M. Aerts, A. Cordonnier, L. Plasman, O. Fumière and V. Baeten

17:30 Scaling up fly mating chambers: lessons learned from operating 4 and 24 m³ fly mating chambers 480
S.P. Salari and M.L. De Goede

17:45 ALL-Yn: An automated solution for phenotyping *Tenebrio molitor* larvae 481
Q. Li, T. Mangin, J. Richard, E. Sellem, A. Masseron, F. Gagnepain-Germain, T. Lefebvre and R. Baude

18:00 Does sex matter? The impact of sex on the buffalo pupation phase 481
N. Gianotten, N. Heijmans and N. Steeghs

18:15 Assessment of chemical hazards in insect meal production for aquaculture feeds 482
I. Amaral, S.M. Ahmad, M. Ângelo, P. Correia Da Silva, A. Quintas, J.A.A. Brito, D. Murta, M.V. Santos, I. Vieira, T. Ribeiro and L.L. Gonçalves

Poster Session 36

Book of Abstracts page

36.13 Microbiological risk analysis in insect meal production 482
D. Guerreiro, D. Murta, M.V. Santos, I. Vieira, T. Ribeiro and H. Barroso

- 36.14 Multi directional approach in fly emergence evaluation and forecasting for *Hermetia illucens* 483
B. Grodzki, M.G. Zhelezarova, T. Bruder and M. Tejada
- 36.15 Application of NIRS on *Tenebrio molitor* protein meal 483
J. Richard, L. Darai, L. Sanchez and B. Lorrette

Session 37. Omics and integrative analyses towards understanding inter-organ cross-talk and whole body physiology of livestock

Room: Tête D'or 1

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Louveau

Theatre Session 37		Book of Abstracts page
15:00	State of the art in understanding interorgan crosstalk and physiology in farm animals <i>I. Cassar-Malek, I. Louveau, C. Boby, J. Tournayre, F. Gondret and M. Bonnet</i>	484
15:30	Gene networks controlling functional cell interactions in the pig embryo revealed by omics studies <i>A. Dufour, C. Kurilo, J. Stöckl, Y. Bailly, P. Manceau, F. Martins, S. Ferchaud, B. Pain, T. Fröhlich, S. Foissac, J. Artus and H. Acloque</i>	484
15:45	1H-NMR metabolomic study of Large White and Meishan pigs in late gestation: part 1 – foetal placenta <i>J. Guibert, A. Imbert, N. Marty-Gasset, L. Gress, C. Canlet, L. Canario, Y. Billon, A. Bonnet, L. Liaubet and C.M.D. Bonnefont</i>	485
16:00	Metabolic pathways leading to different intramuscular fat content in rabbit divergent lines <i>P. Hernández, A. Blasco and A. Zubiri-Gaitán</i>	485
16:15	Proteomics profiles of longissimus thoracis muscle of Arouquesa cattle from different systems <i>L. Sacarrão-Birrento, A. Dittmann, S.P. Alves, L. Kunz, D.M. Ribeiro, S. Silva, C.A. Venâncio and A.M. De Almeida</i>	486
16:30	Serum metabolomics of newborn lambs before and after colostrum feeding <i>L. Lachemot, J. Sepulveda, X. Such, J. Piedrafitá, G. Caja and A.A.K. Salama</i>	486
16:45 Coffee break		
17:15	Characterization of milk small extracellular vesicles to study adaptation to lactation in ruminants <i>C. Boby, A. Delavaud, J. Pires, L.E. Monfoulet, S. Bes, S. Emery, L. Bernard, C. Leroux, A. Imbert, M. Tourret, F. Fournier, D. Roux, H. Sauerwein and M. Bonnet</i>	487
17:30	Multi-tissue transcriptome analysis of bovine herpesvirus-1 (BoHV-1) challenged dairy calves <i>S. O'Donoghue, B. Earley, M.S. McCabe, S.L. Cosby, K. Lemon, J.W. Kim, J.F. Taylor, D.W. Morris and S.M. Waters</i>	487
17:45	Transcriptome analysis reveals a different immune response depending on a SOCS2 gene point mutation <i>C. Oget-Ebrad, C. Cabau, S. Walachowski, N. Cebron, J. Sarry, C. Allain, R. Rupp, G. Foucras and G. Tosser-Klopp</i>	488
18:00	Expression quantitative trait loci in whole blood influence putative immune genes in sheep <i>K. Dubarry, M. Coffey and E. Clark</i>	488
18:15	Thigh muscle proteomics revealed key pathways related to feed efficiency in slow-growing chicken <i>P. Kaewsatuan, C. Poomprapun, S. Kubota, W. Molee, P. Uimari and A. Molee</i>	489
Poster Session 37		Book of Abstracts page
37.12	Multi-breed, multi-tissue systems biology analysis of beef cattle divergent for feed efficiency <i>K. Keogh, D.A. Kenny, P.A. Alexandre, M. McGee and A. Reverter</i>	489

37.13	Contribution of plasma proteins to the phenotypic signature of feed efficiency in Charolais bulls <i>I. Cassar-Malek, A. Imbert, A. Delavaud, H. Sauerwein, R. Bruckmaier, G. Cantalapiedra-Hijar and M. Bonnet</i>	490
37.14	Serum metabolomics of fattening bulls fed dry-total mixed ration (TMR) or corn silage-based TMR <i>C. Stöcker-Gamigliano, M.H. Ghaffari, C. Koch, M. Schönleben, J. Mentschel, N. Göres, P. Fissore, I. Cohrs, S. Schuchardt and H. Sauerwein</i>	490
37.15	Physiological importance of blood vitamin E in production characteristics of Japanese Black steers <i>M. Kim, T. Masaki, K. Ikuta, E. Iwamoto, Y. Uemoto, F. Terada, S. Haga and S. Roh</i>	491
37.16	Age-related changes in ruminal and blood parameters and intramuscular adiposity in Hanwoo steers <i>S.Y. Kim and M. Baik</i>	491
37.17	Post-ruminal urea release impact liver proteomics of beef cows at late gestation <i>M.M. Santos, T.C. Costa, R.D. Araújo, J. Martín-Tereso, I.P. Carvalho, M.P. Gionbelli and M.S. Duarte</i>	492
37.18	Liver transcriptome profiles of dairy cows with different serum metabolotypes <i>M. Hosseini Ghaffari, H. Sadri, N. Trakooljul, C. Koch and H. Sauerwein</i>	492
37.19	Comparison of metabolomic profile of the offspring of nulliparous and primiparous Holstein cows <i>M. Terré and M. Tortadès</i>	493
37.20	Transcriptome of the feto-maternal interface in pigs in late gestation: part 1 – foetal placenta <i>A. Bonnet, S. Maman, L. Gress, A. Suin, C. Bravo, G. Cardenas, Y. Billon, L. Canario, N. Vialaneix, C.M.D. Bonnefont and L. Liaubet</i>	493
37.21	Transcriptome of the feto-maternal interface in pigs in late gestation: part 2 – sow endometrium <i>A. Bonnet, S. Maman, L. Gress, A. Suin, S. Legoueix, C. Bravo, Y. Billon, N. Vialaneix, C.M.D. Bonnefont and L. Liaubet</i>	494
37.22	¹ H-NMR metabolomic study of Large White and Meishan pigs in late gestation: part 2 – sow endometrium <i>A. Imbert, N. Duprat, N. Marty-Gasset, L. Gress, C. Canlet, Y. Billon, N. Vialaneix, C.M.D. Bonnefont, A. Bonnet and L. Liaubet</i>	494
37.23	The effect of dietary <i>Laminaria digitata</i> on urinary and kidney proteomes of piglets <i>D.M. Ribeiro, A. Dittmann, D.F.P. Carvalho, L. Kunz, J.P.B. Freire, J.A.M. Prates and A.M. Almeida</i>	495
37.24	Vitamin D3 supplementation has little effect on gut microbiome in pigs <i>M. OcZkowicz, A. Wierzbicka, A. Steg and M. Świątkiewicz</i>	495

Session 38. Equal opportunities and open communication for early career scientists

Room: Gratte Ciel 3

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Pszczola / Sell-Kubiak / Newton / Obsteter / Gislou

Theatre Session 38		Book of Abstracts page
15:00	Equal opportunities in science <i>I. Adriaens, M. Pszczola and T. Wallgren</i>	496
16:30	The responsibilities of authors, readers and learned-societies in animal science publishing <i>J. Van Milgen, I. Ortigues-Marty, G. Bee, M. Wulster-Radcliffe, J. Sartin, T.A. Davis and P.J. Kononoff</i>	496
17:00 Coffee break		
17:30	Animal – open space the new member of the animal consortium <i>G. Bee</i>	497
18:00	Artificial intelligence language models in the scientific career <i>M. Pszczola, I. Adriaens and T. Wallgren</i>	497

Session 39. TechCare and ClearFarm: pilots on PLF tools for monitoring animal welfare

Room: Roseraie 3

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Morgan-Davies / Llonch

Theatre Session 39		Book of Abstracts page
15:00	TechCare: exploring the use of precision livestock farming for small ruminant welfare management <i>C. Morgan-Davies, G. Tesniere, C. Dwyer, G. Jorgensen, E. Gonzalez-Garcia and J.M. Gautier</i>	498
15:15	Monitoring water trough attendance in shed: a potential indicator of sheep health or welfare issues? <i>G. Tesnière, U. Jean-Louis, E. Doutart, S. Duroy, C. Douine, M. Rinn, D. Gautier, A. Hardy, A. Aupiais, F. Guimbert, J.-M. Gautier and C. Morgan-Davies</i>	498
15:30	TechCare UK pilots – integrated sheep system studies using technologies for welfare monitoring <i>A. McLaren, A. Waterhouse, F. Kenyon, H. MacDougall, S. Beechener, A. Walker, M. Reeves, N. Lambe, J. Holland, A. Thomson, J. Duncan, A. Barnes, C. Dwyer, F. Gimbert, J.M. Gautier, G. Tesniere and C. Morgan-Davies</i>	499
15:45	An attempt to aggregate pig welfare indicators from sensors: achievements and barriers <i>H.L. Ko, L.J. Pedersen, G. Franchi, M.B. Jensen, M. Larsen, I.J.M.M. Boumans, J.D. Bus, E.A.M. Bokkers, X. Manteca and P. Llonch</i>	499
16:00	Is sensor technology ready for use in animal welfare assessments of gestating sows? <i>I.J.M.M. Boumans and E.A.M. Bokkers</i>	500
16:15	Identification of behavioural pattern associated with mastitis in dairy cows <i>L. Herve, Y. Gómez, K. Chow, A.H. Stygar, G.V. Berteselli, E. Dalla Costa, E. Canali and P. Llonch</i>	500
16:30	Use of PLF sensors to monitoring rumination as an alternative for early clinical mastitis detection <i>G.V. Berteselli, E. Dalla Costa, Y. Gómez Herrera, M.G. Riva, S. Barbieri, R. Zanchetta, P. Llonch, X. Manteca and E. Canali</i>	501
16:45 Coffee break		
17:15	Monitoring the stress of light goat kids transported over short journeys <i>M. Sort, A. Elhadi, R. Costa, A. Recio, A.A.K. Salama and G. Caja</i>	501
17:30	Monitoring the stress of light suckling lambs transported over short journeys <i>A. Elhadi, J.C. Jesús, R. Costa, A. Recio, A.A.K. Salama and G. Caja</i>	502
17:45	Exploration of indicators measured by PLF sensors to monitor pig welfare during transportation <i>H.-L. Ko, P. Fuentes Pardo, F. Jiménez Caparros, X. Manteca and P. Llonch</i>	502
18:00	Quantifying the value of early warning system (EWS) based on ‘smart water trough’ in a sheep farm <i>A. Bar-Shamai, I. Shimshoni, A. Godo, J. Lepar and I. Halachmi</i>	503
18:15	Economic feasibility of using sensing technologies for welfare monitoring in the pig value chain <i>A.H. Stygar, M. Pastell, P. Llonch, E.A.M. Bokkers, J.D. Bus, I.J.M.M. Boumans, L.J. Pedersen and J.K. Niemi</i>	503
Poster Session 39		Book of Abstracts page
39.13	ORIOLE: a web application for cleaning data from the walk-over-weighing device in livestock systems <i>I. Sanchez, E. González-García, B. Fontez and B. Cloez</i>	504
39.14	Monitoring liveweight in Sarda dairy sheep using a walk-over-weighing system <i>M. Decandia, M. Acciaro, V. Giovanetti, G. Molle, F. Chessa, I. Llach and E. González-García</i>	504
39.15	Stakeholders’ attitudes to early warning systems to promote animal welfare in small ruminants <i>E.N. Sossidou, S.I. Patsios, S. Beechener, V. Giovanetti, G. Tesniere, L. Grova, T. Keady, G. Caja, A. Bar-Shamai, L.T. Ciszter and C. Morgan-Davies</i>	505
39.16	Comparison between automatic milking and milking parlour system on dairy cows’ welfare <i>G.V. Berteselli, S. Cannas, E. Dalla Costa, R. Zanchetta, G. Pesenti Rossi and E. Canali</i>	505

Session 40. The transition from pregnancy to lactation in dairy goats and sheep

Room: Roseraie 2

Date: Tuesday 29 August 2023; 15:00 – 18:30

Chair: Hernández-Castellano / Salama

Theatre Session 40		Book of Abstracts page
15:00	Update of nutritional requirements of goats for growth and pregnancy in hot environments <i>I.A.M.A. Teixeira, C.J. Härter, J.A.C. Vargas, A.P. Souza and M.H.M.R. Fernandes</i>	506
15:30	Intramammary administration of lipopolysaccharides at parturition affects colostrum quality <i>M. González-Cabrera, A. Torres, M. Salomone-Caballero, N. Castro, A. Argüello and L.E. Hernández-Castellano</i>	507
15:45	Goat kids are not affected by the intramammary administration of lipopolysaccharides at parturition <i>M. González-Cabrera, M. Salomone-Caballero, S. Álvarez, A. Argüello, N. Castro and L.E. Hernández-Castellano</i>	507
16:00	Near-infrared spectroscopy prediction models preliminary results in ewes' colostrum <i>S. González-Luna, E. Albanell, G. Caja and C. L. Manuelian</i>	508
16:15	No kid, no milk? Trials about induction of goat lactation without gestation <i>L. Fito, C. Constancis and M. Bouy</i>	508
16:30	Perinatal rumen microbiota in relation to feed utilization and biochemical parameters in sheep <i>J.X. Chen</i>	509
16:45 Coffee break		
17:15	Alpine goats divergent for functional longevity differ in metabolic profile during transition period <i>J. Pires, T. Fassier, M. Tourret, C. Huau, N. Friggens and R. Rupp</i>	509
17:30	Effects of sodium butyrate supplementation at late gestation of ewes <i>Y.J. Zhang, X.Y. Zhang, X.H. Duan, R.C. Yang and S.W. Zhang</i>	510
17:45	New artificial teats to improve goat milking device laboratory tests <i>M. Despinasse, C. Bonin, G. Coquereau and J.L. Poulet</i>	510
18:00	Olive cake feeding alters the expression of lipogenic genes in mammary and adipose tissue in goats <i>M.C. Neofytou, A.L. Hager-Theodorides, E. Sfakianaki, S. Symeou, D. Sparaggis, O. Tzamaloukas and D. Miltiadou</i>	511
Poster Session 40		Book of Abstracts page
40.11	Chemical composition and physicochemical characteristics of mountainous goat milk during lactation <i>E. Kasapidou, I.V. Iliadis, G. Papatzimos, M.A. Karatzia, Z. Basdagianni and P. Mitlianga</i>	511
40.12	Energy balance and body reserve dynamics in early lactation dairy ewes <i>F. Corbiere, C. Machefer, J.M. Astruc, M. El Jabri, B. Fanca, P. Hassoun, C. Marie-Etancelin, A. Meynadier and G. Lagriffoul</i>	512
40.13	Effects of <i>Sulla flexuosa</i> hay as alternative feed resource on goat's milk production and quality <i>S. Boukrouh, A. Noutfia, N. Moula, C. Avril, J.-L. Hornick, M. Chentouf and J.-F. Cabaraux</i>	512
40.14	High DCAD and ascorbic acid modify acid base, oxidative stress and kidney function in dairy goats <i>S. Thammacharoen, S. Semsirboon, D.K. Do Nguyen, S. Poonyachoti, T.A. Lutz and N. Chaiyabutr</i>	513
40.15	Link between chest circumference at late gestation and milk somatic cell count in Sarda ewe-lambs <i>D. Sioutas, A. Ledda, A. Mazza, A. Marzano, M. Sini and A. Cannas</i>	513

Scientific programme

Wednesday 30 August 2023

Session 41.

Open the black box: using omics to better understand biological interpretation of complex traits

Room: Prestige Gratte Ciel

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Tiezzi / Pocrnic

Theatre Session 41	Book of Abstracts page
8:30 Incorporating high-dimensional omics phenotypes into models for predicting breeding values <i>invited</i> O.F. Christensen	514
9:00 Biologically informed genomic predictions with the NextGPjl statistical analysis package E. Karaman, V. Milkevych and L. Janss	514
9:15 Fine mapping QTL associated with fertility in dairy cattle using gene expression I. Van Den Berg, A.J. Chamberlain, I.M. MacLeod, T.V. Nguyen, M.E. Goddard, R. Xiang, B. Mason, S. Meier, C.V.C. Phyn, C.R. Burke and J.E. Pryce	515
9:30 How heritable are metabolomic features? An omic based approach in pigs S. Bovo, G. Schiavo, F. Fanelli, A. Ribani, F. Bertolini, V. Taurisano, M. Gallo, G. Galimberti, S. Dall'olio, P.L. Martelli, R. Casadio, U. Pagotto and L. Fontanesi	515
9:45 Combined transcriptomics and metabolomics in the whole blood to depict feed efficiency in pigs C. Juigné, E. Becker and F. Gondret	516
10:00 Imputation of sequence variants in more than 250,000 German Holsteins A.M. Krizanac, C. Falker-Gieske, C. Reimer, J. Heise, Z. Liu, J. Pryce, J. Bennewitz, G. Thaller and J. Tetens	516
10:15 Coffee break	
10:45 Longitudinal study on the rabbit's gut microbiota variation through age I. Biada, M.A. Santacreu, A. Blasco, R.N. Pena and N. Ibáñez-Escriche	517
11:00 Studying cattle structural variation and pangenome using whole genome sequencing G.E. Liu	517
11:15 Host genetics affect the composition of the lower gut microbiota in dairy cows L. Brulin, S. Ducrocq, J. Estellé, G. Even, S. Martel, S. Merlin, C. Audebert, P. Croiseau and M.P. Sanchez	518
11:30 A model including host genotype, gut microbiome, and fat deposition measures in swine F. Tiezzi and C. Maltecca	518
11:45 protiPig: microbial analyses of traits related to nitrogen utilization efficiency in pigs M. Schmid, N. Sarpong, M. Rodehutschord, J. Seifert, A. Camarinha-Silva and J. Bennewitz	519
12:00 Rumen microbiome promote host metabolism and microbial bile acids bio-transformation in sheep B.Y. Zhang, Y. Yu, X.Z. Jiang, Y.M. Cui, H.L. Luo and B. Wang	519
12:15 Blending multivariate models to predict feed efficiency and explore multiple omics in meat sheep Q. Le Graverand, F. Tortereau, C. Marie-Etancelin, A. Meynadier, J.L. Weisbecker and K.A. Lê Cao	520

12:30	The effect of dietary <i>Laminaria digitata</i> on the muscle proteome and metabolome of weaned piglets <i>D.M. Ribeiro, D.F.P. Carvalho, C.C. Leclercq, S. Charton, K. Sergeant, E. Cocco, J. Renaut, J.A.M. Prates, J.P.B. Freire and A.M. Almeida</i>	520
12:45	Search for new mutations in cattle by systematic whole genome resequencing <i>M. Boussaha, C. Eché, C. Escoufflaire, C. Grohs, C. Iampietro, A. Capitan, M. Denis, S. Fritz, C. Donnadiu and D. Boichard</i>	521

Poster Session 41

Book of Abstracts page

41.16	Estimation of non-additive genetic effects for semen production traits in beef and dairy bulls <i>R. Nagai, M. Kinukawa, T. Watanabe, A. Ogino, K. Kurogi, K. Adachi, M. Satoh and Y. Uemoto</i>	521
41.17	Evaluating functional properties of feeding black soldier fly larvae in laying hens by FeedOmics <i>A. Rezaei Far, E. Zaccaria, I. Fodor, P. Van Wikselaar, S. Naser El Deen, S. Kar and T. Veldkamp</i>	522
41.18	Characterization of two divergent lines through functional inference of ruminal microbiota <i>J. Guibert, A. Meynadier, V. Darbot, C. Allain and C. Marie-Etancelin</i>	522
41.19	Blood transcriptomic comparison under different THI in Holstein <i>J.-E. Park, H. Kim, J.-H. Cho, H.-G. Lee, W. Park and D. Shin</i>	523
41.20	Metabolome profile of the pectoralis major muscle of red-winged tinamou: a pilot study <i>J.M. Malheiros, C.S.M.M. Vilar, P.F. Silva, L.A. Colnago, J.A.I.I.V. Silva and M.E.Z. Mercadante</i>	523
41.21	Post-mortem muscle proteome of crossbred bulls and steers: carcass and meat quality <i>O.R.M. Neto, W.A. Baldassini, L.A.L. Chardulo, R.A. Curi, G.L. Pereira, B.M. Santiago and R.V. Ribeiro</i>	524
41.22	ITGA6 homozygous splice-site mutation causes junctional epidermolysis bullosa in Charolais cattle <i>C. Grohs, M. Boussaha, A. Boulling, V. Wolgust, L. Bourgeois-Brunel, P. Michot, N. Gaiani, M. Vilotte, J. Riviere and A. Capitan</i>	524
41.23	A sheep pangenome reveals the spectrum of structural variations and their effects on tail phenotypes <i>R. Li, M. Gong, X.M. Zhang, F. Wang, Z.Y. Liu, L. Zhang, S.Q. Gan and Y. Jiang</i>	525
41.24	A Chinese indicine pan-genome reveals novel structural variants introgressed from other Bos species <i>X.L. Dai, P.P. Bian, D.X. Hu, F.N. Luo, Y.Z. Huang, R. Heller and Y. Jiang</i>	525
41.25	Multi-omic analysis reveal epigenetic regulation during muscle growth and development in sheep <i>Q.J. Zhao, Y.H. Ma and Y. Liu</i>	526
41.26	The effect of production system on the muscle proteome of dromedary camel (<i>Camelus dromedarius</i>) <i>M. Lamraoui, D.M. Ribeiro, Y. Khelef, N. Sagraoui, H. Osório and A.M. De Almeida</i>	526
41.27	Effect of mitochondrial DNA copy number on productive traits and meat quality in pigs <i>E. Molinero, R.N. Pena, J. Estany and R. Ros-Freixedes</i>	527
41.28	Multi-omics analysis revealed the interaction of microbiota and host in rumen of hanwoo <i>W.C. Park, J.W. Son, M.J. Jang, N.R. An, H.J. Choi, S.A. Jung, J.A. Lim, D.H. Kim, J.H. Cha, S.Y. Choi, Y.J. Lim, S.S. Jang, D.J. Lim and H.H. Chai</i>	527

Session 42.

Animal genetics to address food security and sustainability

Room: Foyer Amphitheatre Rhone

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Soelkner / Granados

Theatre Session 42

Book of Abstracts page

8:30	Challenge session: animal genetics to address food security and sustainability <i>A. Granados and J. Sölkner</i>	528
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8:45	Causal structures between gut microbiota and efficiency traits in poultry <i>V. Haas, M. Rodehutschord, A. Camarinha-Silva and J. Bennewitz</i>	528
9:00	Exploring crossbreeding to reduce GHG Emissions and feed-food competition in beef production <i>A. Mertens, L. Kokemohr, E. Braun, L. Legein, C. Mosnier, G. Pirlo, P. Veysset, S. Hennart, M. Mathot and D. Stilmant</i>	529

Session 43. Better calves for better farms: how the young stock can be the key to success

Room: Foyer Amphitheatre Parc

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Costa / Keatinge

	Theatre Session 43	Book of Abstracts page
8:30	Genetic selection for dairy calf disease resistance traits: opportunities and challenges <i>C. Lynch, F.S. Schenkel, N. Van Staaveren, F. Miglior, D. Kelton and C.F. Baes</i>	529
9:00	Genetic research on colostrum quality traits and passive transfer of immunity in Greek dairy herds <i>A. Soufleri, G. Banos, N. Panousis, G. Arsenos, A. Kougioumtzis, V. Tsiamadis and G.E. Valergakis</i>	530
9:15	Phenotypic and genetic analysis of beef-on-dairy crossbred calves <i>R.H. Ahmed, C. Schmidtman, J. Mugambe and G. Thaller</i>	530
9:30	Assessing passive immune transfer in newborn calves: salivary and serum IgG association <i>F.G. Silva, E. Lamy, S. Pedro, I. Azevedo, P. Caetano, J. Ramalho, L. Martins, A.M.F. Pereira, J.O.L. Cerqueira, S.R. Silva and C. Conceição</i>	531
9:45	Biochemical predictors of successful transition from milk to solid feed in Holstein calves <i>P. Kazana, N. Siachos, N. Panousis, G. Arsenos and G.E. Valergakis</i>	531
10:00	The impact of dairy farm management on long-term robustness of veal calves <i>F. Marcato, H. Van Den Brand, L. Webb, M. Wolthuis-Fillerup, F. Hoorweg and K. Van Reenen</i>	532
10:15	Coffee break	
10:45	The assessment of transfer of passive immunity in dairy calves affected by neonatal diarrhoea <i>G. Sala, V. Bronzo, A. Boccardo, A.L. Gazzonis, P. Moretti, V. Ferrulli, A.G. Belloli, L. Filippone Pavesi, G. Pesenti Rossi and D. Pravettoni</i>	532
11:00	Automatic monitoring of calves' behaviour for a precision weaning approach <i>R. Colleluori, D. Cavallini, A. Formigoni and L. Mammi</i>	533
11:15	Can dairy herds be in a positive colostrum stock balance? <i>A. Soufleri, G. Banos, N. Panousis, G. Arsenos, A. Kougioumtzis, V. Tsiamadis and G.E. Valergakis</i>	533
11:30	Dairy-beef calves: current practices and views of calf producers and rearers <i>D.J. Bell, M.J. Haskell, C.S. Mason and C.-A. Duthie</i>	534
11:45	Sodium percarbonate as a preservative in waste milk fed to dairy calves <i>D.J. Wilson, G.M. Goodell, R. Dumm, T. Kelly and M. Bethard</i>	534
12:00	Pre-transport diet affects the physiological status of calves during transport by road and ferry <i>S. Siegmann, L.L. Van Dijk, N.L. Field, G.P. Sayers, K. Sugrue, C.G. Van Reenen, E.A.M. Bokkers and M. Conneely</i>	535
12:15	Clonal dissemination of MDR <i>Pasteurella multocida</i> ST79 in a Swiss veal calves <i>J. Becker, J. Fernandez, A. Rossano, M. Meylan and V. Perreten</i>	535
12:30	Effects of feeding milk with antibiotic residues on calf performance during the pre-weaning period <i>A. Flynn, C. Mc Aloon, M. Mc Fadden, J.P. Murphy, S. Mc Pherson, C. Mc Aloon and E. Kennedy</i>	536

12:45	Effects of extending lactation for dairy cows on health, development and production of their calves <i>Y. Wang, R. Goselink, E. Burgers, A. Kok, B. Kemp and A.T.M. Van Knegsel</i>	536
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Poster Session 43

Book of Abstracts page

43.16	Dam-calf contact rearing in Switzerland: Aspects of management and milking <i>J. Rell, C. Nanchen, P. Savary, C. Buchli and C. Rufener</i>	537
43.17	A survey of colostrum management practices in dairy farms of Piedmont region (Italy): a pilot study <i>G.V. Berteselli, G. Pesenti Rossi, G. Vezzaro, E. Dalla Costa, S. Barbieri and E. Canali</i>	537
43.18	Serum profiles of dairy calves fed a milk replacer or whole milk at two levels of supply <i>T. Chapelain, J.B. Daniel, J.N. Wilms, J. Martín-Tereso and L.N. Leal</i>	538
43.19	Prevalence of foot lesions in French slaughter dairy and beef young bulls housed in indoor feedlot <i>S. Ishak, R. Guatteo, A. Lehébel, N. Brisseau, M. Gall, A. Wache and A. Relun</i>	538
43.20	Effect of direct-fed microbial supplementation on performance and health of pre-weaning dairy calves <i>J. Magalhaes, B.I. Cappellozza, T.C. Dos Santos, F.N. Inoe, M.S. Coelho, V. Soares and J.L.M. Vasconcelos</i>	539
43.21	The effect of astaxanthin on health and calves performance <i>E. Sosin, I. Furgał-Dierzuk, B. Śliwiński and A. Burmańczuk</i>	539
43.22	Strategic grouping of dairy beef calves on arrival at a rearing unit <i>D.J. Bell, C.S. Mason, K.C. Henderson, M.J. Haskell and C.-A. Duthie</i>	540
43.23	Calves sexing and crossbreeding to optimize the destination of the young from French dairy farms <i>S. Dominique</i>	540
43.24	Inclusion of grass silage in finishing total mixed rations for rosé veal calves <i>M. Vestergaard, M. Bjerring, A.L.F. Hellwing, M.B. Jensen, B. Muhlig, L. Mogensen and N.B. Kristensen</i>	541
43.25	Veal calves' housing in France: current situation and investment needs <i>M. Tourtier and C. Martineau</i>	541
43.26	Evolution of the use of antibiotics in the veal calves' sector in France between 2013 and 2020 <i>M. Chanteperdrix, A. Chevance, M. Orlianges, D. Urban, M. Tourtier and P. Briand</i>	542

Session 44.

Building on a resilient dairy sector – from animal, farm and regional perspective – Part 1

Room: Tête D'or Lounge

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Kuipers / Schuenemann

Theatre Session 44

Book of Abstracts page

8:30	Resilience4Dairy: sharing knowledge to improve sustainability and resilience of the dairy sector <i>V. Brocard, M. Klopčič and J. Boonen</i>	542
8:45	Indicators and influencing factors of livestock resilience <i>I.D.E. Van Dixhoorn, J. Ten Napel, A. Mens and J.M.J. Rebel</i>	543
9:15	Reducing stress of dairy cows and farmers to improve resiliency and welfare <i>M.T.M. King and T.J. De Vries</i>	543
9:45	Building resilience in the dairy sector of China <i>S. Li, W. Wang, W. Du, X. Sun, K. Yao and J. Xia</i>	544

10:15	Coffee break	
10:45	Building resilience in farming: dairy cattle and workforce management <i>G.M. Schuenemann and J.M. Piñeiro</i>	544
11:15	Working on resilience in the Ukrainian dairy sector <i>L. Stepura</i>	545
11:30	Future scenarios for livestock agriculture in New Zealand <i>C. Vannier, T. Cochrane, L. Bellamy, T. Merritt, H. Quenol and B. Hamon</i>	545
11:45	Breeding approaches to improve robustness and resilience in dairy cows <i>K. May and S. König</i>	546
12:00	Resilience from the perspective of farm economics <i>E. Kołoszycz and A. Wilczyński</i>	546
12:15	Labour: a key factor in the resilience of the European dairy farmer <i>S. Debevere, L. Dejonghe, I. Louwagie, I. Vuylsteke, E. Béguin, S. Fourdin, P. Rondia, L. Boulet, S. Mathieux and G. Elluin</i>	547
12:30	Resilience of dairy farming: the farmers' point of view <i>E. Castellán, C. Bausson and V. Brocard</i>	547
Poster Session 44		Book of Abstracts page
44.12	Local breed as an alternative to Holstein-Friesian cows in a farm with low level of milk production <i>M. Sobczuk-Szul, Z. Nogalski, M. Momot and P. Pogorzelska-Przybyłek</i>	548

Session 45. Transformation of livestock practices in response to society's expectations on animal welfare, market demand for animal products and environmental issues

Room: Bellecour 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Thenard / Boyle

Theatre Session 45		Book of Abstracts page
8:30	Product quality as a lever to change farming practices to meet society's expectations <i>V. Thenard, S. Couvreur, L. Fortun-Lamothe, B. Méda and T. Petit</i>	548
8:45	Transformation in the dairy sector: a global analysis of sustainability certification standards <i>K. McGarr-O'Brien, J. Herron, L. Shalloo, I.J.M. De Boer and E.M. De Olde</i>	549
9:00	The analysis of a co-design process to develop an eco-citizen dairy cattle farming system experiment <i>J.E. Duval, M. Taverne, M. Bouchon and D. Pomiès</i>	549
9:15	Perceived quality of meat products in short circuits by producers and their customers <i>C. Couzy, G. Haj Chahine, V. Diot, S. Masselin-Sylvain, S. Meurisse, M. Klingler and C. Bièche-Terrier</i>	550
9:30	Value-adding attributes for dairy calves within local beef sector – perceptions among stakeholders <i>L. Schönfeldt, M.G.G. Chagunda and N. Ströbele-Benschop</i>	550
9:45	Farpédia: how to improve the global acceptability of livestock systems with communication <i>A.-L.J. Thadee and G. Brunschwig</i>	551
10:00	How and why involve citizens in a participatory research project aiming to design livestock farming? <i>P. Coeugnet, J. Labatut, G. Vourc'h and J.E. Duval</i>	551

10:15	Coffee break	
10:45	Social sustainability: what concepts to approach farmers' satisfaction at work <i>B. Dedieu, J. Duval, P. Girard, N. Hostiou, S. Mercandalli and G. Soullier</i>	552
11:00	Implementing agroecological practices: what are the effects on working conditions of dairy farmers? <i>A.-L. Jacquot, M. Gérard, J.E. Duval and N. Hostiou</i>	552
11:15	Promoting and guiding transformation of French veal calf farms in response to societal expectations <i>C. Martineau, D. Bastien, M. Chantepedrix, C. Denoyelle, V. Lefoul and M. Orlianges</i>	553
11:30	Designing rabbit breeding systems with access to the outdoors with the innovative design method <i>L. Fortun-Lamothe, M.H. Jeuffroy and L. Le Du</i>	553
11:45	Challenges and opportunities for transitioning to 'low anthelmintics use' in livestock systems <i>M. Sautier and P. Chiron</i>	554
12:00	The rearing of calves, kids and lambs with adults in dairy systems in the AuRA region, France <i>C. Constancis, A. Igier and F. Debrez</i>	554
12:15	Expectations of French suckler farmers in terms of technical support services <i>A. Antoni-Gautier, J. Chambeaud, T. Falcou, C. Galvagnon, N. Lemonnier and J.B. Menassol</i>	555
Poster Session 45		Book of Abstracts page
45.15	'Antibiotic-free' strategies in chicken production in France: success factors, assets and limitation <i>N. Rousset and J. Hercule</i>	555
45.16	Veal calves' production: what societal expectations in terms of animal housing for their welfare? <i>D. Bastien, M. Tourtier and A. Warin</i>	556
45.17	Salmon welfare perceived by various stakeholders: where do we stand? <i>C.M. Monestier, L.R.B. Reverchon-Billot, M.S. Stomp and A.W. Warin</i>	556
45.18	A review of sustainable livestock strategies to deal with anti-livestock activists <i>M. Dehghani and K.H. Park</i>	557
45.19	AuthenBeef: use of blockchain technology in beef production to secure authenticity and traceability <i>G. Arsenos, S. Vouraki, V. Papanikolopoulou, A. Argyriadou, V. Fotiadou, S. Minoudi, D. Karaouglanis, N. Karaïskou, P. Fortomaris and A. Triantafyllidis</i>	557
45.20	Structural equation modelling applied to multi-performance objectives in French suckler cattle farms <i>L. Billaudet, I. Veissier, J.J. Minviel and P. Veyssset</i>	558
45.21	Systemic enablers and barriers to extending the productive life of Swiss dairy cows <i>A. Bieber, R. Home, M. Rödiger, R. Eppenstein and M. Walkenhorst</i>	558
45.22	Providing outdoor access to pigs: what are the profiles of farmers working in those systems? <i>S.B. Brajon, C.T. Tallet, E.M. Merlot and V.L. Lollivier</i>	559
45.23	The explosion of sustainability indicators in the European livestock sector <i>B. Van Der Veecken, M. Carozzi, C. Barzola Iza and F. Accatino</i>	559
45.24	Pig farmers' and citizens' opinions on outdoor access for livestock <i>S.B. Brajon, C.T. Tallet, E.M. Merlot and V.L. Lollivier</i>	560
45.25	Short food supply chains and food safety issues: HACCP utilization, opportunities and limits <i>R. Rafiq, O. Boutou, M.P. Ellies-Oury and B. Grossiord</i>	560
45.26	Feeding strategy in organic farming as a lever to improve various quality dimensions of pork <i>C. Van Baelen, L. Montagne, S. Ferchaud, A. Prunier and B. Lebret</i>	561

- 45.27 Body reserve dynamics using metabolites and hormones profiles of Romane ewes in two farming systems 561
A. Nyamiel, D. Hazard, D. Marcon, F. Tortereau, C. Durand, A. Tesnière and E. González-García

Session 46.

Innovation in ruminant nutrition and feeding

Room: Bellecour 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Stergiadis / Alvarez Rodriguez

Theatre Session 46	Book of Abstracts page
8:30 Inclusion of macroalgae in high forage beef cattle diets <i>S.A. Terry, T.W. Coates, R.J. Gruninger, D.W. Abbott and K.A. Beauchemin</i>	562
8:45 Rumen protected potassium gluconate increases average daily gain of beef <i>A. Santos, J.G.H.E. Bergman, J.A. Manzano and M. Hall</i>	562
9:00 Impact of additives and forage levels on performance and enteric methane emissions of Nellore bulls <i>E. Magnani, T.H. Silva, L.B. Tosetti, A. Berndt, E.M. Paula, P.R. Leme and R.H. Branco</i>	563
9:15 Differences in digestive traits of young bulls fed contrasted diets and diverging in feed efficiency <i>M. Coppa, C. Martin, A. Bes, L. Ragionieri, F. Ravanetti, P. Lund, G. Cantalapiedra-Hijar and P. Nozière</i>	563
9:30 Effect of solid feed intake on feeding behaviour and energy metabolism in growing calves <i>E. Labussiere, L. Montagne, Y. Le Cozler, C. Martineau and D. Bastien</i>	564
9:45 Effects of dietary inclusion of willow leaves on feed intake and methane emission in sheep <i>J.J. Thompson, S. Stergiadis, O. Cristobal-Carballo, T. Yan, S. Huws and K. Theodoridou</i>	564
10:00 Effect of supplementing Omega-3 rich oil on ruminal fermentation and dietary digestibility in lambs <i>O. Cristobal-Carballo, F. Godoy-Santos, S. Huws, S. Morrison, A. Aubry, E. Lewis and T. Yan</i>	565
10:15 Coffee break	
10:45 Essential oils and integral diets to optimize rumen function and decrease methanogenesis in lambs <i>N. Ghallabi, G. Gonzalo, A. Garcia, O. Catalán, P. Romero, M. Hassan, A.I. Martín-García, D.R. Yáñez-Ruiz and A. Belanche</i>	565
11:00 Novel water based delivery of seaweed extracts to improve the sustainability of ruminant production <i>A. Casey, T. Boland, Z. McKay and S. Vigors</i>	566
11:15 Supplementation of Ca gluconate improves fertility and time to peak milk yield in dairy cattle <i>D.J. Seymour, M.V. Sanz-Fernandez, J.B. Daniel, J. Martin-Tereso and J. Doelman</i>	566
11:30 DFM supplementation during the gestation and dry periods on postpartum performance in dairy cows <i>O. Ramirez-Garzon, D.G. Barber, J. Alawneh, L. Huanle and M. Soust</i>	567
11:45 <i>In vivo</i> evaluation of tannins and essential oils mixtures as additives for dairy cows <i>G. Foggi, L. Turini, F. Dohme-Meier, A. Muenger, L. Eggenschwiler, J. Berard, G. Conte, A. Buccioni and M. Mele</i>	567
12:00 Palmitic to oleic ratio in fat supplement influenced the digestibility and production of dairy cows <i>J. Shpirer, L. Lifshitz, H. Kamer, Y. Portnick and U. Moallem</i>	568
12:15 Xylooligosaccharides and enzyme increased milk yield and reduced methane emissions of Jersey cows <i>L.F. Dong and Q.Y. Diao</i>	568
12:30 Defatted black soldier fly larvae meal as substitute of soybean meal in Kenyan dairy cow rations <i>D.J.M. Braamhaar, D.J. List, S.J. Oosting, D. Korir, C.M. Tanga and W.F. Pellikaan</i>	569
12:45 Classifying lipogenic and glucogenic diets in dairy cows based on metabolomics profiles <i>X. Wang, S. Jahagirdar, W. Bakker, C. Lute, B. Kemp, E. Saccenti and A.T.M. Van Knegsel</i>	569

46.17	Comparative study of digestibility of safflower varieties <i>M. Besharati, N. Khoshnam and D. Azhir</i>	570
46.18	Effect of different levels of propolis, nitrate, thyme and mint essential oil on digestibility <i>M. Besharati and M. Mousavi</i>	570
46.19	Combination of lactic acid bacteria inoculant in difficult to ensile grass after 15 days of ensiling <i>M. Duvnjak, L. Dunière, B. Andrieu, E. Chevaux and C. Villot</i>	571
46.20	Effect of whey on <i>in vitro</i> ruminal methane formation and digestibility in cows <i>H. Luisier-Sutter, L. Isele, M. Terranova, S.L. Amelchanka and M. Schick</i>	571
46.21	Ellagic acid and gallic acid reduced methane and ammonia in an <i>in vitro</i> rumen fermentation model <i>M. Manoni, S. Amelchanka, M. Terranova, L. Pinotti, P. Silacci and M. Tretola</i>	572
46.22	Effect of toasted soybean on dairy cows milk performances <i>A. Berchoux, M. Duval, E. Hermant, M. Legris and M. Jouffroy</i>	572
46.23	The addition of dry ice as an attempt to inhibit proteolysis during ensilage of lucerne <i>M. Borsuk-Stanulewicz, C. Purwin and M. Mazur-Kuśnerek</i>	573
46.24	<i>In vitro</i> effects of <i>Bacillus subtilis</i> CH201 and <i>Bacillus licheniformis</i> CH200 on rumen microbiota <i>R. Gresse, G. Copani, B.I. Cappellozza, A. Torrent, D. Macheboeuf, E. Forano and V. Niderkorn</i>	573
46.25	Effect of nitrate and its interaction with starch levels on methane production in continuous culture <i>Y. Roman-Garcia, S. El-Haddad, S. Van Zijderveld and G. Schroeder</i>	574
46.26	Effect of garlic processing method on <i>in vitro</i> methane production and rumen fermentation <i>N.F. Sari, S. Stergiadis, P.P. Ray, C. Rymer, L.A. Crompton and K.E. Kliem</i>	574
46.27	Effects of Red Sorghum and <i>Rhizoma paridis</i> on rumen protozoa, fermentation characteristics <i>in vitro</i> <i>R. Yi, S. Vigors, L. Ma, J.C. Xu and D.P. Bu</i>	575
46.28	Phytochemicals can modify the rumen fermentation profile as monensin <i>L. Gonzalez, A.C. Dall-Orsoletta, D. Mattiauda, A. Daudet, T. Garcia, P. Chilibroste, A. Meikle, M. Arturo-Schaan, A. Casal and M.A. Bruni</i>	575
46.29	<i>In vitro</i> fermentation of TMR using rumen fluids from cows supplemented with hemp and savory leaves <i>S. Arango, S. Massaro, S. Schiavon, N. Guzzo, M. Montanari, L. Bailoni and F. Tagliapietra</i>	576
46.30	<i>Bacillus licheniformis</i> and <i>B. subtilis</i> on <i>in vitro</i> ruminal parameters and greenhouse gas emission <i>B.R. Amancio, E. Magnani, T.H. Silva, A.L. Lourenço, B.I. Cappellozza, R.H. Branco and E.M. Paula</i>	576
46.31	Bioproduct from royal palm colonized by <i>Lentinula edodes</i> on <i>in vitro</i> ruminal fermentation <i>B.M. Rocha, R.L. Savio, G.S. Camargo, K.E. Loregian, A.R. Cagliari, A.C. Casagrande, F. Rigon, E. Magnani, T.G. Timm, L.B.B. Tavares, M.I. Marcondes, T.H. Silva, R.H. Branco, E.M. Paula and P.D.B. Benedeti</i>	577
46.32	<i>Enterococcus faecium</i> and <i>Saccharomyces cerevisiae</i> on <i>in vitro</i> rumen parameters and greenhouse gases <i>B.R. Amancio, T.H. Silva, G.M. Wachekowski, H. Reolon, T.G. Timm, B.I. Cappellozza, E. Magnani, E.M. Paula and R.H. Branco</i>	577
46.33	Rumen protected calcium gluconate improves milk production of cows <i>J.G.H.E. Bergman, B. Skibba and M. Hall</i>	578
46.34	Rumen protected calcium gluconate improves lactational performance <i>J.G.H.E. Bergman, F. Morisset and M. Hall</i>	578
46.35	Increase milk production by preserving the nutritional value of the dairy ration <i>L.L.C. Jansen, J.G.H.E. Bergman and S.J.A. Van Kuijk</i>	579

46.36	VistaPre-T, a crude fermentation extract to support the sustainable use of forages in dairy rations <i>V. Blanvillain, E. Bungenstab and G. Gomes</i>	579
46.37	Early lactation trial with a blend of fat encapsulated vitamin B <i>A.D.G. Esselink and C. Gordon</i>	580
46.38	The effect of a blend of fat encapsulated vitamin B on milk production of highly productive cows <i>M. Hall and C. Gordon</i>	580
46.39	Evaluation of milk performances and enteric methane emissions on by-products feed base <i>A. Berchoux, M. Jouffroy, A. Laflotte and R. Boré</i>	581
46.40	Supplementing lambs with plant extract supplement enhances growth and improve feed conversion ratio <i>V. Ballard and P.H. Pomport</i>	581
46.41	Effects of <i>Artemisia annua</i> residue on rumen microorganisms and antioxidant function of mutton sheep <i>S.S. Wang, C.F. Peng, Y.R. Shao, M.M. Bai, Y.H. Zhang, M. Zhang, X. Xiong and H.N. Liu</i>	582
46.42	Nutrient rich novel feed supplements for grazing lambs <i>A.S. Chaudhry</i>	582
46.43	The order of distribution of two forages affects daily intake and diet composition in dairy goats <i>R. Delagarde, J. Belz and B. Bluet</i>	583
46.44	Feeding frequency has no effect on intake and milk production in dairy goats fed on fresh herbage <i>R. Delagarde, J. Belz and B. Bluet</i>	583
46.45	Effects of dietary energy on late-gestation metabolism in prolific ewes <i>M. Plante-Dubé, C. Sylvestre, R. Bourassa, P. Luimes, S. Buczinski, F. Castonguay and R. Gervais</i>	584
46.46	The effect of feeding with hemp seeds addition on physicochemical and sensory properties of beef <i>P. Pogorzelska-Przybyłek, C. Purwin, M. Modzelewska-Kapituła, M. Borsuk-Stanulewicz and K. Tkacz</i>	584
46.47	Association of feed efficiency with growth and slaughtering performance in Nellore cattle <i>S.F.M. Bonilha, J.A. Muñoz, B.R. Amâncio, J.N.S.G. Cyrillo, R.H. Branco, R.C. Canesin and M.E.Z. Mercadante</i>	585
46.48	Effects of dietary nitrate on performance and enteric methane production in Hanwoo steers <i>R. Bharanidharan, P. Xaysana, R. Ibdhi, J. Lee, B.M. Tomple, J. Oh, M. Baik and K.H. Kim</i>	585
46.49	Impact of additives and forage levels on nutrients digestibility and sorting index of Nellore bulls <i>E. Magnani, T.H. Silva, L.B. Tosetti, E.M. Paula, P.R. Leme and R.H. Branco</i>	586
46.50	Feed efficiency traits calculated at post-weaning and pre-slaughter periods in Nellore cattle <i>S.F.M. Bonilha, J.A. Muñoz, B.R. Amâncio, J.N.S.G. Cyrillo, R.H. Branco, R.C. Canesin and M.E.Z. Mercadante</i>	586
46.51	Environmental protection study on replacing alfalfa with sesbania for feeding ruminants <i>L.Y. Wang and Y.J. Tian</i>	587
46.52	Multi performance analysis of soybean self-consumption on a mixed crop-livestock farm <i>M. Jouffroy, A. Berchoux, M. Duval, M. Weens, E. Hermant and M. Legris</i>	587
46.53	Effects of leaf size and harvesting season on nutritive quality of white clover <i>X. Chen, K. Theodoridou, O. Cristobal-Carballo and T. Yan</i>	588
46.54	Image analysis of feed boluses collected from cows after ingestive chewing <i>B. Delord, M. Berger, R. Baumont, P. Nozière, A. Le Morvan, F. Guillon and M.F. Devaux</i>	588

Session 47. One-health, one nutrition, one Earth: role of nutrition in livestock production

Room: Gratte Ciel 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Latifa / Weill

Theatre Session 47		Book of Abstracts page
8:30	A documented example of the One Health concept <i>invited</i> P. Weill, N. Kerhoas and B. Schmitt	589
9:00	Dietary lipid supplements affect milk composition and butter properties in dairy cows M. Landry, Y. Lebeuf, M. Blouin, F. Huot, J. Chamberland, G. Brisson, D.E. Santschi, É. Paquet, D.E. Rico, P.Y. Chouinard and R. Gervais	589
9:15	Decreasing GHG footprint while improving nutrition value in ruminant product: a new challenge S. Mendowski, G. Chesneau, G. Mairesse and N. Kerhoas	590
9:30	Effect of dietary protein source and <i>Saccharina latissima</i> on milk fatty acids profiles and bromoform B. Wang, S. Ormston, N. Platosz, J.K. Parker, N. Qin, D. Humphries, Á. Pétursdóttir, A. Halmemies-Beauchet-Filleau, D. Juniper and S. Stergiadis	590
9:45	Human health markers improvements in clinical trials when animal feed is the only variable N. Kerhoas, P. Weill and B. Schmitt	591
10:00	The impact of combination of Inulin fibre with the 4 major PAHs present in meat on colorectal cancer L. Abdennebi-Najar, M. Zaoui, N. Ferrand, L. Louadj and M. Sabbah	591
10:15 Coffee break		
10:45	Animal feeding strategy: a move towards giving strategic direction to East African countries H. Makkar, K. Agyemang, D. Balikowa, A. Sebsibe and R. Mondry	592
11:00	Macrominerals and trace elements in retail milk: their variation and nutritional implications <i>invited</i> S. Stergiadis, E.E. Newton, S. Beauclercq, J. Clarke, N. Desnica and Á. Pétursdóttir	592
11:30	Effect of a spice feed additive on behaviour, saliva composition, and ruminal pH in fattening bulls C. Omphalius, J.-F. Gabarrou, G. Desrousseaux and S. Julliard	593
11:45	Role of niacin in regulating intestinal health in piglets H.B. Yi	593
12:00	Effect of maternal nutrition on thymus development in Wagyu (Japanese Black) foetus O. Phomvisith, S. Muroya and T. Gotoh	594
Poster Session 47		Book of Abstracts page
47.12	<i>Bacillus</i> sp. strains protect the intestinal barrier from oxidative stress and deoxynivalenol G. Copani, B.I. Cappellozza and E.J. Boll	594
47.13	Production and carcass characteristics of growing-fattening rabbits under three feeding phases V.C. Resconi, M. López, J.L. Olleta, J. Romero and M.M. Campo	595
47.14	Niacin improves intestinal health through up-regulation of AQP's expression induced by GPR109A X. Yang, Y. Qiu, S. Liu and Z. Jiang	595

Room: Bellecour 3

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Stadnicka / Meda

Theatre Session 48		Book of Abstracts page
8:30	How can poultry farming systems evolve to meet the major societal and environmental challenges? <i>invited</i> P. Thobe and P. Van Horne	596
9:00	Can we enhance environmental impact without compromising bird welfare in broiler systems? <i>invited</i> I. Kyriazakis	596
9:30	What is the impact of the farming system on the quality of the chicken breast meat? J. Albechaalany, S. Yilmaz, M.P. Ellies-Oury, M. Bourin, Y. Guyot, J. Saracco, J.F. Hocquette and C. Berri	597
9:45	Improving broiler wellbeing and micro-climate through PLF application S. Druyan, N. Barchilon and I. Halachmi	597
10:00	Effects of heat stress and spirulina on productive performances of two slow growth broiler strains E.A. Fernandes, C.F. Martins, D.F.P. Carvalho, L.L. Martins, A. Raymundo, M. Lordelo and A.M. And Almeida	598
10:15 Coffee break		
10:45	Evaluating services provided by free-range poultry systems <i>invited</i> G. Chiron	598
11:15	Biosecurity gaps in 7 major poultry producers (breeder and layer farms) in EU: a farmers perspective A. Amalraj, H. Van Meirhaeghe, R. Souillard, A. Zbikowski and J. Dewulf	599
11:30	Reducing environmental impact of broiler production: the role of crude protein and soybean meal T. De Rauglaudre, B. Méda, S. Fontaine, W. Lambert and M.P. Létourneau Montminy	599
11:45	Elevated platforms for broilers on commercial farms: usage and effects on health and performance J. Stracke, F. May, J. Müsse, N. Kemper and B. Spindler	600
12:00	Mutation effects as key driver of maintaining genetic variation for long-term selection in broilers B.S. Sosa-Madrid, N. Ibañez-Escriche, G. Maniatis and A. Kranis	600
12:15	Early interventions during incubation and impact on a muscle of locomotory relevance in broilers T. Kettrukat, A. Dankowiakowska, M. Mangan, E. Grochowska, K. Stadnicka and M. Therkildsen	601
12:30	Summary of the posters in session 48 by the chairs B. Méda and K. Stadnicka	601
Poster Session 48		Book of Abstracts page
48.13	Effect of gallic acid supplementation to corn-soybean-gluten meal-based diet in broilers performance J.H. Song, C.B. Lim, S. Biswas, Q.Q. Zhang, J.S. Yoo and I.H. Kim	602
48.14	Veterinary coaching to stimulate biosecurity compliance A. Amalraj, H. Van Meirhaeghe, M. De Gussem and J. Dewulf	602
48.15	Establishing elevated perforated platforms in broiler chicken housing – is hygiene a barrier? B. Sake, J. Müsse, F. May, J. Stracke, N. Kemper, J. Schulz and B. Spindler	603
48.16	What's going on outside? Use of winter gardens by rearing hens of different genetics A. Riedel, N. Kemper and B. Spindler	603

48.17	Metabolomic analysis reveal the molecular mechanism related to leg disease in broilers <i>J. Zheng, G. Zhang, Q. Li and G. Zhao</i>	604
48.18	Housing conditions do not influence the effects of a nutritional challenge for broilers <i>V. Michel, C. Deschamps, N. Regrain, E. Devillard and J. Consuegra</i>	604
48.19	Compliance of biosecurity in poultry farms in France: remaining obstacles and levers for improvement <i>N. Rousset, A. Battaglia, J. Puterflam, J. Marguerie, R. Souillard, S. Le Bouquin-Leneveu and A.-C. Lefort</i>	605
48.20	Untrimmed beaks in turkey hens: Effect on injuries and mortality rate <i>M. Kramer, K. Skiba, P. Niewind, F. Von Rüden, N. Kemper and B. Spindler</i>	605
48.21	Habitat affects egg characteristics of Libyan local pigeon (domestic vs feral pigeon) <i>F. Akraim, M.F. Idrees and M.M. Sghieyer</i>	606
48.22	Effects of heat stress and spirulina on meat traits of two slow growth broiler strains <i>E.A. Fernandes, J.R. Sales, L.L. Martins, M. Lordelo, A. Raymundo and A.M. And Almeida</i>	606
48.23	How does broiler range use impact forage intake, outdoor excretion and gaseous emissions? <i>C. Bonnefous, B. Méda, K. Germain, L. Ravon, T. De Rauglaudre, J. Collet, S. Mignon-Grasteau, M. Reverchon, C. Berri, E. Le Bihan-Duval and A. Collin</i>	607
48.24	Heritability of the number of crossovers as proxy of recombination rate in chicken <i>V. Riggio, E. Tarsani and A. Kranis</i>	607
48.25	The potential of early warning system at health issues in poultry by sound <i>I. Halachmi, T. Lev-Ron, Y. Yitzhaky and S. Druyan</i>	608
48.26	Pre-slaughter fasting changes the <i>ante mortem</i> muscle proteolysis levels and <i>post mortem</i> meat quality <i>S. Katsumata, M. Kamegawa, A. Katafuchi, A. Ohtsuka and D. Ijiri</i>	608

Session 49.

Monoguthealth – Part 1

Room: Gratte Ciel 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Bee / Trevisi

Theatre Session 49	Book of Abstracts page
8:30 invited Host-microbiota interactions in swine and poultry: disentangling causes and effects <i>J.F. Pérez</i>	609
9:00 Glutamine and glucose metabolism in suckling low birth weight piglets supplemented with glutamine <i>D. De Leonardis, Q.L. Sciascia, S. Goers, A. Vernunft and C.C. Metges</i>	609
9:15 Creep feeding (dry, liquid) and pen hygiene (low, high) impacts pre-weaning growth in pigs <i>S.R. Vasa, G.E. Gardiner, K. O'Driscoll, G. Bee and P.G. Lawlor</i>	610
9:30 The impact of early incubation temperature on broiler walking ability and final meat quality <i>T. Kettrukat and M. Therkildsen</i>	610
9:45 <i>In vitro</i> and <i>in vivo</i> analysis of bioactive substances growth and antioxidant activities <i>M. Mangan, C. Metges and M. Siwek</i>	611
10:00 Prophybiotics, a novel approach for <i>in ovo</i> gut microbiome reprogramming of broilers <i>R.N. Wishna-Kadawarage, R. Hickey and M. Siwek</i>	611
10:15 Coffee break	
10:45 Antibacterial plant blends modulate gut microbiota in organic piglets challenged with <i>E. coli</i> F18 <i>K. Jerez-Bogota, M. Jensen, O. Højberg and N. Canibe</i>	612

11:00	Role of caecal microbiota in flock weight heterogeneity <i>M.Z. Akram, E.A. Sureda, L. Comer and N. Everaert</i>	612
11:15	¹ H-NMR metabolomics reveals alterations in the metabolism of ascarid-infected laying hens <i>O.J. Oladosu, B.S.B. Correia, B. Graf, D. Liebhart, C.C. Metges, H.C. Bertram and G. Daş</i>	613
11:30	Validated machine-learning model to detect IUGR piglets <i>R. Ruggeri, G. Bee, P. Trevisi and C. Ollagnier</i>	613
11:45	<i>In vivo</i> validation of a non-invasive tool to collect intestinal content in pigs – CapSa- <i>I. García Viñado, F. Correa, P. Trevisi, G. Bee and C. Ollagnier</i>	614
12:00	Effect of creep feeding (liquid milk, dry and liquid diet) on pig growth and intestinal structure <i>E.A. Arnaud, G.E. Gardiner, M. Chombart, J.V. O'Doherty, T. Sweeney and P.G. Lawlor</i>	614
12:15	<i>In vitro</i> anthelmintic evaluation of Greek oregano against <i>Ascaridia galli</i> <i>I. Pouloupoulou, E. Sarrou, E. Martinidou, L. Palmieri, D. Masuero, S. Martens and M. Gaulty</i>	615

Session 50.

Insect genetics and reproduction

Room: Tête D'or 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Sandrock / Maya

	Theatre Session 50	Book of Abstracts page
8:30	Genetic diversity and improvement of the black soldier fly <i>C.D. Jiggins and T. Generalovic</i>	615
	invited	
9:00	Selection for larval weight in the black soldier fly – empirical evidence <i>K. Shrestha, E. Facchini, E. Van Den Boer, P. Junes, G. Sader, K. Peeters and E. Schmitt</i>	616
9:15	Full-sib group records as a practical alternative to individual records in insect breeding <i>L.S. Hansen, A.C. Bouwman, H.M. Nielsen, G. Sahana and E.D. Ellen</i>	616
9:30	Simulating breeding programs based on mass selection in black soldier fly (<i>Hermetia illucens</i>) <i>M. Slagboom, H.M. Nielsen, M. Kargo, M. Henryon and L.S. Hansen</i>	617
9:45	Effects of artificial selection in the black soldier fly – a Pool-seq approach <i>E. Facchini, A. Vereijken, D. Bickhart, A. Michenet, K. Shrestha and K. Peeters</i>	617
10:00	Adaptive responses of black soldier fly to simple low-quality diets <i>A. Gligorescu and J.G. Sørensen</i>	618
10:15	Coffee break	
10:45	Molecular sexing of black soldier flies <i>R.S.C. Rikkers, E. Van Der Valk, A.A.C. De Wit, L. Kruijt, E.D. Ellen, J. Van Den Heuvel and B.A. Pannebakker</i>	618
11:00	Biomarker discovery for the black soldier fly (<i>Hermetia illucens</i>) <i>E.M. Espinoza</i>	619
11:15	Improving black soldier fly genetics by CRISPR/Cas9 gene editing <i>I.N.Y. Nevo Yassaf, A.G. Goren, R.A. Adler and I.A. Alyagor</i>	619
11:30	Expected response to selection on larval size and development time in the housefly (<i>Musca domestica</i>) <i>H.M. Nielsen, T.N. Kristensen, G. Sahana, S.F. Laursen, S. Bahrndorff, J.G. Sørensen and L.S. Hansen</i>	620
11:45	ŸnFABRE: design of reference populations for genomic selection in <i>Tenebrio molitor</i> <i>E. Sellem, A. Donkpegan, Q. Li, K. Paul, A. Masseron, F. Gagnepain-Germain, K. Labadie, B. Vacherie, P. Garrabos, M.A. Madoui and T. Lefebvre</i>	620

12:00	The potential of instrumental insemination for honeybee breeding <i>M. Du, R. Bernstein and A. Hoppe</i>	621
12:15	Genetic analysis of production and behavioural traits of French honeybees <i>T. Kistler, C. Kouchner, C. Dumas, R. Dupain, A. Vignal, F. Mondet, P. Jourdan, B. Basso and F. Phocas</i>	621
12:30	SIMplyBee: R package for simulating honeybee populations and breeding programs <i>J. Obšteter, L.K. Strachan, J. Bubnič, J. Prešern and G. Gorjanc</i>	622
12:45	Demonstrating the principles of genetic inheritance in honeybees using SIMplyBee <i>L. Strachan, J. Bubnič, G. Petersen, G. Gorjanc and J. Obšteter</i>	622

Poster Session 50

Book of Abstracts page

50.16	Exploring the potential for artificial selection in the black soldier fly, <i>Hermetia illucens</i> <i>T. Generalovic and C. Jiggins</i>	623
50.17	Weight of <i>Hermetia illucens</i> eggs from breeding and wild individuals <i>J. Lisiecka, Z. Mikołajczak, M. Dudek, K. Dudek, B. Kierończyk and D. Józefiak</i>	623
50.18	Paternity assignment tool in honey bees (<i>Apis mellifera</i>) <i>S. Andonov, G. Aleksovski, B. Dahle, M. Kovačić, A. Marinič, A. Moškrič, J. Prešern, B. Pavlov, Z. Puškadija and A. Uzunov</i>	624
50.19	Single-step genomic BLUP allows for the genetic evaluation of commercial honeybee queens <i>G.E.L. Petersen, F.S. Hely, M. Araujo, P.F. Fennessy and P.K. Dearden</i>	624
50.20	Deformed wing virus quantification: effect of selection and correlation with varroa related traits <i>M.G. De Iorio, S. Ottati, G. Molinatto, D. Bosco and G. Minozzi</i>	625
50.21	Monitoring the distribution of <i>Apis mellifera</i> genetic resources in Italy using mtDNA information <i>V. Taurisano, A. Ribani, K.E. Johnson, D. Sami, G. Schiavo, S. Bovo, V.J. Utzeri and L. Fontanesi</i>	625

Session 51. Leveraging the microbiome for resilience and sustainability in ruminant production – insights from H2020 HoloRuminant

Room: Tête D'or 1

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Kenny / Morgavi

Theatre Session 51

Book of Abstracts page

8:30	How does the cow's microbiome respond to physiological challenges? invited <i>J. Seifert</i>	626
9:15	Upper respiratory tract microbiota of dairy calves experimentally challenged with BRSV <i>S. O'Donoghue, B. Earley, M.S. McCabe, D. Johnston, K. Ní Dhufhaigh, S.L. Cosby, D.W. Morris and S.M. Waters</i>	626
9:30	Differential effects of <i>Ostertagia ostertagi</i> vaccination and infection on the rumen microbiome <i>J. Lima, T.N. McNeilly, P. Steele, M. Martínez-Álvaro, M.D. Auffret, R.J. Dewhurst, M. Watson and R. Roehe</i>	627
9:45	Novel ruminal microbiome solutions to reducing enteric methane emissions invited <i>T.A. McAllister, L.L. Guan and R.I. Mackie</i>	627
10:30	Coffee break	
11:00	Relationship between feed efficiency and rumen microbiota in feedlot bulls fed contrasting diets <i>A. Ortiz-Chura, M. Popova, G. Cantalapiedra-Hijar and D. Morgavi</i>	628

11:15	Establishment and evolution of ruminotypes of lactating Lacaune ewes <i>T. Blanchard, C. Marie-Etancelin, Y. Farizon, C. Allain and A. Meynadier</i>	628
11:30	Effect of colostrum source and calf breed on diarrhoea incidents in pre-weaned dairy calves <i>S. Scully, P.E. Smith, B. Earley, C. McAloon and S.M. Waters</i>	629
11:45	Metagenome strain deconvolution and abundance estimation enabled by low-error long-read DNA sequence <i>invited D. Bickhart, M. Kolmogorov, E. Tseng, P. Pevzner and T. Smith</i>	629
12:30	Stakeholders views regarding new practices to control microbiomes <i>F. Bedoin, A. Ait-Sidhoum, E. Vanbergue, A. Stygar, T. Latvala, Á. MacKen-walsh, S. Waters, P. Smith and J.K. Niemi</i>	630
Poster Session 51		Book of Abstracts page
51.10	Temporal establishment of the colon microbiota in angus calves from birth to post-weaning <i>M. Stafford, P. Smith, S. Waters, F. Buckley, E. O'Hara and D. Kenny</i>	630
51.11	Preliminary study of faecal microbiota in a selection experiment for birth weight variability in mice <i>L. El-Ouazizi El-Kahia, N. Formoso-Rafferty, J.P. Gutiérrez, C. Esteban Blanco, J.J. Arranz and I. Cervantes</i>	631
51.12	The effects of crude protein levels on rumen microbiome and CH ₄ of the fattening Hanwoo steers <i>H. Kim, H. Cho, S. Jeong, K. Kang, S. Jeon, M. Lee, H. Kang, S. Lee, S. Seo and J. Seo</i>	631
51.13	Rumen metabolites of periparturient cows varying in SARA susceptibility modify fermentation <i>in vitro</i> <i>H. Yang, S. Heirbaut, J. Jeyanathan, X.P. Jing, N. De Neve, L. Vandaele and V. Fievez</i>	632
51.14	Prevalence of resistant <i>E. coli</i> and their transmission among dairy cattle in Swiss tie stalls <i>B. Köchle, V. Bernier Gosselin and J. Becker</i>	632
51.15	Stability of a <i>Bacillus</i> -based DFM following preparation of a milk replacer and premix <i>G. Copani, A. Segura, N. Milora, M. Schjelde and B.I. Cappelozza</i>	633
51.16	Effects of a <i>Bacillus</i> -based direct-fed microbial on performance and digestibility of lactating cows <i>M. Terré, N. Prat, D. Sabrià and B. Cappelozza</i>	633
51.17	Stability of a <i>Bacillus</i> -based direct-fed microbial post-palletisation under different temperatures <i>B. Cappelozza, C. Galschiet and G. Copani</i>	634
51.18	Microbial signals in peripheral blood mononuclear cells of Australian Angus cattle <i>P. Alexandre, A. Wilson, T. Legrand, R. Farr, S. Denman and A. Reverter</i>	634
51.19	Metabarcoding of milk, faeces and ruminal fluid of Sarda ewes fed with Alfalfa (<i>Medicago sativa</i>) <i>A. Vanzin, D. Giannuzzi, G. Zardinoni, A. Cecchinato, N. Macciotta, F. Correddu, A. Atzori, S. Carta, A. Ledda, S. Schiavon, L. Gallo and S. Pegolo</i>	635
51.20	An experimental approach for assessing causal microbes in early life diarrhoea in lambs <i>L. Voland, D. Graviou, K. Vazeille, A. Ortiz-Chura, D.P. Morgavi and M. Popova</i>	635
51.21	Mycotoxin-deactivating feed additive supplementation in dairy cows fed <i>Fusarium</i> -contaminated diet <i>A. Catellani, Y. Han, V. Bisutti, F. Ghilardelli, F. Fumagalli, E. Trevisi, A. Ceccinato, H. Swamy, S. Van Kuijk and A. Gallo</i>	636
51.22	Effects of 3-NOP on enteric methane production in growing beef cattle offered a forage based diet <i>S.F. Kirwan, L.F.M. Tamassia, N.D. Walker, A. Karagiannis, M. Kindermann and S.M. Waters</i>	636

Session 52. Nitrogen management in the dairy supply chain and other tools to improve the efficiency and sustainability of cattle farming

Room: Gratte Ciel 3

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Righi / Tsiplakou

Theatre Session 52		Book of Abstracts page
8:30	COWFICIENCY project: a field attempt to increase nitrogen use efficiency of dairy cattle <i>A. Foskolos, A. Plomaritou, M.E. Hanlon and D. Kantas</i>	637
	invited	
9:00	Dairy heifers intake capacity: are estimated values still correct? <i>J. Jurquet, Y. Le Cozler, D. Tremblais, F. Launay and L. Delaby</i>	637
9:15	Current status of feed nitrogen use efficiency in dairy replacement heifers in Greece <i>A. Plomaritou, M.E. Hanlon, K. Gatsas, S. Athanasiadis, K. Droumtsekas, D. Kantas and A. Foskolos</i>	638
9:30	Impact of feed-grade and slow-release ureas on dairy cattle performance and nitrogen efficiency <i>M. Simoni, G. Fernandez-Turren, F. Righi, M. Rodríguez-Prado and S. Calsamiglia</i>	638
9:45	Current nitrogen status and management of dairy farms in Greece <i>M.E. Hanlon, A. Plomaritou, E. Tsiplakou, I. Vakondios, T. Michou, D. Kantas and A. Foskolos</i>	639
10:00	Dairy cattle holistic nutritional management for reduced nitrogen pollution <i>A. Foskolos, A. Plomaritou, M.E. Hanlon and D. Kantas</i>	639
10:15 Coffee break		
10:45	Manure management practices of dairy farms in Greece <i>L. Makridis, D. Vouzaras, D. Kantas and A. Foskolos</i>	640
11:00	peNDF modulates chewing activity, rumen fermentation, plasma metabolites, performance in dairy cow <i>Y.C. Cao, L.M. Wang and J.H. Yao</i>	640
11:15	Impact on milk production of feeding organic acids during pre and post-partum period <i>L. Jansen and C. Gordon</i>	641
11:30	Peptide profile as fingerprinting of the ripening period of Alpine Asiago cheese <i>S. Segato, S. Khazzar, G. Galaverna, A. Caligiani, G. Riuzzi, L. Serva, F. Gottardo and G. Cozzi</i>	641
11:45	Producing sustainable milk in agroecology with Normande breed and grassland in Normandy <i>B. Rouillé, F. Lepeltier and L. Morin</i>	642
12:00	Hepatic metabolome of grazing dairy cows with or without feed restriction during early lactation <i>M. Carriquiry, M. García-Roche, A.L. Astessiano, D. Custodio, G. Ortega and P. Chilibroste</i>	642
12:15	Nitrogen balance of lactating cows from herds fed hay-based diets in Northern Italy <i>T. Danese, M. Simoni, R.G. Pitino, G. Mantovani, M.C. Sabetti, F. Righi and M.E. Van Amburgh</i>	643
12:30	Assessing sward managements on nitrogen fixation from a white clover high sugar grass mixture <i>M. Verbeeck, C. Segura, A. Louro-Lopez, N. Loick, P. De-Meo-Filho, S. Pulley, J. Hood, B.A. Griffith, L.M. Cardenas and D. Enriquez-Hidalgo</i>	643
12:45	Amino acid intake of hay-based diets and the relationship with milk production and urea content <i>M. Simoni, R. Pitino, T. Danese, G. Mantovani, E. Tsiplakou and F. Righi</i>	644
Poster Session 52		Book of Abstracts page
52.16	Does acidification affect urinary creatinine in dairy cattle? <i>T. Danese, M.C. Sabetti, M. Simoni, R.G. Pitino, G. Mantovani and F. Righi</i>	644

Session 53.

PLF for health and welfare – Part 1

Room: Roseraie 3

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Maselyne / Calderon Diaz

Theatre Session 53		Book of Abstracts page
8:30	Evaluation of three measuring methods for the ammonia concentration for practical use in pig houses <i>J. Witt, J. Krieter, K. Schröder and I. Czycholl</i>	645
8:45	The information and communication technologies in livestock production – expectations and concerns <i>S. Opalinski, K. Olejnik, E. Popiela, A. Jankowska-Makosa, D. Konkol, M. Korczynski, D. Knecht, R. Kupczynski, I. Tikasz and T. Banhazi</i>	646
9:00	Implementation of a deep learning based system for monitoring farrowing in sows <i>M. Wutke, C. Lensches, A. Holzhauser, M.A. Lieboldt and I. Traulsen</i>	646
9:15	Who's biting? Detecting pig screams for identifying tail biting events <i>P. Hesecker, T. Bergmann, M. Scheumann, S. Ammer, I. Traulsen, N. Kemper and J. Probst</i>	647
9:30	Veterinarians' perceptions of using PLF technologies in pig husbandry in the Netherlands and Germany <i>M.F. Giersberg and F.L.B. Meijboom</i>	647
9:45	Automatic detection and quantification of ear biting in pigs <i>A. Odo, R. Muns, L. Boyle and I. Kyriazakis</i>	648
10:00	Installation modified carbon felt in pig house to control airborne pathogenic microorganisms <i>X.D. Zhao, F. Qi, H. Li and Z.X. Shi</i>	648
10:15 Coffee break		
11:45	Benefit of caliper use at insemination on different genetic types: impact on farrowing performances <i>C. Teixeira Costa, C. Chevance, T. Nicolazo, G. Boulbria, V. Normand, J. Jeusselin and A. Lebret</i>	649
12:00	Combined effect of genetics, gut microbiota and environment on vaccine responses and welfare in hens <i>A. Lecoeur, F. Blanc, D. Gourichon, N. Meme, T. Burlot, V. Guesdon, V. Ferreira, L. Calandreau, L. Warin, F. Calenge and M.H. Pinard Van-Der-Laan</i>	649
12:15	Using triaxial accelerometers to monitor peripartum behaviour of Purebred Spanish mares <i>M.J. García García, F. Maroto Molina, C.C. Pérez Marín and D.C. Pérez Marín</i>	650
12:30	Relationships between direct and indirect genetic effects of RFI and feeding behaviour traits <i>M. Piles, M. Mora, M. Pascual and J.P. Sánchez</i>	650
12:45	Audio-based event detection and health monitoring in poultry <i>F. Hakansson and D.B. Jensen</i>	651
Poster Session 53		Book of Abstracts page
53.13	First approach of using sows' water consumption data to detect the onset of farrowing <i>J. Probst, N. Volkmann, C. Lensches, P. Hesecker, G. Thimm, M. Lieboldt, I. Traulsen and N. Kemper</i>	651
53.14	Social network analysis of cattle and horses inferred from sensor ear tag (SET) and GPS based data <i>U. Heikkilä, K. Ueda, N. Gobbo Oliveira Erünlü, M. Baumgartner, M. Cockburn, I. Bachmann, M. Roig-Pons and S. Rieder</i>	652

Session 54. Life Green Sheep and Farm management to adapt goat and sheep farming to climate change: solutions and experiments

Room: Roseraie 2

Date: Wednesday 30 August 2023; 8:30 – 13:00

Chair: Throude / Satzori

Theatre Session 54		Book of Abstracts page
8:30	Modelling adaptation strategies to climate change in Mediterranean small ruminant systems <i>A. Lurette, S. Lobón, F. Douhard, M. Blanco-Alibes, D. Martin-Collado, A. Madrid, M. Curtil-Dit-Galin and F. Stark</i>	652
8:45	Feed365: Early findings for sheep grazing novel year-round forage systems <i>C.E. Payne, D. Real, A. Loi and C. Revell</i>	653
9:00	Quantifying responses to hot conditions in divergent sheep breeds in South Africa <i>S. Cloete, S. Steyn, J. Van Zyl and T. Brand</i>	653
9:15	Impacts of heat peaks in France on the performances of dairy goats housed in an insulated roof shed <i>K. Boissard, A. Fatet, M. Lambert, P. Sales and H. Caillat</i>	654
9:30	Cortisol level in sheep wool underwent to three different pasture management <i>L. Turini, A. Ripamonti, A. Silvi, E. Giua, A. Mantino, G. Conte, F. Bonelli and M. Mele</i>	654
9:45	How sheep sectors do face environmental, social and economic issues in French Pyrenees region? <i>A.-L. Jacquot, P.-G. Marnet and Y. Le Cozler</i>	655
10:00	Aligning carbon footprint estimates from different tools across Europe <i>A.S. Atzori, O. Del Hierro, B. Lyubov, R. Vial, C. Buckley, M.G. Serra, M. Habeanu, R. Ruiz, L. Lanzoni, M. Acciaro, T. Keady and S. Troude</i>	655
10:15 Coffee break		
10:45	Determining carbon footprint of sheep farms in Europe: first results of the LIFE Green Sheep project <i>S. Throude, M. Acciaro, A. Atzori, R. Ruiz, O. Del Hierro, C. Buckley, L. Bragina, T.W.J. Keady, C. Dragomir, M.A. Gras and J.B. Dollé</i>	656
11:00	Greenhouse gas emission intensity of milk production in three Slovenian goat breeds <i>M. Bizjak, Ž. Pečnik and M. Simčič</i>	656
11:15	No difference in PAC methane emission corrected for milk yield in three Norwegian dairy goat farms <i>J.H. Jakobsen, T. Blichfeldt, K. Dodds and J.C. McEwan</i>	657
11:30	Sustainability of Irish sheep production <i>C. Buckley, L. Bragina and T. Keady</i>	657
11:45	Should animal welfare indicators be integrated into the environmental impact assessment of farms? <i>L. Lanzoni, L. Whatford, K. Waxenberg, R. Ramsey, R.M. Rees, J. Bell, E. Dalla Costa, S. Throude, A.S. Atzori and G. Vignola</i>	658
12:00	Testing mitigation actions to reduce GHG emissions from sheep farming in Europe <i>S. Throude, M. Acciaro, A. Atzori, R. Ruiz, O. Del Hierro, C. Buckley, L. Bragina, T.W.J. Keady, C. Dragomir, M.A. Gras and J.B. Dollé</i>	658
12:15	The effect of forage type on methane production from hill bred lambs grazing alternative forages <i>M. Dolan, T. Boland, N. Claffey, F. McGovern and F. Campion</i>	659
Poster Session 54		Book of Abstracts page
54.15	Preliminary results of the LIFE Green Sheep project in Italy <i>M. Acciaro, M. Decandia, M.G. Serra, S. Picconi, V. Giovanetti, A. Atzori, D. Usai and S. Throude</i>	659

54.16	Carbon footprint assessment of a Pecorino cheese produced in central Italy <i>L. Lanzoni, L. Di Paolo, S. Abbate, M. Giammarco, M. Chincarini, I. Fusaro, A. Atzori, D. Di Battista, S. Throude and G. Vignola</i>	660
54.17	Grass management to adapt goat farming to climate change in western France <i>J. Jost, M.-G. Garnier, L. Robin, M. Proust, M. Bourasseau, R. Lesne, A. Villette, V. Tardif, T. Soulard, O. Subileau and O. Prodhomme</i>	660
54.18	Positive effects of grazing mulberry trees in summer on dairy goats' milk and cheese <i>C. Boyer, H. Le Chenadec, F. Noël, A. Stocchetti, J. Jost, A. Pommaret, S. Fressinaud and R. Delagarde</i>	661
54.19	Effects of heat stress and forage quality on feed intake and milk production of Sarda dairy ewes <i>M. Sini, F. Fulghesu, A. Ledda, A.S. Atzori and A. Cannas</i>	661
54.20	Seasonal rainfall patterns modify summer energy balance and nutritional condition of grazing sheep <i>Y. Yoshihara, B. Chojjilsuren, T. Kinugasa and M. Shinoda</i>	662
54.21	Effect of the inclusion of rumen-protected amino acids in the diet of high production dairy sheep <i>A. Cabezas, D. Martinez Del Olmo, J. Mateos, J. Matilla, M.T. Díaz, R. Bermejo-Poza, J. De La Fuente and V. Jimeno</i>	662

Session 55.

Breeding for climate change – adaptation

Room: Prestige Gratte Ciel

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Sell-Kubiak / Pszczola

	Theatre Session 55	Book of Abstracts page
15:00	Reaction norm model analysis for heat stress tolerance of growth performance in purebred pigs <i>Y. Fukuzawa, S. Ogawa, T. Okamura, N. Nishio, K. Ishii, K. Tashima, K. Akachi, H. Takahashi and M. Satoh</i>	663
15:15	Investigating the slick gene and its effects on heat stress in New Zealand grazing dairy cattle <i>G.M. Worth, E.G. Donkersloot, L.R. McNaughton, S.R. Davis and R.J. Spelman</i>	663
15:30	Use of sensors for the detection and genetic evaluation of heat stress in dairy cattle <i>P. Lemal, M.-N. Tran, M. Schroyen and N. Gengler</i>	664
15:45	Evaluation of heat stress effects on production traits and somatic cell score of Dutch Holstein cows <i>J. Vandenplas, M.L. Van Pelt and H. Mulder</i>	664
16:00	Multi-omics and multi-tissues data to improve knowledge of heat stress acclimation mechanisms <i>G. Huau, D. Renaudeau, J.L. Gourdine, J. Fleury, J. Riquet and L. Liaubet</i>	665
16:15	Should we consider fertility when improving thermotolerance in dairy cattle? <i>M.J. Carabaño, C. Díaz and M. Ramón</i>	665
16:30	Trade-off between fertility and production in French dairy cattle in the context of climate change <i>A. Vinet, S. Mattalia, R. Vallee, A. Barbat, C. Bertrand, B.C.D. Cuyabano and D. Boichard</i>	666
16:45	Coffee break	
17:15	Genetic analyses of resilience indicator traits in German Holstein, Fleckvieh and Brown Swiss <i>F. Keßler, R. Wellmann, M. Chagunda and J. Bennewitz</i>	666
17:30	Estimating the heritability of nitrogen and carbon isotopes in the tail hair of beef cattle <i>M. Moradi, C. Warburton and L.F.P. Silva</i>	667
17:45	Changes in genetic correlations over generations due to selection and random drift <i>B.C.D. Cuyabano, S. Aguerre and S. Mattalia</i>	667

18:00	Longitudinal study of environmental effects for American Angus beef cattle over 30 years <i>G. Rovere, B.C.D. Cuyabano, B. Makanjuola and C. Gondro</i>	668
18:15	Characterization of environmental impact of 13,000 French dairy farms <i>R. Vial, A. Stocchetti, M. Mevel and C. Brocas</i>	668

Poster Session 55

Book of Abstracts page

55.13	Plateau-linear regression analysis of farrowing records on temperature data for pigs reared in Japan <i>S. Ogawa, T. Okamura, Y. Fukuzawa, M. Nishio, K. Ishii, M. Kimata, M. Tomiyama and M. Satoh</i>	669
55.14	Genetic parameter of heat tolerance for reproductive traits in Landrace, Large White and Duroc pigs <i>T. Okamura, Y. Fukuzawa, M. Nishio, S. Ogawa, K. Ishii, H. Takahashi, K. Tashima, K. Akachi and M. Satoh</i>	669
55.15	Breeding soundness evaluation of bulls in extensive systems in interior centre and south of Portugal <i>J. Várzea Rodrigues, L. Pinto De Andrade, S. Dias, J. Carvalho and M. Martins</i>	670
55.16	Transcriptome analysis identifies genes affected by heat stress in hen uterovaginal junction <i>S. Kubota, P. Pasri, S. Okrathok, O. Jantasaeng, S. Rakngam, P. Mermillod and S. Khempaka</i>	670

Session 56. Establishing breeding programs in extensive systems (including developing regions) with climate change in mind

Room: Foyer Amphitheatre Rhone

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Leroy / Berg

Theatre Session 56

Book of Abstracts page

15:00	Establishing and scaling up breeding programs: a challenging, but not impossible task <i>M. Wurzinger</i>	671
15:30	Development of a breeding programme for oysters <i>P. Haffray, R. Morvezen, F. Enez, L. Dégremont and P. Boudry</i>	671
16:00	Status of implementation of EU animal breeding legislation for endangered breeds <i>H. Göderz, L. Balzar, J. Wider, C. Danchin, M. Spoelstra, M. Schoon and S. Hiemstra</i>	672
16:15	Spatial modelling improves genetic evaluation of Tanzanian smallholder crossbred dairy cattle <i>I. Houaga, R. Mrode, M. Okeyo, J. Ojango, Z. Nziku, A. Nguluma, A. Djikeng, E. Lavrenčič, G. Gorjanc and I. Pocrnic</i>	672
16:30	Genetic parameters for grazing behaviour traits of Boutsko sheep <i>S. Vouraki, V. Papanikolopoulou, A. Argyriadou, V. Fotiadou, V. Tsartsianidou, A. Triantafyllidis, G. Banos and G. Arsenos</i>	673
16:45	Coffee break	
17:15	Research and development innovations for climate-smart beef production in subtropical countries <i>M.M. Scholtz, G.M. Pyoos, M.L. Makgahlela, M.C. Chadyiwa, M.D. MacNeil, M.M. Seshoka and F.W.C. Nesper</i>	673
17:30	Genetic and environmental factors influencing skin traits of South African farmed ostriches <i>K.R. Nmutandani, A. Engelbrecht, S.W.P. Cloete, K. Dzama and O. Tada</i>	674
17:45	Genomic signatures of adaptive response driven by transhumant pastoralism in native Boutsko sheep <i>V. Tsartsianidou, S. Vouraki, P. Papanikolopoulou, G. Arsenos and A. Triantafyllidis</i>	674
18:00	An Australian sheep genomic reference to meet the evolving breeding objectives of industry <i>S.F. Walkom, D.J. Brown and J.H.J. Van Der Werf</i>	675

Poster Session 56		Book of Abstracts page
56.10	Evaluation of the perceptions of the functions of local breeds of domestic ruminants in Mayotte <i>J. Vuattoux, A. Lauvie, A. Giraud, E. Ozarak, J. Janelle, A. Rozier, T.T.S. Siqueira, M. Naves and E. Tillard</i>	675
56.11	Signature of selection in South African Dexter cattle reveal resistance genes and genetic variations <i>E.D. Cason, J.B. Van Wyk, P.D. Vermeulen and F.W.C. Nesper</i>	676
56.12	Breed environment interaction and suitability of Dutch cattle breeds for low input systems <i>J.J. Windig, G. Bonekamp, M.A. Schoon, A.H. Hoving and S.J. Hiemstra</i>	676
56.13	Identification of candidate gene variants for the alpaca Suri phenotype by WGS analysis <i>S. Pallotti, D. Pediconi, M. Picciolini, M. Antonini, V. Napolioni and C. Renieri</i>	677

Session 57. Grassland management and grassland-based feeding systems for efficient and sustainable milk and meat production

Room: Foyer Amphitheatre Parc

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Berard / Probo

Theatre Session 57		Book of Abstracts page
15:00	Extensive permanent grasslands in Europe: multifaceted functions, threats and prospects <i>M. Bassignana</i>	677
15:15	The effect of establishment and grazing management on clover and herb establishment and persistence <i>L. McGrane, N. McHugh, T.M. Boland and P. Creighton</i>	678
15:30	Strategic concentrate supplementation in reducing slaughter age in pasture-based dairy-beef systems <i>J. O'Driscoll, D. Purfield, N. McHugh and N. Byrne</i>	678
15:45	Morphology and body composition of beef-on-dairy heifers along compensatory growth itinerary <i>I. Morel, A. Dieudonné, R. Siegenthaler, C. Xavier and S. Lerch</i>	679
16:00	In France, a new beef × dairy calf to steer production for the out-of-home consumers <i>M.A. Brasseur, C. Fossaert, F. Guy, J.J. Bertron, T. Dechaux and S. Brouard</i>	679
16:15	Behavioural and welfare responses of dairy cows learning a virtual fencing system <i>P. Fuchs, J. Stachowicz, M. Schneider, M. Probo, R. Bruckmaier and C. Umstätter</i>	680
16:30	Age does not affect the learning capacity of virtually fenced cows <i>A. Confessore, C. Aquilani, P. Fuchs, C. Pugliese, C.M. Pauler, M. Schneider, G. Argenti and M. Probo</i>	680
16:45	Coffee break	
17:15	Integrating multiple data streams and models to inform precision grazing management in the U.S <i>J.R. Brennan, H. Menendez and K. Ehlert</i>	681
17:30	Yearly monitoring of soil ingestion by dairy cows in a grassland system with feed supply <i>C. Collas, A. Laflotte, C. Feidt and S. Jurjanz</i>	681
17:45	Pre-grazing sward height affects enteric methane emission during grazing <i>L. Koning, G. Holshof, A. Klop and C.W. Klootwijk</i>	682

18:00	Forage shortage affects performances, CH ₄ emissions and cheese quality in grass- or corn-fed cows <i>M. Bouchon, I. Verdier-Metz, M. Eugene, C. Bord, B. Martin, J. Bloor, M.C. Michalski, B. Graulet and C. Delbès</i>	682
18:15	Variability of economic and GHG performance in dairy-beef systems at different stocking rates <i>M. Kearney, E. O'Riordan, J. Breen, R. Dunne, P. French and P. Crosson</i>	683

Poster Session 57

Book of Abstracts page

57.13	Feeding behaviour, methane emission and digestibility of crossbred heifers along compensatory growth <i>B. Hayoz, I. Morel, A. Dieudonné, M. Rothacher, R. Siegenthaler, F. Dohme-Meier and S. Lerch</i>	683
57.14	Involving farmers in the development of a grassland monitoring tool: sunshine's co-design approach <i>D.M. Mathy, C.L. Lucau-Danila, Y.C. Curnel, E.R. Reding, K.D. Dichou and S.L. Lagneaux</i>	684
57.15	Effects of increasing portion of grass-silage in dairy cow diet on carbon footprint of raw milk <i>S. Hietala, A. Vanhatalo, K. Kuoppala, T. Kokkonen, A. Reinikainen, K. Timonen and A.-L. Välimaa</i>	684
57.16	Blood metabolite, hormone and $\delta^{13}\text{C}$ turnover kinetic during compensatory growth of crossbred heifers <i>S. Lerch, P. Silacci, G. Cantalapiedra-Hijar, R. Siegenthaler, S. Dubois, A. Delavaud, M. Bonnet and I. Morel</i>	685
57.17	Metabolic assessment of parasite dilution and forage niche sharing in sheep/cattle mixed-grazing <i>F. Joly, P. Nozière, P. Jacquiet, S. Prache and B. Dumont</i>	685
57.18	Effects of different additives on the correlation between fermentation characteristics of wilted rye <i>Y.F. Li, L.L. Wang, Y.S. Yu, H.J. Kim and J.G. Kim</i>	686
57.19	Bite item selection by grazing suckler cows in multi-species grasslands <i>C. Siede, W. Pohlmann, A. Juch, D. Hamidi, J. Isselstein and M. Komainda</i>	686
57.20	Nutritional value of intramuscular fat of the muscle of Arouquesa weaners from different systems <i>L. Sacarrão-Birrento, C.A. Venâncio, A.M. De Almeida, L.M. Ferreira, M.J. Gomes, J.C. Almeida, J.A. Silva and S.P. Alves</i>	687
57.21	Prediction of nutritional parameters of naturalized grassland in the dry zone of Chile using NIRS <i>P.M. Toro-Mujica</i>	687
57.22	Effect of cutting length on fermentation dynamics of wilted Italian ryegrass silage <i>J. Kim, Y. Li, L. Waang, Y. Yu and H. Kim</i>	688
57.23	Grazing behaviour of energy-limited dairy cows and development of detection method by deep learning <i>Y. Shinoda, S. Asakuma, Y. Ueda, S. Tada and K. Sudo</i>	688
57.24	Evaluation of 3 equations based on grass height measurement for estimating grass stocks in pastures <i>F. Lessire, J.-L. Hornick and I. Dufrasne</i>	689
57.25	Breeding of native breeds as a chance for the development of livestock households in ecological sys <i>P. Radomski and P. Moskala</i>	689
57.26	Conceptual model for the analysis of energy allocation of cow-calf farms native grassland-based <i>V. Figueroa, I. Paparamborda, S. Scarlato and P. Soca</i>	690
57.27	Do botanically diverse pastures effect the meat eating quality of lamb? <i>S. Woodmartin, P. Creighton, T.M. Boland, E. Crofton, A. Monaghan and F. McGovern</i>	690
57.28	Altering milking frequency from 14 to ten milking's per week: effects on milk production of pasture <i>E. Kennedy, K. McCarthy, J.P. Murphy and M. O'Donovan</i>	691
57.29	Robustness of suckling cows at herd level is associated with cows' productive longevity <i>L. Barreto-Mendes, A. De La Torre, S. Ingrand and F. Blanc</i>	691

Room: Tête D'or Lounge

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Ellies-Oury / Chriki

Theatre Session 58		Book of Abstracts page
15:00	Variability in consumer perception of meat and meat substitutes <i>E. Hocquette, J. Liu, S. Chriki, M.P. Ellies-Oury, M. Kombolo, J.H. Rezende-De-Souza, S.B. Pflanze and J.F. Hocquette</i>	692
15:15	Bibliometric analysis of scientific articles related to 'cultured meat' <i>J.F. Hocquette, D. Fournier, M.P. Ellies-Oury and S. Chriki</i>	692
15:30	Addressing the challenges of animal-free meat using plant-based tissue engineering <i>M.O.R. Yahav</i>	693
15:45	Comparing the potential of meat alternatives for a more sustainable food system <i>T. Bry-Chevalier</i>	693
16:00	IMR3G Foundation, DATAbank software to facilitate collaborative data collection for mutual benefit <i>invited R. Polkinghorne, H. Cuthbertson, A. Neveu and J. Wierzbicki</i>	694
16:30	Beef processors experience large variation in yield and quality traits on a daily basis <i>W. Pitchford and S. Miller</i>	694
16:45 Coffee break		
17:15	Introduction to plant-based, cultivated, and fermentation-made meat, eggs, and dairy <i>S. Kell</i>	695
17:30	Environmental impact of dairy alternatives: a case study of Hemp milk and other products <i>B. Queiroz Silva, J. Ferdouse and S. Smetana</i>	695
17:45	The tools of prediction of the sensory quality, the opinion of the French professionals <i>T. Fayet</i>	696
18:00	Limitations and challenges for the successful launch to market of cultured animal protein products <i>J.F. Fuentes-Pila</i>	696
18:15	Implementing advanced characterization methods and building a new reference for alt-meat development <i>M.O.R. Yahav</i>	697
Poster Session 58		Book of Abstracts page
58.12	Whey proteins as alternative supplement to FBS in C2C12 muscle cells for cultured meat production <i>T.S. Sundaram, D. Lanzoni, R. Rebutti, F. Cheli, A. Baldi and C. Giromini</i>	697
58.13	German consumers' attitudes towards cultured meat <i>A.-K. Jacobs, M.-P. Ellies-Oury, H.-W. Windhorst, J. Gickel, S. Chriki and J.-F. Hocquette</i>	698
58.14	Development of the beef eating quality management system in Poland <i>G. Pogorzelski, J. Wierzbicki, E. Pogorzelska-Nowicka, A. Jasieniak and A. Wierzbicka</i>	698

Room: Bellecour 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Dossa / Salgado

Theatre Session 59		Book of Abstracts page
15:00	Degradation of Amazonian grasslands by weeds, how to managing this situation? <i>V. Blanfort, C. Favale, S. Bazan, V. Petiot, D. Bastianelli and T. Le Bourgeois</i>	699
15:15	Analysing strategies adopted to cope the climate variability in pastoral zone of Burkina Faso <i>H.P. Yarga, A. Kiema, L. Ouedraogo and S. Ouedraogo</i>	699
15:30	How do changes in crop-livestock integration and specialisation affect farm performance in Vietnam? <i>A. Le Trouher, H. Le Thi Thanh, T. Dinh Khanh, T. Han Anh, C.-H. Moulin and M. Blanchard</i>	700
15:45	Problem of water supply in a context of climate variability in the pastoral zones of Burkina Faso <i>H.P. Yarga H Paul, S. Ouedraogo, A. Kiema and L. Ouedraogo</i>	700
16:00	Local feeding strategies allow to reduce enteric methane emission from cattle in Sahel <i>G.X. Gbenou, M.H. Assouma, C. Martin, D. Bastianelli, L. Bonnal, T. Kiendrebeogo, O. Sib, B. Bois, S. Sanogo and L.H. Dossa</i>	701
16:15	Development of a decision support tool to secure cattle production in chlordecone-contaminated areas <i>A. Fournier, C. Feidt, A. Fourcot, M. Saint-Hilaire, Y. Le Roux and G. Rychen</i>	701
16:30	Can tropical legume grass forage reduce enteric methane yield from suckler cows in the Sahel? <i>M.H. Assouma, A. Baro, G.X. Gbenou, O. Sib, S. Sanogo, H. Marichatou and E. Vall</i>	702
16:45 Coffee break		
17:15	Agroforestry: an opportunity to improve the sustainability of livestock systems in Vietnam? <i>M. Blanchard, P. Tos, A. Le Trouher, A. Lurette and H. Le Thi Thanh</i>	702
17:30	Selection signatures of the indigenous Sanga cattle of Namibia <i>D.A. Januarie, E.D. Cason and F.W.C. Nesper</i>	703
17:45	<i>Diodelle sarmentosa</i> , an invasive plant in the rangelands of the sylvopastoral zone of Senegal <i>E.H. Traore and F. Sow</i>	703
18:00	Environmental challenges in dry tropical livestock systems: GHG emissions and carbon storage balance <i>invited M.H. Assouma, D. Bastianelli and P. Salgado</i>	704
Poster Session 59		Book of Abstracts page
59.12	Resilience analysis based on heifer productive and reproductive aspects <i>V.T. Rezende, G.R.D. Rodrigues, A.H. Gameiro, M.E.Z. Mercadante, R.C. Canesin and J.N.G.S. Cyrillo.</i>	704
59.13	Impact of GreenFeed protocols on cattle visitation and methane data collection <i>M.C. Parra, M.H. Dekkers, S.A. Cullen and S.J. Meale</i>	705
59.14	Effect of production system and season on composition of retail cow milk in Greece <i>G. Papatzimos, R.A. Stergioudi, V. Papadopoulos, Z. Basdagianni, M.A. Karatzia, P. Mitlianga and E. Kasapidou</i>	705
59.15	Influence of heifer resilience on the productive performance of calves <i>G.R.D. Rodrigues, V.T. Rezende, C. Raineri, M.E.Z. Mercadante, S.F.M. Bonilha and J.N.S.G. Cyrillo</i>	706
59.16	Feed autonomy and manure's recycling of dairy sheep farming systems in Roquefort (France) <i>W. Nasri, F. Stark, N. Amposta, M. Lamarque, C. Allain, D. Portes, S. Arles, S. Parisot, C. Corniaux, P. Salgado and E. González-García</i>	706

59.17	Metabarcoding study of the microbial dynamics in cheeses as a function of milk tank temperature <i>L. Giagnoni, C. Spanu, A. Tondello, S. Deb, A. Cecchinato, P. Stevanato, M. De Noni and A. Squartini</i>	707
59.18	Adaptive integumentary traits of cattle raised in a silvopastoral system in tropical region <i>A.R. Garcia, A.N. Barreto, M.A.C. Jacintho, W. Barioni Junior, L.N. Costa, F. Luzi, J.R.M. Pezzopane, A.C.C. Bernardi and A.M.F. Pereira</i>	707
59.19	Impact of fodder quality seasonality on enteric methane emission from cattle in Sub-Saharan Africa <i>G.X. Gbenou, M.H. Assouma, C. Martin, D. Bastianelli, L. Bonnal, T. Kiendrebeogo, O. Sib, B. Bois, S. Sanogo and L.H. Dossa</i>	708

Session 60.

Minerals in animal nutrition: supplementation – Part 1

Room: Bellecour 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Alvarez Rodriguez / Windisch

	Theatre Session 60	Book of Abstracts page
15:00	Variation in mineral content of feeds for dairy cows and how that can affect ration formulation <i>W.P. Weiss</i>	708
	invited	
15:30	Evolution of nutritional explorations in herds of dairy and beef cattle between 2013 and 2021 <i>L. Reisdorffer</i>	709
15:45	Selenium supply in animal feeds, a powerful nutritional tool against cancer <i>M. López-Alonso, I. Rivas and M. Miranda</i>	709
16:00	Effect of mineral source on 48-h <i>in vitro</i> fermentation <i>G.M. Boerboom, C.B. Peterson, L. Jansen, M.M. McCarthy, J.S. Heldt and J. Johnston</i>	710
16:15	Feed phosphates market dynamics: does price influence demand? <i>G. Milochau</i>	710
16:30	Reduction of trace mineral supplementation on performance and mineral status of fattening pigs <i>E. Gourlez, J.Y. Dourmad, F. Beline, A. Monteiro, A. Boudon, A. Narcy, P. Schlegel and F. De Quelen</i>	711
16:45	Coffee break	
17:15	Optimal level of dietary zinc for pigs between 10 and 30 kg <i>T.S. Nielsen, S.V. Hansen, J.V. Nørgaard and T.A. Woyengo</i>	711
17:30	Administration of potentiated Zn and monovalent Cu in weanling piglets diet <i>L. Marchetti, R. Rebutti, P. Cremonesi, B. Castiglioni, F. Biscarini, A. Romeo and V. Bontempo</i>	712
17:45	Unexpected Cu and Zn speciation patterns in the feed-animal-excreta system <i>S. Legros, M. Tella, A.N.T.R. Monteiro, A. Forouzandeh, F. Penen, S. Durosoy and E. Doelsch</i>	712
18:00	Coarse limestone particles limit the formation of Ca-phytate complexes in laying hens <i>F. Hervo, M.-P. Létourneau-Montminy, B. Méda, M.J. Duclos and A. Narcy</i>	713
	Poster Session 60	Book of Abstracts page
60.11	The duration of efficacy of a single oral dose of selenium in sheep <i>S.E. Gallimore, E.J. Hall and N.R. Kendall</i>	713
60.12	Dietary manganese impacts on growth, carcass and reproductive traits in angus bulls <i>J.R. Russell, E.L. Lundy-Woolfolk, A.S. Cornelison, W.P. Schweer, T.M. Dohlman and D.D. Loy</i>	714
60.13	Micronutrient supplementation for suckling calves <i>M.S.V. Salles, F.J.F. Figueiroa, A. Saran Netto, C.M. Bittar, F.F. Simili and H.N. Rios</i>	714

60.14	Impacts of trace mineral source and ancillary drench on steer performance during backgrounding <i>K. Harvey, L. Rahmel, J. Cordero, B. Karisch, R. Cooke and J. Russell</i>	715
60.15	Impact of trace minerals and water/feed deprivation on performance and metabolism of grass-fed beef <i>M.J.I. Abreu, I.A. Cidrini, D. Brito De Araujo, F.D. Resende and G.R. Siqueira</i>	715
60.16	The impact of trace mineral sources of copper and zinc on performance and ruminal bacteria diversity <i>I.A. Cidrini, I.M. Ferreira, D. Brito De Araujo, G.R. Siqueira and F.D. Resende</i>	716
60.17	Are inorganic Mn sources soluble and improve rumen fermentation? <i>A. Vigh, C. Gerard and C. Panzuti</i>	716
60.18	Effect of diet type, Cu source and antagonists on rumen <i>in vitro</i> fermentation and Cu distribution <i>I. Bannister, J.A. Huntington, L.A. Sinclair, J.H. McCaughern and A.M. McKenzie</i>	717
60.19	Meta-analysis on zinc oxide's mode of action in reducing weaning stress in healthy piglets <i>C. Negrini, D. Luise, F. Correa, P. Bosi, A. Roméo and P. Trevisi</i>	717
60.20	Marine mineral complex reduces nutrient interactions and allows efficient use of Ca and P in broiler <i>M.A. Bouwhuis, R. Casserly, A. Craig, D. Currie and S. O'Connell</i>	718
60.21	Seaweeds in animal nutrition, a valuable source of minerals but in need of fine-tuning <i>S. Al-Soufi, J. García, E. Cegarra, A. Muñños, V. Pereira and M. López-Alonso</i>	718
60.22	Online mislabelling of mineral and complementary feeds available in France <i>F. Toutou, C. Marin, T. Blanchard, A. Meynadier and N. Priymenko</i>	719
60.23	Diversity of practices and advisors in mineral and vitamin supplementation of dairy farms <i>C. Manoli, G. Springer, L. Barbier, C. Chassaing, C. Sibra, G. Maxin, A. Boudon and B. Graulet</i>	719

Session 61. Resilient livestock farming systems in the face of climate and other global challenges – adaptation and mitigation

Room: Gratte Ciel 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Sturaro / Poulopoulou

	Theatre Session 61	Book of Abstracts page
15:00	How to improve resilience, from animal to system level <i>A. Mottet, R. Baumung, G. Velasco Gil, G. Leroy and B. Besbes</i>	720
	invited	
15:15	On the link between climate change mitigation and adaptation in dairy cow farming in West of France <i>B. Godoc, E. Castellan, A. Madrid and C. Karam</i>	720
15:30	Resilience of ruminant organic systems to climatic hazards: a study model in a French grassland area <i>C. Boivent and P. Veysset</i>	721
15:45	Resilgame: a game to experiment farm adaptation to climate change <i>G. Martel and S. Colombié</i>	721
16:00	Evolution of agroecology and associate indicators – looking for balance in farming systems <i>E. Benedetti Del Rio, A. Michaud and E. Sturaro</i>	722
16:15	Small ruminants farming systems of Spain: challenges and attributes for their resilience <i>J. Lizarralde, B. Soriano, A. Benhamou-Prat, P. Gaspar-García, Y. Mena-Guerrero, J.M. Mancilla-Leyton, A. Horrillo, R. Ruiz, D. Martín-Collado and N. Mandaluniz</i>	722
16:30	Building resilience in drylands' extensive livestock systems under climate uncertainty <i>A. Tenza-Peral, I. Pérez-Ibarra, A. Breceda, J. Martínez-Fernández and A. Giménez</i>	723

16:45 Coffee break

- 17:15 A thirty-year assessment of interactions between weather conditions and sheep milk yield and quality 723
A. Mantino, M. Milanese, M. Finocchi, G. Conte, G. Vignali, G. Chillemi, L. Turini and M. Mele
- 17:30 Indicators for animal health on agro-ecological dairy farms 724
A. Ceppatelli, M. Crémilleux, A. Michaud and E. Sturaro
- 17:45 Exploring climate change adaptation strategies from the perspective of Mediterranean sheep farmers 724
D. Martin-Collado, S. Lobón, M. Joy, I. Casasús, A. Mohamed-Brahmi, Y. Yagoubi, F. Stark, A. Lurette, A. Abuoul Naga, E. Salah and A. Tenza-Peral
- 18:00 Combining serious games in a process to support sustainable livestock farming systems 725
R. Etienne, S. Dernas, C. Rigolot and S. Ingrand
- 18:15 Assessing how farm features and farmers' profile contribute to farm resilience 725
A. Prat-Benhamou, B. Soriano, D. Ondé, J. Lizarralde, J.M. Mancilla-Leyton, N. Mandaluniz, P. Gaspar-García, Y. Mena-Guerrero and D. Martín-Collado

Poster Session 61**Book of Abstracts page**

- 61.13 The difference between abnormal climate and extreme climate that cause yield damage to silage corn 726
M. Kim and K. Sung
- 61.14 Causality in climate-soil-yield network for silage corn 726
M. Kim and K. Sung
- 61.15 Can studying the health of livestock systems be a way to improve their resilience? 727
M. Crémilleux, B. Martin and A. Michaud
- 61.16 Effect of heat stress on extensive beef cattle's calving percentage in the Central Bushveld Bioregio 727
S.M. Grobler, M.M. Scholtz, F.W.C. Naser, J.P.C. Greyling and L. Morey
- 61.17 Contrasting rearing and finishing regimens on performance and methane emissions of Angus steers 728
J. Clariget, V. Ciganda, G. Banchemo, D. Santander, K. Keogh, D.A. Kenny and A.K. Kelly
- 61.18 Energy and greenhouse gas emissions: tools to discuss sustainability of livestock systems in Amazon 728
D.C.C. Corrêa, R.J.M. Pocard-Chapuis, M. Lenoir, V. Blanfort, J.L. Bochu and P. Lescoat
- 61.19 Microclimate and production of a tropical forage intercropped with pigeon pea 729
J.R.M. Pezzopane, P.P.A. Oliveira, A.F. Pedrosa, W. Bonani, V.M. Gomes, C. Bosi, H.B. Brunetti, R. Pasquini Neto and A.J. Furtado
- 61.20 Reducing energy consumption to dry alfalfa using organic acids – a field trial 729
T. Fumagalli and L.L.C. Jansen
- 61.21 Carbon and energy footprint of dehydrated alfalfa production, from planting to factory output 730
D. Coulmier, P. Thiebeau, S. Recous and H. Labanca
- 61.22 Impact of heat waves on the quality of milk and lactic farmhouse goat cheeses in the Aura region 730
S. Raynaud, E. Lemée, H. Le Chenadec, C. Laithier, P. Thorey, C. Boyer, M. Legris, S. Morge, S. Anselmet, V. Bérroule, S. Fressinaud, C. Delbès, M. Brocart, N. Morardet, J. Birkner and Y. Gaüzere
- 61.23 Climate-smart practices can reduce GHG emissions intensity on smallholder dairy farms in Kenya 731
L. McNicol, M. Graham, M. Caulfield, J. Kagai, J. Gibbons, A.P. Williams, D. Chadwick and C. Arndt

Session 62.

Poultry and pig low-input and organic production systems' welfare

Room: Bellecour 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Daş / Holinger

	Theatre Session 62	Book of Abstracts page
15:00	Welfare barriers and levers for improvement in organic and low-input outdoor pig and poultry farms <i>C. Leterrier, C. Bonnefous, J. Niemi, PPILOW Consortium and A. Collin</i>	731
	invited	
15:30	Range use relationship with welfare and performance indicators in four organic broilers strains <i>C. Bonnefous, A. Collin, L.A. Guilloteau, K. Germain, S. Mignon-Grasteau, M. Reverchon, S. Mattioli, C. Castellini, V. Guesdon, L. Calandreau, C. Berri and E. Le Bihan-Duval</i>	732
15:45	Case study of a newly-developed genotype for dual-purpose rearing of male chicks <i>H. Pluschke, S. Lombard, B. Desaint, M. Reverchon, A. Roinsard, O. Tavares, A. Collin-Chenot, M. Ferriz, S. Seelig and L. Baldinger</i>	732
16:00	Poultry production: using dual-purpose genotypes to reduce the culling of day-old male chicks? <i>J. Niemi, M. Väre, A. Collin, M. Almadani, M. Quentin, L. Baldinger, S. Steinfeldt, T.B. Rodenburg, F. Tuytens and P. Thobe</i>	733
16:15	Longitudinal assessment of health indicators in four organically kept laying hen flocks <i>L. Jung, M. Krieger, L. Matoni and D. Hinrichs</i>	733
16:30	Alternative pig housing systems with high welfare standards – status quo and perspectives <i>M. Holinger</i>	734
	invited	
17:00	Coffee break	
17:30	Characterising outdoor pig systems in Ireland <i>O. Menant, S. Mullan, F. Butler, L. Boyle and K. O'Driscoll</i>	734
17:45	Animal welfare and pork quality of intact male pigs in organic farming according to genotype <i>B. Lebret, S. Ferchaud, A. Poissonnet and A. Prunier</i>	735
18:00	Large White genetics in organic system: breeding for piglet survival <i>L. Canario, S. Ferchaud, S. Moreau, C. Larzul and A. Prunier</i>	735
18:15	Comparing animal welfare assessments by researchers and free-range pig farmers with the PIGLOW app <i>E.A.M. Graat, C. Vanden Hole, S. Nauta, M.F. Giersberg, T.B. Rodenburg and F.A.M. Tuytens</i>	736

Session 63.

Monoguthealth – Part 2

Room: Gratte Ciel 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Bee / Trevisi

	Theatre Session 63	Book of Abstracts page
15:00	Growth performance and digestive tract parameters in weaned piglets fed <i>Nannochloropsis limnetica</i> <i>A.A.M. Chaves, C.F. Martins, D.F. Carvalho, A.R.J. Cabrita, M.R.G. Maia, A.J.M. Fonseca, R.J.B. Bessa, A.M. Almeida and J.P.B. Freire</i>	736
15:15	Synbiotic administration to suckling piglets on health parameters at weaning and postweaning period <i>E.A. Sureda, M. Schroyen, J. Uerlings, F. Fannes, J. Liénart, A. Sabri, P. Thonart, V. Delcenserie, J. Wavreille and N. Everaert</i>	737
15:30	Fine characterisation of a standardized citrus extract and it's effect on weaned piglet performances <i>S. Cisse, J. Laurain and M.E.A. Benarbia</i>	737

15:45	Essential oils and butyric acid effects on growth performance, blood metabolites and health in pigs <i>U. Marume and R.B. Nhara</i>	738
16:00	The impacts of a spectrum of varied lifestyle factors on the porcine gut microbiota <i>L. Comer, E. Arévalo Sureda and N. Everaert</i>	738
16:15	<i>In vitro</i> inhibition of avian pathogenic <i>Enterococcus cecorum</i> isolates by probiotic <i>Bacillus</i> strains <i>M. Bernardeau, S. Medina-Fernandez and M. Cretenet</i>	739
16:30	Effects of breed and early feeding on intestinal microbiota, gene expression and welfare indicators <i>F. Marcato, D. Schokker, S.K. Kar, J.M.J. Rebel and I.C. De Jong</i>	739

16:45 Coffee break

17:15	Yogurt Acid Whey addition affects broiler caecal microbiota composition and metabolic activity <i>I. Palamidi, V.V. Paraskeuas, I. Politis and K.C. Mountzouris</i>	740
17:30	A richer gut microbiota is related to better feed efficiency and diet adaptability in laying hens <i>M. Bernard, A. Lecoeur, J.L. Coville, N. Bruneau, D. Jarret, S. Lagarrigue, F. Calenge, G. Pascal and T. Zerjal</i>	740
17:45	Gut microbiome variations during the productive lifespan of two high-yielding laying hen strains <i>C. Roth, J. Seifert, M. Rodehutschord and A. Camarinha-Silva</i>	741
18:00	A rabbit nutrition hypothesis to prevent digestive problems: 'Feed the fusus coli' <i>K.H. De Greef and M. Van Der Sluis</i>	741
18:15	Gut microbiota of growing rabbits fed diets with different fibre and lipid contents <i>G. Zardinoni, P. Stevanato, A. Trocino, M. Birolo, F. Bordignon and G. Xiccato</i>	742

Poster Session 63

Book of Abstracts page

63.13	Gut microbiota-metabolome response to dietary porcine intestinal mucosa hydrolysate in piglets <i>S. Segarra, A. Middelkoop and F. Molist</i>	742
63.14	Effects of probiotics isolated from faeces of fast-growing pigs on growth performance of weaning pigs <i>Y.H. Choi, Y.J. Min, J.E. Kim, Y.D. Jeong, H.J. Park, C.H. Kim and S.J. Sa</i>	743
63.15	Effect of butyric acid salts on the palatability of feed for piglets <i>W. Kozera, A. Woźniakowska, K. Karpiesiuk, A. Okorski and G. Żak</i>	743
63.16	Synbiotics-glyconutrients enhance growth performance and fatty acid profile in finishing pigs <i>C.B. Lim, Q.Q. Zhang, S. Biswas, J.H. Song, O. Munezero, J.S. Yoo and I.H. Kim</i>	744
63.17	Impact of gut health product on appetite associated hormones using <i>ex vivo</i> porcine intestinal cells <i>N. Browne and K. Horgan</i>	744
63.18	Development of antimicrobial peptides against multidrug-resistant enterotoxigenic <i>Escherichia coli</i> <i>W.J. Chen, M.Y.W. Kwok, K.C. Wu, K.F. Hua, Y.H. Yu and Y.H. Cheng</i>	745
63.19	Influences of quercetin inclusion to corn-soybean-gluten meal-based diet on broiler performance <i>S. Biswas, Q.Q. Zhang, J.H. Song, C.B. Lim, I.H. Kim and J.S. Yoo</i>	745
63.20	Effects of <i>Bacillus</i> species – fermented products on growth performance and gut health in broilers <i>Y.H. Yu, S.H. Hsiao, Y.H. Cheng, W.J. Chen and K.F. Hua</i>	746
63.21	<i>Lactobacillus ingluviei</i> C37 improves gut health in lipopolysaccharide challenged broiler chickens <i>S. Khempaka, M. Sirisopapong and S. Okrathok</i>	746
63.22	Effects of different probiotics on laying performances, egg quality and gut health in laying hens <i>F. Barbe, L. Blanc, A. Sacy and E. Chevaux</i>	747

- 63.23 Simple methodology to evaluate faeces quality on farm and effect of *S. boulardii* on faecal scoring 747
A. Sacy, F. Barbé, S. Poulain, P. Belloir, C. Paes and E. Chevaux
- 63.24 A comparison of yeast gut health products ability to limit attachment of *Salmonella* to IPEC-j2 cells 748
N. Browne, A. McCormack and K. Horgan
- 63.25 Butyric acid and *Bacillus subtilis* 29784 improve cumulatively the intestinal barrier 748
A. Mellouk, D. Prévéraud, T. Goossens, O. Lemâle, E. Pinloche and J. Consuegra

Session 64.

Project session: Farmyng

Room: Tête D'or 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Kihanguila / Gasco

Theatre Session 64	Book of Abstracts page
15:00 Safety of BSF larvae reared on substrates which are spiked or naturally contaminated with aflatoxins <i>K. Niermans, E.F. Hoek- Van Den Hil, N. Meijer, S.P. Salari, M. Gold, H.J. Van Der Fels-Klerx and J.J.A. Van Loon</i>	749
15:15 Transfer of aflatoxin, lead and cadmium from larvae reared on contaminated substrate to laying hens <i>M. Heuel, M. Kreuzer, I.D.M. Gangnat, E. Frossard, C. Zurbrügg, J. Egger, B. Dortmans, M. Gold, A. Mathys, J. Jaster-Keller, S. Weigel, C. Sandrock and M. Terranova</i>	749
15:30 Determination of minimal nutrient requirements of <i>Tenebrio molitor</i> larvae <i>B. Tamim, T. Parr, J. Brameld and A. Salter</i>	750
15:45 FLAGship demonstration of industrial scale production of nutrient resources from mealworms <i>W. Kihanguila</i>	750
16:15 Tailored vitamins and minerals premix for <i>Tenebrio molitor</i> farming <i>E. Barbier, V. Gerfault, T. Lefebvre, F. Peyrichou, C. Ricciardi and N. Tanrattana</i>	751
16:30 <i>Tenebrio molitor</i> genomics revealed limited molecular diversity among available populations <i>L. Panunzi, E. Eleftheriou, B. Vacherie, K. Labadie, T. Lefebvre and M.A. Madoui</i>	751
16:45 Coffee break	
17:15 Assessing the quality of insect-derived products: methods and findings from the FARMYNG project <i>S. Gofflot, A. Pissard, F. Debode, A.C. Laplaize, B. Lorrette and J.F. Morin</i>	752
17:30 Authentication of insect-derived products: methods and findings from the FARMYNG project <i>B. Dubois, A. Marien, S. Guillet, J.-F. Morin, B. Lorrette and F. Debode</i>	752
17:45 More than an organic fertilizer: mealworm frass as a substitute to conventional fertilizers <i>E. Bohuon, D. Houben, G. Daoulas, M.-P. Faucon and A.-M. Dulaurent</i>	753
18:00 The environmental life cycle assessment of Ynsect insect based proteins <i>K. Hsu, A. Eiperle and M. Jouy</i>	753
18:15 Insects' nutrients – the Animal Frontiers special issue <i>T. Veldkamp and L. Gasco</i>	754

Session 65. Remote sensing applied to livestock farming: discovering physiological and ethological clues to optimize productive performance and animal welfare

Room: Tête D'or 1

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Montanholi

Theatre Session 65	Book of Abstracts page
15:00 Time-course change in lamb composition and reflectance properties: implications for authentication <i>L. Rey-Cadilhac, D. Andueza, A. Prunier and S. Prache</i>	754
15:15 Individual adaptive responses of meat ewes facing an abrupt nutritional challenge after lambing <i>E. González-García, M. Gindri, L. Puillet and N.C. Friggens</i>	755
15:30 Large variation in emission intensities from dual-purpose sheep production system <i>B.A. Åby, S. Samsonstuen and L. Aass</i>	755
15:45 Considering the morphology of cows for comfortable milking <i>J. Fazilleau, S. Guiocheau and J.L. Poulet</i>	756
16:00 Classification of honeybee flight activity patterns reveals impact of recruitment behaviours <i>G.E.L. Petersen, D. Gupta, P.F. Fennessy and P.K. Dearden</i>	756
16:30 Implementation of large-scale climate smart agriculture research on U.S. beef cattle grazing lands <i>K. Cammack, A. Blair, L.O. Tedeschi, H.M. Menendez Iii and J.R. Brennan</i>	757
16:45 Coffee break	
17:15 Remote monitoring behaviour of bison in captivity: effects of gender, weather and daytime <i>R.R. Vicentini, D. Moya, J. Church, A.C. Sant'anna, W. Balan, W. Squair and Y.R. Montanholi</i>	757
17:30 Artificial intelligence for measuring the respiration rate in dairy cows <i>L. Dißmann, R. Antia, L. Chinthakayala, N. Landwehr, T. Amon and G. Hoffmann</i>	758
17:45 Using millimetre-wave radar for monitoring sow postural activity in individual pen: first results <i>D. Henry, J. Bailly, T. Pasquereau, W. Hebrard, J.F. Bompa, E. Ricard, H. Aubert and L. Canario</i>	758
18:00 The environmental variance on daily feed intake as a measure of resilience in pigs <i>C. Casto-Rebollo, P. Nuñez, S. Gol, J. Reixach and N. Ibáñez-Escriche</i>	759

Poster Session 65	Book of Abstracts page
65.11 Factors affecting somatic cell count in ewe milk and its effect on milk yield and composition <i>M. Oravcová, V. Tančin, L. Mačuhová and M. Uhrinčat</i>	759

Session 66. Innovation in non-ruminant nutrition and feeding

Room: Gratte Ciel 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Alvarez Rodriguez / Stergiadis

Theatre Session 66	Book of Abstracts page
15:00 Digestibility of soybean meal vs toasted soybeans in newly weaned piglets <i>C. De Cuyper, P. Dubois and S. Millet</i>	760
15:15 Effect of variety and technological treatment on intake of lupin seed in pigs <i>E. Labussiere, H. Furbeyre, M. Guillevic and G. Chesneau</i>	760

15:30	Comparative energy values of 10 forages in finishing pigs <i>D. Renaudeau, J. Pirault, M. Dumesny, S. Lombard and F. Marie</i>	761
15:45	Implication of different amylose/amylopectin ratio on low protein diet on piglet's performance <i>P. Trevisi, D. Luise, F. Correa, S. Viridis, C. Negrini and S. Dalcanale</i>	761
16:00	Effects of two blends of phytoextracts on growth and gut health of weaning pigs to replace zinc oxide <i>D. Luise, F. Correa, C. Negrini, S. Viridis, M. Mazzoni, S. Dalcanale and P. Trevisi</i>	762
16:15	Effect of olive cake in growing pig diets on faecal microbiota fermentation and composition <i>D. Belloumi, P. García-Rebollar, P. Francino, S. Calvet, A.I. Jiménez-Belenguer, L. Piquer, O. Piquer and A. Cerisuelo</i>	762
16:30	Impact of increasing dietary sphingolipids on feed intake and growth performance of piglets <i>S. Chakroun, R. Larsen, J. Levesque, F. Cerpa Aguila, M.-P. Letourneau, J.E. Rico and D.E. Rico</i>	763

16:45 Coffee break

17:15	Faeces microbiota and metabolism correlated with reproductive capacity in early parity sow <i>J. Wang, Q. Xie and B. Tan</i>	763
17:30	Dehydrated sainfoin in rabbit feed: effects of high incorporation on the health and performances of <i>C. Gayraud, P. Gombault, A. Bretaudeau, H. Hoste and T. Gidenne</i>	764
17:45	Nutritional value of defatted larvae meal and whole larvae from black soldier fly <i>P. Belloir, F. Hervo, E. Gambier, L. Lardic, C. Guidou, C. Trespeuch, N. Mème, E. Recoules and B. Méda</i>	764

Poster Session 66

Book of Abstracts page

66.11	Diet taste monotony decreases feed acceptability and preferences in nursery pigs <i>J. Figueroa, E. Huenul, R. Palomo and D. Luna</i>	765
66.12	Dietary taste variety improves performance in nursery pigs <i>J. Figueroa, T. Cabello, E. Huenul, R. Palomo and D. Luna</i>	765
66.13	Impact of some dietary agro-industrial by-products on the gut microbiota of finishing pigs <i>I. Skoufos, A. Nelli, C. Voidarou, I. Lagkouvardos, E. Bonos, K. Fotou, C. Zacharis, I. Giannenas and A. Tzora</i>	766
66.14	Effects of Greek aromatic/medicinal plants on health and meat quality characteristics of piglets <i>G. Magklaras, C. Zacharis, K. Fotou, E. Bonos, I. Giannenas, J. Wang, L.Z. Jin, A. Tzora and I. Skoufos</i>	766
66.15	Effects of mint leaf powder on performance and egg nutrient composition of laying hens <i>Y.H. Zhang, M.M. Bai, H.N. Liu, X.F. Kong and F.C. Wan</i>	767
66.16	Weaned piglets' gut microbiota regulation by dietary olive, winery, and cheese waste by-products <i>A. Tzora, A. Nelli, A. Tsinas, E. Gouva, G. Magklaras, S. Skoufos, B. Venardou, K. Nikolaou, I. Giannenas and I. Skoufos</i>	767
66.17	Effects of medium-chain fatty acids on feed intake, body weight and egg composition of laying hens <i>F. Cerpa Aguila, S. Chakroun, M.P. Letourneau Montminy, J.E. Rico and D.E. Rico</i>	768

Session 67.

PLF for health and welfare – Part 2

Room: Roseraie 3

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Pastell / Stygar

Theatre Session 67

Book of Abstracts page

15:00	Open-sourcing behavioural algorithms for ruminant welfare monitoring using raw wearable sensor data <i>D. Foy, T.R. Smith and J.P. Reynolds</i>	768
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15:15	Evaluation of an automated cattle lameness detection system <i>N. Siachos, A. Anagnostopoulos, B.E. Griffiths, J.N. Neary, R.F. Smith and G. Oikonomou</i>	769
15:30	Breath analysis in dairy cattle: going beyond methane emission <i>I. Fodor, E. Van Erp-Van Der Kooij and I.D.E. Van Dixhoorn</i>	769
15:45	Dairy cow personality: correlations with age, weight, back fat thickness and activity <i>P. Hasenpusch, T. Wilder, A. Seidel, J. Krieter and G. Thaller</i>	770
16:00	Automatic behaviour assessment of young bulls in pen using machine vision technology <i>A. Cheype, J. Manceau, V. Gauthier, C. Dugué, L.-A. Merle, X. Boivin and C. Mindus</i>	770
16:15	Parity and lactation stage preserve a stable structure in the dynamic social networks in cattle <i>H. Marina, I. Hansson, I. Ren, F. Fikse, P.P. Nielsen and L. Rönnegård</i>	771
16:30	Application of rumen boluses to receive welfare parameters from fattening bulls <i>K. Fromm, J. Heinicke, T. Amon and G. Hoffmann</i>	771
16:45	Coffee break	
17:15	Stepwise modelling for improved bovine health <i>C.M. Matzhold, K.S. Schodl, C.E. Egger-Danner, F.S. Steininger and P.K. Klimek</i>	772
17:30	Is milking order connected to social interactions? <i>I. Hansson, H. Marina and L. Rönnegård</i>	772
17:45	Combining ultra-wideband (UWB) location and accelerometer data for cattle behaviour monitoring <i>S. Benaissa, F. Tuytens, D. Plets, L. Vandaele, L. Martens, W. Joseph and B. Sonck</i>	773
18:00	FEMIR report – the new MIR advising tool <i>L.M. Dale, A. Werner, C. Natterer, E.J.P. Strang, Emissioncow Consortium, Remissiondairy Consortium and J. Bieger</i>	773
18:15	Heat stress relief of dairy cows by evaporative cooling under Mediterranean summer conditions <i>S. Pinto, C. Ammon, F. Estellés, A. Villagra, T. Amon and G. Hoffmann</i>	774

Poster Session 67

Book of Abstracts page

67.13	Performance of subcutaneous thermochips implanted in dairy cows: preliminary report <i>A.R. Garcia, L.K. Zanetti, T.C. Alves, L.M. Neira, L.F. Pinho, A.N. Barreto, M.J. Moraes, G.G. Ramos, C.E. Grudzinski and G.N. Azevedo</i>	774
67.14	Dairy cow behaviour as proxy for heat stress sensitivity in dairy cows <i>I. Fodor, R.S.C. Rikkers, M. Taghavi and I. Adriaens</i>	775
67.15	Exploring the feeding behaviour of dairy calves: insights from automated milk feeders <i>K.J. Hemmert, M.H. Ghaffari, T. Förster, C. Koch and H. Sauerwein</i>	775
67.16	Characterization of behavioural anomalies of lameness in dairy cows using sensor technology <i>N.L. Mhlongo</i>	776
67.17	Test of Bluetooth low energy localization system for dairy cows in a barn <i>J. Maxa, D. Nicklas, J. Robert, S. Steuer and S. Thurner</i>	776
67.18	Integrating inline milk infrared spectra and genomics to predict metabolic profiling in dairy cattle <i>D. Giannuzzi, L.F. Macedo Mota, H. Toledo Alvarado, S. Pegolo, L. Gallo, S. Schiavon, E. Trevisi and A. Cecchinato</i>	777
67.19	Influence on the water intake of lactating dairy cows <i>J. Heinicke, C. Ammon, T. Amon, G. Hoffmann and S. Pinto</i>	777

Session 68. Small Ruminant Technologies (Sm@RT) and Thematic network EuroSheep

Room: Roseraie 2

Date: Wednesday 30 August 2023; 15:00 – 18:30

Chair: Morgan-Davies / Grisot

Theatre Session 68	Book of Abstracts page
15:00 Sm@RT: Identifying sheep and goats farmers' technological needs and potential solutions <i>C. Morgan-Davies, L. Depuille, J.M. Gautier, A. McLaren, T.W.J. Keady, B. McClearn, L. Grova, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar-Shamai, R. Klein, F. Kenyon and I. Llach-Martinez</i>	778
15:15 EuroSheep: increasing flock profitability through improved sheep health and nutrition management <i>P.G. Grisot, B. Fança, A. Carta, S. Salaris, C. Morgan-Davies, I. Beltran De Heredia, R. Ruiz, S. Ocak Yetisign, T.W.J. Keady, B. McClearn, R. Klein, D. Tsiokos and C. Ligda</i>	778
15:30 Sm@RT: Innovative technologies training for small ruminant producers <i>L. Depuille, J.M. Gautier, A. McLaren, T.W.J. Keady, B. McClearn, L. Grøva, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar Shamai, R. Klein, F. Kenyon, I. Llach and C. Morgan-Davies</i>	779
15:45 EuroSheep: end-users assessments of flock health and nutrition best practices <i>P.G. Grisot, B. Fança, A. Carta, S. Salaris, C. Morgan-Davies, I. Beltran De Heredia, R. Ruiz, S. Ocak yetisign, T.W.G. Keady, B. McClearn, R. Klein, L. Perucho and C. Ligda</i>	779
16:00 Sm@RT: main lessons from New Zealand on PLF uptake in small ruminants <i>J.M. Gautier, C. Morgan-Davies, L. Depuille, A. McLaren, B. McClearn, L. Grøva, P. Piirsalu, V. Giovanetti, I. Halachmi, A. Bar-Shamai, R. Klein, F. Kenyon, E. Gonzalez-Garcia and T.W.J. Keady</i>	780
16:15 French regional project SO-PERFECTS: project methodology <i>C. Douine, L. Sagot, A.S. Thudor, M. Miquel, M. Bernard, M. Goyenetche and D. Gautier</i>	780
16:30 French regional project SO-PERFECTS: trial results <i>M. Bernard, L. Sagot, A.S. Thudor, C. Douine, M. Miquel, M. Goyenetche and D. Gautier</i>	781
16:45 Coffee break	
17:15 Use of innovative and precision tools in research stations with small ruminants: the INRAE case <i>I. Llach, H. Caillat, A. Fatet, S. Breton, T. Aguirre-Lavin, D. Dubreuil, A. Eymard, J. Boucherot, T. Fassier, D. Marcon, S. Parisot, C. Durand, G. Bonnafe, D. Portes, C. Morgan-Davies and E. González-García</i>	781
17:30 FEC check: development of an online tool to aid farmer understanding of roundworm faecal egg counts <i>E. Geddes, A. Duncan, K. Lamont, J. Duncan, F. Kenyon and L. Melville</i>	782
17:45 Assessing sheep behaviour in an human-animal interaction test using infrared termography <i>M. Almeida, A. Afonso, C. Guedes and S. Silva</i>	782

Scientific programme

Thursday 31 August 2023

Session 69.

Methods & genomic prediction

Room: Prestige Gratte Ciel

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Sell-Kubiak / El-Ouazizi

Theatre Session 69	Book of Abstracts page
8:30 Detection of interchromosomal rearrangements in bulls using large genotype and phenotype datasets <i>J. Jourdain, H. Barasc, T. Faraut, C. Grohs, C. Donnadieu, A. Pinton, D. Boichard and A. Capitan</i>	783
8:45 Functional information embedded in the unmapped short reads of whole-genome sequencing <i>G.B. Neumann, P. Korkuć, M. Reißmann, M.J. Wolf, K. May, S. König and G.A. Brockmann</i>	783
9:00 Expanding the capabilities of single-step GWAS with <i>P</i> -values for large genotyped populations <i>N. Galoro Leite, M. Bermann, S. Tsuruta, I. Misztal and D. Lourenco</i>	784
9:15 The Life-Functions Ratio: a new indicator trait of trade-offs to go beyond genetic correlations <i>N. Bedere, O. Cado, N.C. Friggens and P. Le Roy</i>	784
9:30 Impact of pedigree errors on the quality of predicted genetic merit from animal models <i>E.C.G. Pimentel, C. Edel, R. Emmerling and K.-U. Götz</i>	785
9:45 Bias in estimated variance components and breeding values due to pre-correction of systematic effect <i>P. Duenk and P. Bijma</i>	785
10:00 Improving computing performance of genomic evaluations by genotype and phenotype truncation <i>F. Bussiman, C. Cheng, J. Holl, A. Legarra, I. Misztal and D. Lourenco</i>	786
10:15 Coffee break	
10:45 A single-step evaluation of functional longevity of cows including data from correlated traits <i>L.H. Maugan, T. Tribout, R. Rostellato, S. Mattalia and V. Ducrocq</i>	786
11:00 Expected values of genomic prediction validation parameters for non-random validation sets <i>M.P.L. Calus, M. Schrauf, T. Pook, L. Ayres, R. Bonifazi, J. Ten Napel and J. Vandenplas</i>	787
11:15 Unknown parent groups and metafounders in genomic evaluation of Norwegian Red cattle <i>T.K. Belay, A.B. Gjuvsland, J. Jenko, L.S. Eikje and T. Meuwissen</i>	787
11:30 Exploring non linear genetic relationships between correlated traits <i>F. Shokor, P. Croiseau, R. Saintilan, T. Mary-Huard, H. Gangloff and B.C.D. Cuyabano</i>	788
11:45 Single-Step Genomic Prediction in six German Beef Cattle Breeds <i>D. Adekale, H. Alkhoder, Z. Liu, D. Segelke and J. Tetens</i>	788
Poster Session 69	Book of Abstracts page
69.13 Incorporating QTL genotypes in the model to predict phenotypes and breeding values <i>J. Yang, T.H.E. Meuwissen, Y.C.J. Wientjes, P. Duenk and M.P.L. Calus</i>	789
69.14 Improving the efficiency of genomic evaluations with random regression models <i>A. Alvarez Munera, D. Lourenco, I. Misztal, I. Aguilar, J. Bauer, J. Šplíchal and M. Bermann</i>	789

69.15	Comparison of two software to estimate breeding value in cattle by single-step approach <i>M. Jakimowicz, D. Słomian, T. Suchocki and J. Szyda</i>	790
69.16	Estimating (co)variance components using Monte Carlo EM-REML in a multi-trait SNPBLUP model <i>H. Gao, M.H. Lidauer, M. Taskinen, E.A. Mäntysaari and I. Strandén</i>	790
69.17	Molecular phenotyping to predict neonatal maturity <i>L. Liaubet, N. Marty-Gasset, L. Gress, A. Bonnet, P. Brenaut and E. Maigné</i>	791
69.18	Comparison of genetic maps from different cattle breeds <i>X. Ding, H. Schwarzenbacher, F.R. Seefried and D. Wittenburg</i>	791
69.19	Genomic relationships across metafounders using partial EM algorithm and average relationships <i>A. Legarra, M. Bermann, Q. Mei and O.F. Christensen</i>	792
69.20	Impact of the correlation between SNP effects in different breeds on the accuracy of predictions <i>P. Croiseau, R. Saintilan, D. Boichard and B. Cuyabano</i>	792
69.21	Early prediction of lactation persistency of multiparous cows managed for extended lactation <i>C. Gaillard, M. Boutinaud, J. Sehested and J. Guinard-Flament</i>	793
69.22	Accuracy of genomic prediction by singular value decomposition of the genotype matrix <i>L. Ayres, M.P.L. Calus, J. Ødegård and T. Meuwissen</i>	793
69.23	Enhancing long-term genetic gain through a Mendelian sampling-based similarity matrix <i>A.A. Musa and N. Reinsch</i>	794
69.24	Mining the convergence behaviour of a single-step SNP-BLUP model for genomic evaluation of stature <i>D.S. Dawid Słomian, J.S. Joanna Szyda and K.Ż. Kacper Żukowski</i>	794
69.25	Increase in prediction accuracy can be achieved by combining multiple populations <i>A. Ajasa, S. Boison, H. Gjølven and M. Lillehammer</i>	795
69.26	Enhancing bovine genome SNP call accuracy with autoencoder analysis of nucleotide impact with AI <i>K. Kotlarz, M. Mielczarek, B. Guldbbrandtsen and J. Szyda</i>	795
69.27	Efficient SNP calling: Nextflow vs Bash on the whole genome bovine sequence <i>P. Hajduk, M. Sztuka, K. Liu, K. Kotlarz, M. Mielczarek and J. Szyda</i>	796
69.28	Variant calling and genotyping accuracy of ddRAD-seq: comparison with WGS in layers <i>M. Doublet, F. Lecerf, F. Degalez, S. Lagarrigue, L. Lagoutte and S. Allais</i>	796
69.29	Performing single-step genomic evaluation for superovulatory response traits in Japanese Black cows <i>A. Zoda, R. Kagawa, H. Tsukahara, R. Obinata, M. Urakawa, Y. Oono and S. Ogawa</i>	797
69.30	Production traits in Nellore cattle classified by residual feed intake <i>J.A. Muñoz, R.H. Branco, R.C. Canesin, J.N.S.G. Cyrillo, M.E.Z. Mercadante and S.F.M. Bonilha</i>	797
69.31	Effect of paternal breeding values for residual feed intake on reproductive performance of heifers <i>T. Devincenzi, M. Lema, L. Del Pino, A. Ruggia and E.A. Navajas</i>	798
69.32	Species identification of animal/pig DNA in non-animal food <i>M. Natonek-Wiśniewska and P. Krzyścin</i>	798
69.33	Development of a proxy for feed efficiency prediction in dairy cows based on mid-infrared spectra <i>M. Raemy, T. Haak, F. Schori and S. Ampuero Kragten</i>	799
69.34	Improving taste and flavour in dairy product through analysis of free fatty acid by MIR spectroscopy <i>O. Christophe, R. Reding, J. Leblois, D. Pittois, C. Guignard and F. Dehareng</i>	799
69.35	Modelling growth curves in challenged mice lines divergently selected for birth weight variability <i>V. Mora-Cuadrado, I. Cervantes, J.P. Gutiérrez and N. Formoso-Rafferty</i>	800

69.36	Genomic prediction of commercial layers' bone strength <i>M. Sallam, H. Wall, P. Wilson, B. Andersson, M. Schmutz, C. Benavides, M. Checa, E. Sanchez, A. Rodriguez, I. Dunn, A. Kindmark, D.J. De Koning and M. Johnsson</i>	800
69.37	Variability of daily milk yield during the first 100 days of lactation in Holstein cows <i>E. Kašná, L. Zavadilová and J. Vařeka</i>	801

Session 70.

Genetic parameters & GWAS

Room: Foyer Amphitheatre Rhone

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Egger-Danner / Martin

	Theatre Session 70	Book of Abstracts page
8:30	Single-step GBLUP for growth and carcass traits in Nordic beef cattle <i>A. Nazari Ghadikolaei, F. Fikse and S. Eriksson</i>	801
8:45	Genetic parameters of pig birth weight variability <i>Y. Salimiyekta, S.B. Bendtsen, K.V. Riddersholm, M. Aaskov and J. Jensen</i>	802
9:00	Disentangling paternal and maternal components of within litter birth weight variability in mice <i>N. Formoso-Rafferty, L. El-Ouazizi El-Kahia, I. Cervantes and J.P. Gutiérrez</i>	802
9:15	(Co)variances between anogenital distance and fertility in Holstein-Friesian dairy cattle <i>M.A. Stephen, C.R. Burke, N. Steele, J.E. Pryce, S. Meier, P.R. Amer, C.V.C. Phyn and D.J. Garrick</i>	803
9:30	Genetic relationships between productive and reproductive traits on Friesian cows <i>S. Abomselem, A. Badr and A. Khattab</i>	803
9:45	Heritabilities of the mid-infrared spectra of sheep milk throughout the lactation <i>C. Machefert, C. Robert-Granié, J.M. Astruc and H. Larroque</i>	804
10:00	Genetic parameters for the composition of milk fatty acid of Holsteins <i>Y. Masuda</i>	804
10:15	Coffee break	
10:45	External and genetic factors influencing fertility in Latxa dairy sheep breed <i>C. Pineda-Quiroga, I. Granado-Tajada, E. Ugarte and A. Basterra-García</i>	805
11:00	Single-step genome-wide association for milk urea concentration in Walloon Holstein <i>H. Atashi, Y. Chen, C. Bastin, S. Vanderick, X. Hubin and N. Gengler</i>	805
11:15	Genome-wide association study for milk production traits in the Cyprus Chios sheep <i>A.N. Georgiou, G. Maimaris, S. Andreou, A.C. Dimitriou and G. Hadjipavlou</i>	806
11:30	Characterization of additive, dominance, and runs of homozygosity effects inbreeds of dairy cattle <i>H. Ben Zaabza, M. Neupane, M. Jaafar, K. Srikanth, S. McKay, A. Miles, H.J. Huson, I. Strandén, H. Blackburn and C.P. Van Tassell</i>	806
11:45	A genome-wide association study identified a major QTL affecting the red colour in nitrate free hams <i>J. Vegni, M. Zappaterra, R. Davoli, R. Virgili, N. Simoncini, C. Schivazappa, A. Cilloni and P. Zambonelli</i>	807
	Poster Session 70	Book of Abstracts page
70.13	Genetic relationships between milk fatty acids at early lactation and fertility in Holstein cows <i>T. Yamazaki, A. Nishiura, S. Nakagawa, H. Abe, Y. Nakahori and Y. Masuda</i>	807
70.14	Genetic parameters for early-life racing performance in pigeons <i>P. Duenk and D. Shewmaker</i>	808

70.15	Genetic parameters for milk urea in Swiss dairy cattle breeds <i>A. Burren and S. Probst</i>	808
70.16	Estimation of genetic correlations between predicted energy balance and fertility in Holsteins <i>A. Nishiura, O. Sasaki, S. Yamaguchi, Y. Saito, R. Tatebayashi and T. Yamazaki</i>	809
70.17	Comparison of random regression test-day models for production traits of South African Jersey cattle <i>M.G. Kinghorn, E.D. Cason, V. Ducrocq and F.W.C. Nesper</i>	809
70.18	Application of single-step genomic method in routine evaluation of Czech Holstein cattle <i>J. Bauer, J. Šplíchal, D. Fulínová and E. Krupa</i>	810
70.19	A meta-analysis of the genetic parameter estimates for lamb survival <i>S. Fernandes Lazaro, H. Rojas De Oliveira and F. S. Schenkel</i>	810
70.20	Survival analysis in the conservation program of an endangered wild ungulate (<i>Nanger dama mhorri</i>) <i>S. Domínguez, I. Cervantes, E. Moreno and J.P. Gutiérrez</i>	811
70.21	Genetic parameters of maturing rate index and asymptotic adult weight in French beef cattle <i>A. Lepers, S. Aguerre, J. Promp, S. Taussat, A. Vinet, P. Martin, A. Philibert, A. Laramee and L. Griffon</i>	811
70.22	Genetic architecture of the persistency of production, quality, and efficiency traits in laying hens <i>Q. Berger, N. Bedere, P. Le-Roy, T. Burlot, S. Lagarrigue and T. Zerjal</i>	812
70.23	On the potential of improving daily milk yield by extending productive lifespan <i>A. Bieber, F. Hediger, F. Leiber, C. Pfeifer and M. Walkenhorst</i>	812
70.24	Genetic trends in a selection process using electronic feeders to improve feed efficiency in rabbit <i>J.P. Sánchez, M. Pascual and M. Piles</i>	813
70.25	Maturity, a heritable trait in French dairy goat <i>M. Arnal, M. Chassier, V. Clément and I. Palihère</i>	813
70.26	Multivariate genome-wide associations for immune traits in two maternal pig lines <i>C. Große-Brinkhaus, K. Roth, M.J. Pröll-Cornelissen, A.K. Appel, H. Henne, K. Schellander and E. Tholen</i>	814
70.27	Estimation of heritability for digital dermatitis in Polish Holstein-Friesian cows <i>M. Graczyk-Bogdanowicz, K. Baczkiewicz and K. Rzewuska</i>	814
70.28	Genetic parameters for β -hydroxybutyrate concentration in milk in Spanish dairy cows <i>I. Cervantes, M.A. Pérez-Cabal, N. Charfeddine and J.P. Gutiérrez</i>	815

Session 71.

Building on a resilient dairy sector – from animal, farm and regional perspective – Part 2

Room: Foyer Amphitheatre Parc

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Brocard / Klopčič

Theatre Session 71		Book of Abstracts page
8:30	Comparison of self-assessment and objective indicators of attributes driving farms resilience <i>D. Martin-Collado, B. Soriano, J. Lizarralde, J.M. Mancilla-Leyton, N. Mandaluniz, P. Gaspar-García, Y. Mena-Guerrero and A. Prat-Benhamou</i>	815
8:45	Inventory and analysis of needs towards resilient dairy farming in 15 EU countries <i>A.M. Menghi and C.S.S. Soffiantini</i>	816
9:00	Assessment of solutions for resilient dairy farming in fifteen European countries <i>A. Kuipers, J. Zijlstra, R. Loges and S. Ostergaard</i>	816

9:15	Knowledge needs and solutions related to resilience in the European dairy sector <i>K. Kuoppala, M. Rinne, N. Browne and V. Brocard</i>	817
9:30	Resilience of contribution to food security of specialized Walloon dairy systems <i>C. Battheu-Noirfalise, E. Froidmont, D. Stilmant and Y. Beckers</i>	817
9:45	Innovative solutions supporting resilience of dairy farms in Netherlands <i>P.J. Galama, J. Zijlstra and A. Kuipers</i>	818
10:00	Needs of the dairy sector: a Hungarian overview <i>L. Czeglédi, B. Béri, I. Komlósi and E. Török</i>	818

10:15 Coffee break

10:45	Eco-efficient low-cost pasture based dairy production on a mixed farm in Northern Germany <i>R. Loges and F. Taube</i>	819
11:00	Factors contributing to the financial resilience of spring-calving pasture-based dairy farms <i>G. Ramsbottom, B. Horan, K.M. Pierce, D.P. Berry and J.R. Roche</i>	819
11:15	Planning for resilient dairy farms in the USA <i>A. De Vries</i>	820
11:30	Towards a socially sustainable dairy sector with cow-calf contact systems <i>H.W. Neave, M. Bertelsen, E.H. Jensen and M.B. Jensen</i>	820
11:45	Resilient, healthy or efficient? The ideal animal according to breeders of small ruminants in Europe <i>E. Janodet and M. Sautier</i>	821

Poster Session 71

Book of Abstracts page

71.13	Strategies and cases of resilience from dairy farming community in Slovenia <i>M. Klopčič</i>	821
71.14	How farm management influences the longevity of dairy cows: a comparative study of Swiss dairy farms <i>R.C. Eppenstein, A. Bieber, M. Lozano-Jaramillo and M. Walkenhorst</i>	822
71.15	High herd exit rates existence of small herds: a case study from North West Province, South Africa <i>M.D. Motiang and E.C. Webb</i>	822
71.16	Building on a resilient dairy sector- highlights and discussion <i>A. Kuipers, V. Brocard and M. Klopčič</i>	823
71.17	Economic and environmental impacts of cattle longevity extension by altered reproductive management <i>R. Han, A. Kok, M. Mourits and H. Hogeveen</i>	823

Session 72. What are the stakeholder and societal expectations of intrinsic and extrinsic quality of animal products?

Room: Tête D'or Lounge

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Martin / Roehrig

Theatre Session 72

Book of Abstracts page

8:30	Economic sustainability of different levels of extensiveness in fattening pig farms <i>P. Ferrari, C. Montanari and L. Giglio</i>	824
8:45	How to characterise the European livestock production systems? <i>E. Bailly-Caumette, S. Moakes, C. Pfeifer and D.R. Yáñez-Ruiz</i>	824

9:00	The IntaQt project's stakeholders' involvement: impact on the research work? <i>F. Bedoin, C. Couzy, C. Laithier, C. Berri and B. Martin</i>	825
9:15	EU policy impacts on the sustainability of the livestock sector, insights from the PATHWAYS project <i>N. Roehrig, A. Sans, K.-E. Trier-Kreutzfeldt, M.A. Arias Escobar, F.W. Oudshoorn, N. Bolduc, E. Regnier, P.-M. Aubert and L.G. Smith</i>	825
9:30	Stakeholders' perception of pig and chicken local breeds – a broad survey by the GEroNIMO project <i>M.J. Mercat, A.J. Amaral, R. Bozzi, M. Čandek-Potokar, P. Fernandes, J. Gutierrez Vallejos, D. Karolyi, D. Laloë, Z. Luković, H. Lenoir, G. Restoux, A. Vicente, V. Ribeiro, T. Rodríguez Silva, R. Rouger, D. Škorput and M. Škrlep</i>	826
9:45	Responding to stakeholder needs and consumer-driven demands in the dairy goat and poultry sectors <i>C. Bonardi and M. Gerevini</i>	826
10:00	The INTAQT project: stakeholders' opinions on future multicriteria scoring tools for animal products <i>I. Legrand, A. Nicolazo De Barmon, F. Albert, M. Berton, M. Bourin, V. Bühl, A. Cartoni Mancinelli, R. Eppenstein, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, F. Bedoin, C. Couzy, C. Berri, B. Martin and C. Laithier</i>	827

10:15 Coffee break

10:45	Co-designing Agroecology farming concepts to increase food sovereignty in the Global South <i>M. Simataa, R. Valkenburg and H. Romijn</i>	827
11:00	Mapping of value chains in the Italian bovine sector <i>M. Finocchi, M. Moretti, A. Mantino, A. Ripamonti, G. Conte and M. Mele</i>	828
11:15	The INTAQT project: stakeholders' expectations on husbandry systems and innovative practices <i>R.C. Eppenstein, V. Bühl, I. Legrand, A. Nicolazo De Barmon, B. Martin, F. Albert, M. Berton, M. Bourin, A. Cartoni Mancinelli, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, F. Bedoin, C. Couzy, C. Berri and C. Laithier</i>	828
11:30	The INTAQT project: stakeholders' perceptions and points of view on products quality <i>C. Laithier, F. Bédoin, F. Albert, I. Legrand, A. Nicolazo De Barmon, M. Bourin, M. Berton, V. Bühl, R. Eppenstein, A. Cartoni Mancinelli, D.A. Kenny, E. Kowalski, S. McLaughlin, G. Plesch, C. Couzy, C. Berri and B. Martin</i>	829
11:45	Life cycle assessment of different pig production systems around Europe: mEATquality project <i>C. Reyes-Palomo, A. Pignagnoli, S. Sanz-Fernández, P. Meatquality Consortium and V. Rodríguez-Estévez</i>	829

Poster Session 72

Book of Abstracts page

72.13	Consumer expectations for beef in the French region Auvergne-Rhône-Alpes <i>S. Chriki, J. Normand, C. Brosse, L. Hallez, L. Vallet, V. Payet and J.F. Hocquette</i>	830
72.14	Analysis of preferences and perception of cheese products by Portuguese consumers <i>V.M. Merlino, M. Renna, M. Tarantola, A. Ricci, A.S. Santos, A. Monteiro and J. Nery</i>	830
72.15	How a risk-based strategy could contribute to a more sustainable agri-food system? <i>B. Grossiord and M.P. Ellies-Oury</i>	831
72.16	Perceptions of meat quality of UK stakeholders: from intrinsic to extrinsic factors <i>S. McLaughlin, F. Bedoin, C. Couzy, I. Legrand, A. Nicolazo De Barmon, C. Laithier and N. Scollan</i>	831
72.17	Transforming livestock practices by federating around common values <i>S. Nade</i>	832

Room: Bellecour 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Van Milgen / Geraert / Mercier

Theatre Session 73		Book of Abstracts page
8:30	Genetic response of red yeast supplementation in feed to mycotoxin contamination in laying hens <i>S. Hosseini, B. Brenig, W. Tapingkae and K. Gatphayak</i>	832
8:45	Faecal starch content as an indicator of starch digestibility by fattening Japanese Black cattle <i>M. Matamura, S. Uzawa and M. Kondo</i>	833
9:00	Impact of isoacids on performance and digestibility in gilts fed different dietary fibre sources <i>W. Schweer, B. Kerr, M. Socha, A. Cornelison and L. Rodrigues</i>	833
9:15	The enterotype is associated with the phenotype variation in the pigs treated with dietary fibre <i>H. Li and B.E. Tan</i>	834
9:30	A high rumen degradable starch modulates jejunum microbiota and bile acids in dairy goats <i>L.M. Wang, J.H. Yao and Y.C. Cao</i>	834
9:45	Development of a novel endolysin, RalLys8, for the specific inhibition of <i>Ruminococcus albus</i> <i>J. Moon, H. Kim and J. Seo</i>	835
10:00	Dietary microalgae (<i>Nannochloropsis limnetica</i>) and probiotic on performance and intestine of piglets <i>M.F. Pedro, D.F.P. Carvalho, A.M. Almeida, R.J.B. Bessa, A.J.M. Fonseca, A.R.J. Cabrita and J.P.B. Freire</i>	835
10:15 Coffee break		
10:45	Muramidase inclusion reduces gut inflammation in weaned piglets, especially in high protein diets <i>U.M. McCormack, J. Schmeisser, E. Bacou, P. Jenn, F. Amstutz and E. Perez Calvo</i>	836
11:00	Utilization of tryptophane by kynurenine, indoles and serotonin pathways are modified by fructose <i>A. Gual-Crau, M. Jarzaquet, D. Dardevet, D. Rémond, A. Lefèvre, A. Bernalier-Donadille, P. Emond and I. Savary-Auzeloux</i>	836
11:15	Regulation of glucose metabolism in rumen epithelium of cows transitioned from forage to high-grain <i>S. Kreuzer-Redmer, A. Sener, C. Pacifico, F. Dengler, S. Ricci, H. Schwartz-Zimmermann, E. Castillo-Lopez, N. Reisinger and Q. Zebeli</i>	837
11:30	Altering nutrients supply modified dynamics of milk components synthesis in dairy cows <i>J.C. Anger, C. Loncke, R. Bidaux and S. Lemosquet</i>	837
11:45	Phytogetic effects on layer performance, egg quality and cytoprotective response in the ovaries <i>I.P. Brouklogiannis, E.C. Anagnostopoulos, V.V. Paraskeuas, E. Griela, G. Kefalas and K.C. Mountzouris</i>	838
Poster Session 73		Book of Abstracts page
73.13	Phytogetic effects on layer performance, and cytoprotective response in the ceca <i>E.C. Anagnostopoulos, I.P. Brouklogiannis, V.V. Paraskeuas, E. Griela, G. Kefalas and K.C. Mountzouris</i>	838
73.14	Effects of guanidinoacetic acid supplementation on growth performance in Nellore cattle <i>O.R.M. Neto, I.M.S.C. Farias, R.N.S. Torres, R.V. Ribeiro, W.A. Baldassini, R.A. Curi, L.A.L. Chardulo and G.L. Pereira</i>	839
73.15	In feed histidine supplementation improves muscle carnosine content and meat quality in pigs <i>M. Paniagua, B. Saremi, B. Matton and S. De Smet</i>	839
73.16	Impact of functional amino acids on performance parameters in post-weaning piglet <i>A. Simongiovanni, K. Fenske, F. Witte, H. Westendarp and T. Chalvon-Demersay</i>	840

73.17	Phytobiotics from <i>Thymus</i> species in poultry feed – thymol, carvacrol and rosmarinic acid <i>M. Taghouti</i>	840
73.18	Dietary microalgae (<i>Chlorella vulgaris</i>) and probiotic on performance and intestine of piglets <i>M.F. Pedro, D.F.P. Carvalho, A.M. Almeida, R.J.B. Bessa, A.J.M. Fonseca, A.R.J. Cabrita and J.P.B. Freire</i>	841

Session 74. Balancing the feed for the economy, the environment, and society

Room: Bellecour 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: De Campeneere / Bruggeman

Theatre Session 74		Book of Abstracts page
8:30	Effects of linseed oil, a brown seaweed and seaweed extract on methane emissions in beef cattle <i>E. Roskam, D.A. Kenny, V. O'Flaherty, M. Hayes, A.K. Kelly and S.M. Waters</i>	841
8:45	Effect of whey on methane emission and systemic comparison of <i>in vivo</i> and <i>in vitro</i> methane formation <i>H. Luisier-Sutter, M. Terranova, S.L. Amelchanka, K. Schweingruber, S. Hug, K. Müller, L. Isele, K. Sommer and M. Schick</i>	842
9:00	Effects of feeding fresh white clover on digestibility and methane emission in lambs <i>X. Chen, S. Ormston, S. Stergiadis, K. Theodoridou, O. Cristobal-Carballo and T. Yan</i>	842
9:15	Algae for reducing methane from dairy cows: what expectation with French local resources? <i>B. Rouillé, H. Marfaing, F. Dufreneix, S. Point, M. Gillier, R. Boré, J. Jurquet and N. Edouard</i>	843
9:30	Managing the rumen microbiome to reduce methane emissions through dietary interventions <i>G. Pugh, O. Cristobal Carballo, T. Yan, C. Creevey and S. Huws</i>	843
9:45	Production and enteric methane emissions in grazing dairy cows fed flaxseed-based supplement <i>M.A. Rahman, K.V. Almeida, D.C. Reyes, A.L. Konopoka, M.A. Arshad and A.F. Brito</i>	844
10:00	Effect of feeding brown seaweed and its extract on methane emissions and performance in dairy cattle <i>K.D. Barnes, S. Huws, T. Yan, X. Chen, M. Hayes and K. Theodoridou</i>	844
10:15 Coffee break		
10:45	Establishing conclusive links between the gastrointestinal microbiota and feed efficiency in cattle <i>M.M. Dycus, U. Lamichhane, C.B. Welch, K.P. Feldmann, T.D. Pringle, T.R. Callaway and J.M. Lourenco</i>	845
11:00	Variations in bulk milk urea content on dairy farms in Flanders, Belgium in 2019-2021 <i>J. Vandicke, K. Goossens, Z. Lipkens, T. Vanblaere and L. Vandaele</i>	845
11:15	Impact on environment and performance of the replacement of soybean meal in post-weaning pig diets <i>E. Royer, P. Pluk, J. De Laat, G. Binnendijk, K. Goris and P. Bikker</i>	846
11:30	Simulating pig multiperformance in contrasted breeding systems using an individual-based model <i>E. Janodet, F. Garcia-Launay and H. Gilbert</i>	846
11:45	Environmental impacts of substituting soybean with rapeseed or haemoglobin meal in broiler diets <i>V. Wilke, J. Gickel, A. Abd El-Wahab and C. Visscher</i>	847
Poster Session 74		Book of Abstracts page
74.13	Manipulating dietary degradable protein and starch to increase nitrogen efficiency in dairy cows <i>P. Piantoni, Y. Roman-Garcia, C. Canale, M. Messman and G. Schroeder</i>	847
74.14	Substitution of soybean meal with canola meal in dairy cow diets: effect on enteric methane emission <i>C. Benchaar and F. Hassanat</i>	848

Room: Gratte Ciel 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Siqueira / De Olde

Theatre Session 75		Book of Abstracts page
8:30	Does better circularity in livestock require a paradigm shift? <i>invited</i> A. Mottet and M. Benoit	848
9:00	More or better to obtain sustainable food production? H.F. Olsen, H. Møller, S. Samsonstuen, M.T. Knudsen, L. Mogensen and E. Röö	849
9:15	Satisfying meat demand and avoiding excess manure nitrogen at the regional scale in China F. Accatino, Y. Li and Z. Sun	849
9:30	Role of livestock in the nutrient and carbon metabolism of the agri-food system of a tropical island M. Alvanitakis, V. Kleinpeter, M. Vigne, A. Benoist and J. Vayssières	850
9:45	State and regional nitrogen and phosphorus balances to assess manure sheds in New York State O.F. Godber, K. Workman and Q.M. Ketterings	850
10:00	Circularity in livestock production: from theory to practice <i>invited</i> E.M. De Olde, O. Van Hal, A. Groenewoud and I.J.M. De Boer	851
10:30 Coffee break		
11:00	The perspective of young farmers on circular agriculture: definition, implementation and barriers A.G. Hoogstra, H. Geerse, I.J.M. De Boer, M.K. Van Ittersum, A.G.T. Schut, C.J.A.M. Termeer and E.M. De Olde	851
11:15	Companion modelling approach for collective nitrogen management in a French municipality G. Martel, F. Garcia-Launay and V. Souchère	852
11:30	Historical transformation of crop-livestock integration and its drivers in a French region R. Pedeches, C. Aubron, S. Bainville and O. Philippon	852
11:45	Livestock: option or necessity? Changes of energy flows in an Indian village, 1950-2022 C. Hemingway, C. Aubron and M. Vigne	853
Poster Session 75		Book of Abstracts page
75.11	Developing livestock-based circularities for healthy and sustainable territories: the CLiMiT project T.T.S. Siqueira, J.-M. Sadaillan, M. Vigne, J. Veyssières, A. Benoist and M. Miralles-Bruneau	853
75.12	Co-design of a scenario of biomass valorisation within a circular approach on Reunion Island R. Youssouf, E. Cavillot, A.-L. Payet, T.T. Da Silva Siqueira and J.-P. Choisis	854
75.13	Barriers for farmers to 'sustainabilize' their farm: the example of nematode control management M. Sautier, A. Somera, R. Rostellato, P. Ly, Y. Labrunne, J.M. Astruc and P. Jacquiet	854
75.14	Benefits and limits of an organic agroforestry system associating rabbits and apple trees D. Saviotto, V. Fillon, S. Simon, E. Lhoste, M. Grillot, A. Dufils, L. Lamothe, F. Derbez, M. Fétiqueau and S. Drusch	855
75.15	INOSYS livestock farming systems network: benchmarks for advisors, trainers and policy makers P. Sarzeaud, J. Seegers, O. Dupire and T. Charroin	855
75.16	APIVALE scientific consortium: integrated approach for organic effluent recycling and valorisation F. De Quelen, E. Jarde, C. Le Marechal, T. Lendormi, S. Menasseri and F. Beline	856
75.17	Progress made in whole-farm nitrogen and phosphorus mass balances on New York dairy farms O.F. Godber, K. Workman and Q.M. Ketterings	856

- 75.18 Measuring greenhouse gas emission from pretreatment and liquid composting storage in biogas facility 857
G.W. Park, M. Ataallahi, N. Eska and K.H. Park
- 75.19 Effect of yoghurt acid whey on quality characteristics of corn silage 857
I. Palamidi, V.V. Paraskeuas, I.P. Brouklogiannis, E.C. Anagnostopoulos, I. Politis, I. Hadjigeorgiou and K.C. Mountzouris

Session 76.

Humans and horses: from One Health to One Life perspectives

Room: Bellecour 3

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Evans / Montovani

Theatre Session 76		Book of Abstracts page
8:30	How do horses perceive human emotions? <i>P. Jardat, C. Parias, F. Reigner, L. Calandreau and L. Lansade</i>	858
8:45	Sensorimotor empathy in horse-human interactions: a new way to understand inter-species performance <i>M. Leblanc, B. Huet and J. Saury</i>	858
9:00	Rethinking horse work <i>R. Evans</i>	859
9:15	Humans and equines: shared working conditions <i>V. Deneux - Le Barh and C. Lourd</i>	859
9:30	Working horses: humanities and social sciences approach <i>invited V. Deneux - Le Barh</i>	860
9:45	Web based dissemination of research to support human knowledge and understanding for horse welfare <i>A.-L. Holgersson, K. Lagerlund and G. Gröndahl</i>	860
10:00	Comparison of ethological & physiological indicators in headshakers & control horses in riding tests <i>L.M. Stange, T. Wilder, D. Siebler, J. Krieter and I. Czycholl</i>	861
10:15	Coffee break	
10:45	Relationship between hay botanical diversity and faecal bacterial diversity in horses <i>C. Omphalius, P. Grimm, V. Milojevic and S. Julliard</i>	861
11:00	Thoroughbreds in equine assisted services programmes: selection, living and working conditions <i>invited C. Neveux, S. Mullan, J. Hockenhull, J. Barker, K. Allen and M. Valenchon</i>	862
11:30	The role of gender in the worldwide Pura Raza Español equestrian sector <i>M. Ripolles, A. Encina, M. Valera and M.J. Sánchez-Guerrero</i>	862
11:45	Anthelmintic activity of chicory (<i>Cichorium intybus</i>) in grazing horses <i>J. Malsa, G. Sallé, L. Wimel, J. Auclair-Ronzaud, B. Dumont, L. Boudesocque-Delaye, F. Reigner, F. Guégnard, A. Chereau, D. Serreau and G. Fleurance</i>	863
Poster Session 76		Book of Abstracts page
76.12	Does pain condition influence the human-horse relationship? <i>L. Sobrero, M.G. Riva, M. Minero, A. Cafiso, A. Gazzonis and E. Dalla Costa</i>	863
76.13	Saliva steroidome and metabolome in mare during anoestrus, oestrus cycle and gestation <i>S. Beauclercq, C. Douet, A. Piano, L. Haddad, F. Reigner, P. Liere, L. Nadal-Desbarats and G. Goudet</i>	864

Session 77. Trade-offs between health, production and welfare in pigs and poultry: which tools do we have and which research is needed?

Room: Gratte Ciel 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Nilsson / Millet

Theatre Session 77	Book of Abstracts page
8:30 The future of genetic selection in pigs and poultry <i>invited</i> L. Verschuren and P.W. Knap	864
9:15 The future of nutrition research in pigs and poultry <i>invited</i> S. Vigers and J.V. Milgen	865
10:00 Economically sustainable and animal welfare friendly animal production: what is the role of research <i>invited</i> A. Silveira and H.A.M. Spooler	865
10:45 Coffee break	
11:15 Group discussion K. Nilsson and S. Millet	866

Session 78. Insect nutrition (substrates) & insect health

Room: Tête D'or 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Biasato / Lefebvre

Theatre Session 78	Book of Abstracts page
8:30 Farmed insects to create a circular bio-economy in the food and feed industry <i>invited</i> A. Vilcinskis	866
9:00 Amino acid requirements of mealworm and black soldier fly larvae T. Spranghers, A. Moradei and M. Boudrez	867
9:15 Evaluation of the suitability of hemp production side-streams for the rearing of edible insects A. Kolorizos, G. Baliota, C. Adamaki-Sotiraki, I. Malikentzos, C.I. Rumbos and C.G. Athanassiou	867
9:30 Dietary fat sources impact black soldier fly larvae performance R. Zheng, S. Karanjit and A. Hosseini	868
9:45 <i>Hermetia illucens</i> production parameters and the effect of dietary energy source E.Y. Gleeson and E. Pieterse	868
10:00 Starch digestion in <i>H. illucens</i> conversion: exploring the role of amylases from larvae and substrate J.B. Guillaume, S. Mezdour, F. Marion-Poll, C. Terrol, C. Brouzes and P. Schmidely	869
10:15 Coffee break	
10:45 Investigating the nutritional requirements of black soldier fly larvae using artificial substrates L. Broeckx, L. Frootinckx, A. Wuyts, S. Berrens, M. Van Peer and S. Van Miert	869
11:00 Km0 diets for black soldier fly larvae: the link between insect rearing and biogas systems S. Bellezza Oddon, I. Biasato, Z. Loiotine, A. Resconi, C. Caimi and L. Gasco	870
11:15 Sugar processing by-products for black soldier fly farming: does the rearing scale matter? I. Biasato, S. Bellezza Oddon, A. Resconi, Z. Loiotine and L. Gasco	870

11:30 Optimization of a hatchery residues fermentation process to feed black soldier fly larvae 871
M. Dallaire-Lamontagne, G.W. Vandenberg, L. Saucier and M.H. Deschamps

11:45 Fish side residues as a substrate for *Hermetia illucens* 871
M.G. Zhelezarova

Poster Session 78

Book of Abstracts page

78.12 Black soldier fly larvae production is optimized by the presence of HMTBa 872
K. Luyt, G. Crielaard, M. Briens, J.A. Conde-Aguilera and M. Ceccantini

78.13 Black soldier fly larvae production is optimized by the presence of a multi-carbohydrase 872
K. Luyt, G. Crielaard, M. Briens, J.A. Conde-Aguilera and M. Ceccantini

78.14 Effect of water-soluble complementary feed on performance in nursery of black soldier fly 873
L. Schneider, M. Brake, A. Heseke, W. Westermeier and G. Dusel

78.15 Digestibility in *H. illucens* larvae: resolving faeces collection and ingesta quantification issues 873
J.B. Guillaume, S. Mezdour, F. Marion-Poll, C. Terrol and P. Schmidely

78.16 Black soldier fly larvae as tools for the bioconversion of sludge from wastewater treatments 874
C. Ligeiro, I. Lopes, T. Ribeiro, I. Rehan, K. Silvério, M. De Fátima and D. Murta

78.17 Mediterranean agricultural by-products as insect diet ingredients: the ADVAGROMED perspective 874
C.G. Athanassiou, S. Bellezza Oddon, V. Zambotto, T. Ribeiro, R. Rosa García, A. El Yaacoubi, C. Adamaki-Sotiraki, I. Biasato, A. Resconi, D. Murta, C.I. Rumbos and L. Gasco

78.18 Multigenerational and nutritional traits of BSF reared on seaweed or selenium enriched substrates 875
M. Ottoboni, L. Ferrari, A. Moradei, F. Defilippo, P. Bonilauri and L. Pinotti

78.19 Bacterial biomass improves performance and antibacterial activity of black soldier fly larvae 875
N. N. Moghadam, K. Dam Nielsen, A. Simongiovanni and T. Chalvon-Demersay

78.20 Impact of zinc supply on black soldier fly larvae growth, bioconversion and microbiota 876
L. Frootinckx, L. Broeckx, D. Vandeweyer, C. Keil, M. Maeres and S. Van Miert

Session 79.

Improved insight into the reproductive physiology of livestock

Room: Tête D'or 1

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Kenny

Theatre Session 79

Book of Abstracts page

8:30 Review: recent outcomes associating time to PSPB increase with pregnancy loss in dairy cows 876
T. Minela, A. Santos and J.R. Pursley

9:00 Improving cow fertility by immunizing against inhibin and P4 supplementation 877
Z.D. Shi, F. Chen and R.H. Guo

9:15 Characterization of sex chromosomes-linked lncRNAs in Holstein spermatozoa under stress conditions 877
A. Yousif, G. Thaller and M. Saeed-Zidane

9:30 Inbreeding affects the freezing ability in sperm samples of Pura Raza Español stallions 878
Z. Peña, M. Valera, A. Molina, N. Laseca and S. Demyda-Peyrás

9:45 Sperm transcripts and seminal plasma metabolome reveal the regulatory mechanism of bull semen quality 878
W.L. Li and Y. Yu

10:00 Application of an oligo-based FISH method in fertility assessment of boars by chromosomal analysis 879
W. Poisson, J. Prunier, A. Bastien, A. Carrier, I. Gilbert and C. Robert

10:15 Coffee break

10:45	Artificial insemination success: a new trait for French dairy goats <i>V. Clément, A. Piacère and M. Chassier</i>	879
11:00	The male effect as an alternative to eCG in oestrus induction and synchronization treatment in ewes <i>N. Debus, G. Besche, S. Fréret, A. Hardy, M.T. Pellicer-Rubio, A. Tesniere and J.-B. Menassol</i>	880
11:15	Circulating anti-Müllerian hormone from 5-month old Merino ewe lambs predicts first birthing rates <i>J. Daly, J. Kelly, K. Kind and W. Van Wettere</i>	880

Poster Session 79

Book of Abstracts page

79.10	Impact of pinecone oil on reproductive performance, milk composition and serum parameters in sows <i>Q.Q. Zhang, J.H. Song, C.B. Lim, S. Biswas, J.S. Yoo and I.H. Kim</i>	881
79.11	Maternal <i>Forsythia suspensa</i> extract alleviated oxidative stress and improved gut health in sows <i>S. Long, Z. Chen and T. He</i>	881
79.12	Effects of PGF2 α on luteal tissue morphology, expression of relative genes in Hu sheep <i>Y.Q. Liu, Y. Li, C.H. Duan and Z.P. Song</i>	882
79.13	Relationship between some micronutrients in serum and their effect on the seminal quality of bulls <i>A. Benito-Díaz, A.S. Sarmiento-García, M. Montañes-Foz, R. Bodas-Rodríguez and J.J. García-García</i>	882
79.14	Genetic correlations on kinetic sperm parameters in a closed population of PRE stallions <i>Z. Peña, A. Molina, C. Medina, M. Valera and S. Demyda-Peyrás</i>	883
79.15	Gestation length in Braunvieh cows <i>M. Fanger, A. Burren and H. Jörg</i>	883
79.16	Distribution of adipokines in reproductive tract and embryonic annexes in hen <i>O.B. Bernardi, A.E. Estienne, M.R. Reverchon, A.B. Brossaud, C.R. Rame and J.D. Dupont</i>	884
79.17	The effects of PROK 1, alone or in combination with IFN gamma on endometrial immune response in pig <i>S.E. Song and J. Kim</i>	884

Session 80.

Animal behaviour

Room: Gratte Ciel 3

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Dantas / Boyle

Theatre Session 80

Book of Abstracts page

8:30	Creating a culture of openness for the responsible use of video observation in animal sciences <i>M.F. Giersberg and F.L.B. Meijboom</i>	885
8:45	Salivary oxytocin and lachrymal caruncle temperature as indicators of anticipation in growing pigs <i>G.A. Franchi, L.R. Moscovice, H. Telkänranta and L.J. Pedersen</i>	885
9:00	Pig oxidative stress model: behaviour as a potential indicator of oxidative stress in pigs <i>R.D. Guevara, J.J. Pastor, S. López-Vergé, X. Manteca, G. Tedo and P. Llonch</i>	886
9:15	Comparison of aversiveness of 8 different inert gas (mixtures) to CO ₂ for stunning pigs at slaughter <i>I. Wilk, J. Gelhausen, T. Friehs, T. Krebs, D. Mörlein, J. Tetens and J. Knöll</i>	886

9:30	Detecting onset of farrowing using CUSUM-charts based on sows' activity <i>T. Wilder, B. Baude and J. Krieter</i>	887
9:45	Impact of environmental enrichment on the behaviour and immune cell transcriptome of pregnant sows <i>M.M. Lopes, C. Clouard, J. Chambeaud, M. Brien, N. Villain, C. Gerard, F. Hérault, A. Vincent, I. Louveau, R. Resmond, H. Jammes and E. Merlot</i>	887
10:00	The knowns and unknowns about feather pecking in laying hens <i>A. Harlander and N. Van Staaveren</i>	888

10:15 Coffee break

10:45	Lower redness of the facial skin is a marker of a positive human-hen relationship <i>D. Soulet, A. Jahoui, M.-C. Blache, B. Piégu, G. Lefort, L. Lansade, K. Germain, F. Lévy, S. Love, A. Bertin and C. Arnould</i>	888
11:00	Do sheep differentiate emotional cues conveyed in human body odour? <i>I. Larrigaldie, F. Damon, S. Mousqué, B. Patris, L. Lansade, B. Schaal and A. Destrez</i>	889
11:15	Evaluation of inter-observer reliability of dichotomous and four-level animal-based indicators <i>B. Torsiello, M. Giammarino, L. Battaglini, M. Battini, S. Mattiello, P. Quatto and M. Renna</i>	889
11:30	Social network analysis of dairy cows' group structure at the feeding trough <i>T. Wilder, P. Hasenpusch, A. Seidel, G. Thaller and J. Krieter</i>	890
11:45	Roughage and type of dispensers: what consequences on horses' feeding behaviour? <i>M. Roig-Pons and S. Briefer</i>	890

Poster Session 80

Book of Abstracts page

80.13	Caudectomy effect on the severity of tail lesions and abscesses' frequency in pig carcasses <i>P. Trevisi, D. Luise, S. Viridis, S. Dalcanale and U. Rolla</i>	891
80.14	Characterising cattle daily activity patterns using accelerometer data <i>S. Hu, A. Reverter, R. Arablouei, G. Bishop-Hurley and A. Ingham</i>	891
80.15	Effects of olfactory exposure to twelve essential oils on behaviour and health of cows with mastitis <i>R. Nehme, C. Michelet, E. Vanbergue, O. Rampin, S. Bouhallab, A. Aupiais and L. Andennebi-Najar</i>	892
80.16	Assessment of stress in dairy cattle industry via analysis of cortisol residue in commercial milk <i>M. Ataallahi, G.W. Park, E. Nugrahaeningtyas, M. Dehghani, J.S. Lee and K.H. Park</i>	892
80.17	The physiological and behavioural effects of COVID-19 restrictions on lactating dairy cows <i>S.J. Morgan and D. Barrett</i>	893
80.18	Effects of the living environment on the behaviour of rabbits <i>M. Fétiqueau, M. Besson, V. Fillon, M. Gunia and L. Fortun-Lamothe</i>	893
80.19	Behaviour test and study of sheepdogs' abilities <i>B. Lasserre, B. Ducreux, M. Chassier, L. Joly, T. Le Morzadec, P. Cacheux and C. Gilbert</i>	894
80.20	Innovative evaluation method of behavioural reactivity for 'foie gras' ducks <i>C.M. Monestier, A.W. Warin, S.L. Lombard, S.L.M. Laban-Mele and W.M. Massimo</i>	894
80.21	Use of scaring devices to avoid roe deer fawns getting injured or killed during mowing <i>J. Mačuhová, T. Wiesel and S. Thurner</i>	895

Room: Roseraie 3

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Druyan / Bloch

Theatre Session 81		Book of Abstracts page
8:30	Precision feeding, recent advances for gestating sows and dairy cows <i>C. Gaillard, C. Ribas and M. Durand</i>	895
9:00	Individual ingestion time prediction with RGB-D cameras in beef cattle: a machine learning approach <i>P. Guarnido-Lopez, F. Ramirez-Agudelo, S. Tomozyk, A. Kjørvel, A. Carvalho, F. Jezegou-Bernard, P. Gauthier and M. Benaouda</i>	896
9:30	Using image classification to estimate feed intake in weaned piglets under commercial conditions <i>T. Van De Putte, J. Degroote and J. Michiels</i>	896
9:45	The value of precision feeding technologies: economic, productivity and environmental aspect <i>J.K. Niemi</i>	897
10:15 Coffee break		
10:45	Precision feeding in dairy cows: what do professionals in ruminant nutrition think about it? <i>A. Igier, A. Petillon-Pronk, J. Martin, E. Hertault, N. Gaudillière, J. Jurquet, A. Fischer and Y. Le Cozler</i>	897
11:00	Characterizing dairy cow's individual reaction to a decrease in production concentrate distribution <i>A. Fischer, R. Lehuraux and J. Jurquet</i>	898
11:15	Longitudinal patterns for feeding traits in the two parental populations of the mule duck <i>H. Chapuis, C. Ribas, H. Gilbert, M. Lagüe and I. David</i>	898
11:30	Models predicting methane emissions and methane conversion factor of Finnish Nordic Red dairy cows <i>J.S. Adjassin, A. Guinguina, M. Eugène and A.R. Bayat</i>	899
11:45	Use of automated head-chamber systems as exclusive concentrate dispensers during bulls fattening <i>N. Lorant, E. Henrotte, Y. Beckers, F. Forton, A. Vanlierde, M. Mathot and A. Mertens</i>	899
Poster Session 81		Book of Abstracts page
81.10	On-farm nutritional supplementation to improve sows and piglets' performances: field report <i>P. Engler, G. Gemo, S. Cissé and J.M. Garcia</i>	900
81.11	Effects of monosaccharides on <i>in vitro</i> NDF and starch digestibility, pH and volatile fatty acids <i>E. Raffrenato, G. Esposito and L. Bailoni</i>	900
81.12	Benefit of full matrix application for a novel phytase using a phased-dosing or fixed dosing strategy <i>B.C. Hillen, S. Gilani, R.D. Gimenez-Rico, K.M. Venter, P. Plumstead and Y. Dersjant-Li</i>	901
81.13	Use of fodder beets in French dairy diets: farmers points of views and experimental results <i>V. Brocard, A. Marsault, L. Vivenot, E. Tranvoiz and J. Jurquet</i>	901
81.14	Effect of wilting grass silage on milk production of dairy cows fed two concentrate protein levels <i>M. Grøseth, L. Karlsson, H. Steinshamn, M. Johansen, A. Kidane and E. Prestløyken</i>	902
81.15	Zootechnical performance of dairy cattle fed ensiled Italian ryegrass or winter rye <i>L. Vandaele, J.L. De Boever, T. Van Den Nest and K. Goossens</i>	902
81.16	Performance of NIR spectrometry to predict amino acids content in forages <i>L. Bahloul, V. Larat, P. Riche and B. Sloan</i>	903

Session 82. Product quality and efficiency of small ruminant production systems

Room: Roseraie 2

Date: Thursday 31 August 2023; 8:30 – 12:00

Chair: Hernández-Castellano / Tsiplakou

Theatre Session 82		Book of Abstracts page
8:30	The performance of cross fostered lambs from birth to weaning on commercial sheep flocks in Ireland <i>F.P. Champion, J. Molloy and M.G. Diskin</i>	904
8:45	Latent factors analysis of protein profile, composition, and cheese-making traits of goat milk <i>N. Amalfitano, G. Secchi, M. Pazzola, G.M. Vacca, M.L. Dettori, F. Tagliapietra, S. Schiavon and G. Bittante</i>	904
9:00	Pyrenean wools: how improving the organisation of the upstream and downstream sectors in the massif <i>C. Viguié, S. Fichot and G. Brunschwig</i>	905
9:15	The Gentile di Puglia merino sheep breeds preliminary wool quality assessment <i>V. Landi, E. Ciani, G. Molina, R. Topputi, F.M. Sarti, A. D'Onghia, G. Mangini, F. Pilla, S. Grande, A. Maggiolino and P. De Palo</i>	905
9:30	Using indoor and outdoor finishing systems to finish hill lambs to carcass weights between 12-16 kg <i>M. Dolan, T. Boland, N. Claffey and F. Champion</i>	906
9:45	Influence of climatic disturbances on the lactation curve in dairy goats <i>A. Harnois Gremmo, N. Gafsi, F. Bidan, O. Martin and L. PUILLET</i>	906
10:00	Genetic parameters for fleece uniformity in Alpacas <i>J.P. Gutiérrez, A. Cruz, R. Morante, A. Burgos, N. Formoso-Rafferty and I. Cervantes</i>	907
10:15	Coffee break	
10:45	Farmers' competitions: stimulating new management practices by Peruvian alpaca and llama farmers <i>E. Quina, T. Felix, M. Aguilar, G. Gutierrez, J. Candio, J. Gamarra, M. Mamani, A. Mejía and M. Wurzinger</i>	907
11:00	YoGArt project: milk quality and oxidative status of ewes fed microalgae blend <i>A. Mavrommatis, P. Kyriakaki, F. Satolias and E. Tsiplakou</i>	908
11:15	Goat AI programs based on the male effect using less or no hormones progress with suitable results <i>A. Fatet, L. Johnson, L. Jourdain, F. Bidan and P. Martin</i>	908
11:30	Fiber characteristics of cashmere goat in Mongolia <i>S.B. Baldan, M.P. Purevdorj, G.M. Mészáros and J.S. Sölkner</i>	909
Poster Session 82		Book of Abstracts page
82.12	Anco fit improves feed efficiency, milk production and milk solids in lactating ewes <i>C. Panzuti, R. Breitsma and C. Gerard</i>	909
82.13	No effect of meslin flattening on dairy ewes <i>B. Fañça, A. Hardy, M. Rinn and L. Buisson</i>	910
82.14	Quality of cheeses made from the milk of native breeds of goats <i>A. Kawęcka, M. Pasternak, J. Sikora and M. Puchała</i>	910
82.15	The impact of live-weight and body condition score on reproductive success in ewes <i>P. McCarron, N. McHugh, N. Fetherstone, H. Walsh and F.M. McGovern</i>	911

82.16	Genetic parameters of medullation types in alpaca fibre <i>A. Cruz, Y. Murillo, A. Burgos, A. Yucra, M. Quispe, E. Quispe and J.P. Gutiérrez</i>	911
82.17	Blood and gastrointestinal nematode profile of sheep-fed diets supplemented with fossil shell flour <i>O.O. Ikusika and C.T. Mpendulo</i>	912
82.18	Synchrotron FTIR microspectroscopy investigation on the sperm cryopreservation of Sanan goat <i>S. Ponchunchoovong, F. Suwor, K. Tammanu and S. Siriwong</i>	912
82.19	A need for knowledge on the utilisation of forage by goats according to the distribution methods <i>B. Faça and B. Bluet</i>	913
82.20	Changes in fattening and slaughter traits of old-type Polish merino between 2010 and 2020 <i>M. Puchała, A. Kawęcka, J. Sikora and M. Pasternak</i>	913
82.21	Milk fat nutritional indices – a comparative study between retail goat and cow milk <i>G. Papatzimos, P. Mitlianga, M.A. Karatzia, Z. Basdagianni and E. Kasapidou</i>	914
82.22	Mountain caprine milk – the higher the better? <i>M.A. Karatzia, M. Amanatidis, G. Papatzimos, E. Kasapidou, P. Mitliagka and Z. Basdagianni</i>	914
82.23	Results of milk performance of Carpathian goats <i>J. Sikora, A. Kawęcka, M. Puchała and M. Pasternak</i>	915
82.24	Barley in concentrates for dairy goats – effects of alkaline and mechanical treatments <i>A. Martinsen, D. Galméus, H. Volden, K. Hove, M. Silberberg and M. Eknæs</i>	915

Session 83.

Genetic diversity

Room: Prestige Gratte Ciel

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Neumann / Schiavo

	Theatre Session 83	Book of Abstracts page
14:00	The effect of population history, mutation and recombination on genomic selection <i>D. Adepoju, T. Klingström, A.M. Johansson, E. Rius-Vilarrasa and M. Johnsson</i>	916
14:15	The detection of putative recessive lethal haplotypes in Irish sheep populations <i>R. McAuley, N. McHugh, T. Pabiou and D.C. Purfield</i>	916
14:30	Assessing the impact of inbreeding on mastitis and digital dermatitis in German dairy cattle <i>J. Mugambe</i>	917
14:45	Genomic inbreeding in the Austrian Turopolje pig population <i>G. Mészáros, B. Berger, C. Draxl and J. Sölkner</i>	917
15:00	A genetic diversity study of a local Belgian chicken breed using the new IMAGE SNP array <i>R. Meyermans, W. Gorssen, J. Bouhuijzen Wenger, O. Heylen, J. Martens, S. Janssens and N. Buys</i>	918
15:15	Genetic diversity in Dutch sheep breeds shaped by geography, history, use and genetic management <i>J.N. Hoorneman, W.J. Windig and M.A. Schoon</i>	918
15:30	Genetic diversity and population structure of the Cyprus Chios sheep and Damascus goat breeds <i>A.C. Dimitriou, G. Maimaris, A.N. Georgiou and G. Hadjipavlou</i>	919
15:45	Coffee break	
16:15	Genome-wide analysis of Greek goats with global breeds revealing population structure and diversity <i>E. Tosiou, V. Tsartsianidou, S. Vouraki, V. Papanikolopoulou, L.V. Ekateriniadou, E. Boukouvala, I.G. Bouzalas, I. Sakaridis, G. Arsenos and A. Triantafyllidis</i>	919

16:30	Genome-wide scan for runs of homozygosity in South American camelids <i>S. Pallotti, M. Picciolini, M. Antonini, C. Renieri and V. Napolioni</i>	920
16:45	Exploring global cattle genealogy with tree sequence <i>G. Mafra Fortuna, J. Obsteter, A. Kranis and G. Gorjanc</i>	920
17:00	Which diversity measures are important for small breeds like German Black Pied Cattle (DSN)? <i>G.A. Brockmann, G.B. Neumann, P. Korkuc, M.J. Wolf, K. May and S. König</i>	921
17:15	Characterisation of free-living and exotic animal species at species and individual level <i>M. Zorc, M. Cotman, A. Dovč, J. Zabavnik-Piano and P. Dovc</i>	921
17:30	Comparative analysis of heterozygosity-enriched regions in two autochthonous Italian cattle breeds <i>G. Schiavo, S. Bovo, F. Bertolini, A. Ribani, V. Taurisano, S. Dall'olio, M. Bonacini and L. Fontanesi</i>	922
17:45	Recovering latent population stratification using ADMIXTURE and metafounders in Brown Swiss <i>C. Anglhuber, C. Edel, E.C.G. Pimentel, R. Emmerling, K.-U. Götz and G. Thaller</i>	922

Poster Session 83

Book of Abstracts page

83.15	Genomic diversity analysis of the Swedish Landrace goat <i>B. Hegedüs, A.M. Johansson and P. Bijma</i>	923
83.16	Effect of interpopulation distance on average heterosis in crosses <i>A. Legarra, D. Gonzalez-Dieguez, A. Charcosset and Z.G. Vitezica</i>	923
83.17	Genome of the extinct Gotland cattle breed <i>M. Johnsson and A.M. Johansson</i>	924
83.18	Genetic variability in Italian Mediterranean buffalo: implications for conservation and breeding <i>M.M. Gómez, R. Cimmino, D. Rossi, G. Zullo, G. Campanile, G. Neglia and S. Biffani</i>	924
83.19	A comparative genome analysis across pig breeds can help to identify putative deleterious alleles <i>M. Ballan, S. Bovo, G. Schiavo, F. Bertolini, M. Bolner, M. Cappelloni, S. Tinarelli, M. Gallo and L. Fontanesi</i>	925
83.20	The effect of recessive genetic defects on pregnancy loss in Swedish dairy cattle <i>P. Ask-Gullstrand, E. Strandberg, R. Båge, E. Rius-Vilarrasa and B. Berglund</i>	925

Session 84. EuroFAANG: genotype-to-phenotype research across Europe and beyond

Room: Foyer Amphitheatre Rhone

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Clark / Kuhn

Theatre Session 84

Book of Abstracts page

14:00	EuroFAANG – an infrastructure for farmed animal genotype to phenotype research in Europe and beyond <i>E.L. Clark, E. Giuffra, A. Granados-Chapette, M. Groenen, P.W. Harrison, C. Kaya, S. Lien, M. Tixier-Boichard and C. Kuehn</i>	926
14:15	GENE-SWitCH: improving the functional annotation of pig and chicken genomes for precision breeding <i>E. Giuffra, H. Acloque, A.L. Archibald, M.C.A.M. Bink, M.P.L. Calus, P.W. Harrison, C. Kaya, W. Lackal, F. Martin, A. Rosati, M. Watson and J.M. Wells</i>	926
14:30	Genome-wide association studies for body weight in broilers using sequencing and SNP chip data <i>E. Tarsani, V. Riggio and A. Kranis</i>	927
14:45	Using methylation annotation to improve genomic prediction of gene expression in pigs <i>B.C. Perez, J. De Vos, D. Crespo-Piazzuello, M.C.A.M. Bink, M. Ballester, M.J. Mercat, O. Madsen and M.P.L. Calus</i>	927

15:00	The path from functional annotation towards improved genomic prediction in cattle <i>C. Kühn</i>	928
15:15	Biology-driven genomic predictions for dry matter intake within and across breeds using WGS data <i>R. Bonifazi, G. Plastow, M. Heidaritabar, A.C. Bouwman, L. Chen, P. Stothard, J. Basarb, C. Li, Bovreg Consortium and B. Gredler-Grandl</i>	928
15:30	Newly annotated genomic features for biology-driven genome selection: the BovReg contribution <i>G.C.M. Moreira, L. Tang, S. Dupont, M. Bhati, H. Pausch, D. Becker, M. Salavati, R. Clark, E.L. Clark, G. Plastow, C. Kühn, C. Charlier and The Bovreg Consortium</i>	929
15:45	Coffee break	
16:15	AQUA-FAANG: decoding genome function to enhance genotype-to-phenotype prediction in farmed finfish <i>D. MacQueen and S. Lien</i>	929
16:30	Integrating functional annotation data in genomic prediction of VNN resistance in European sea bass <i>S. Faggion, R. Mukiibi, L. Peruzza, M. Babbucci, R. Franch, G. Dalla Rovere, S. Ferraresso, D. Robledo and L. Bargelloni</i>	930
16:45	GEroNIMO (Genome and Epigenome eNabled breeding in MOnogastrics) <i>S. Lagarrigue, F. Pitel and T. Zerjal</i>	930
17:00	RUMIGEN: new breeding tools in a context of climate change <i>S. Mattalia, A. Vinet, M.P.L. Calus, H.A. Mulder, M.J. Carabaño, C. Diaz, M. Ramon, S. Aguerre, J. Promp, R. Vallée, B.C.D. Cuyabano, D. Boichard, E. Pailhoux and J. Vandenplas</i>	931
17:15	The genetic basis of ruminant microbiomes – contribution of the HoloRuminant project <i>Y. Ramayo-Caldas, I. Mizrahi, P. Pope, C. Creevey, J.P. Sanchez, R. Quintanilla and D. Morgavi</i>	931

Poster Session 84

Book of Abstracts page

84.13	The effect of production systems on adipose tissue gene expression in Krškopolje pig <i>K. Poklukar, M. Čandek-Potokar, N. Batorek-Lukač, M. Vrecl, G. Fazarinc and M. Škrlep</i>	932
84.14	A lncRNA gene-enriched atlas for GRCg7b chicken genome using Ensembl, RefSeq and two FAANG databases <i>F. Degalez, M. Charles, S. Foissac, H. Zhou, D. Guan, L. Fang, C. Klopp, F. Lecerf, T. Zerjal, F. Pitel and S. Lagarrigue</i>	932

Session 85.

Climate care dairy farming: herd management – Part 3

Room: Foyer Amphitheatre Parc

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Cieślak / Kuipers

Theatre Session 85

Book of Abstracts page

14:00	Effect of the Rumitech in a high-forage diet on methane production and performance of dairy cows <i>A. Cieślak, H. Huang, B. Nowak, M. Kozłowska, D. Lechniak, P. Pawlak, M. Szumacher-Strabel and J. Dijkstra</i>	933
14:15	invited Sorghum hybrids as viable forage alternative to corn silage when water availability is limited <i>D. Duhatschek, J. Bell, D. Druetto, L.F. Ferraretto, K. Raver, J. Goeser, J. Smith, S. Paudyal, G.M. Schuenemann and J.M. Piñeiro</i>	933
14:30	Feed intake and milk production of dairy cows fed with a ration with ensiled tall fescue <i>M. Cromheeke, L. Vandaele, D. Van Wesemael, J. Baert, M. Cougnon, D. Reheul and N. Peiren</i>	934
14:45	Effect of supplementing live bacteria on methane production in lactating dairy cows <i>O. Ramirez-Garzon, D.G. Barber, J. Alawneh, L. Huanle and M. Soust</i>	934
15:00	Greenhouse gas emissions from dairy cows fed best practice diets <i>M. Managos, C. Lindahl, S. Agenäs, U. Sonesson and M. Lindberg</i>	935

15:15	Effects of cashew nutshell liquid on milk production and methane emission of dairy cows <i>R.J.F. Gaspé, T. Obitsu, T. Sugino, Y. Kurokawa and Y. Kuroki</i>	935
15:30	<i>In vivo</i> testing of a methane-suppressing feed additive that acts by altering rumen redox potential <i>C. O'Donnell, C. Thorn, A.C.V. Montoya, S. Nolan, M. McDonagh, E. Dunne, F. McGovern, R. Friel, S. Waters and V. O'Flaherty</i>	936
15:45 Coffee break		
16:15	Diurnal variation and repeatability of CO ₂ production in GreenFeed studies with lactating cows <i>A. Guinguina and P. Huhtanen</i>	936
16:30	Repeatability and correlations of residual carbon dioxide and feed efficiency in Nordic Red cattle <i>A. Chegini, M.H. Lidauer, T. Stefanski, A.R. Bayat and E. Negussie</i>	937
16:45	Methane emission from purebred Holstein, Nordic Red and F1 crossbred cows of the two breeds <i>A.L.F. Hellwing, M. Vestergaard and M. Kargo</i>	937
17:00	How does a beef × dairy calving affect the dairy cow's following lactation? <i>R.E. Espinola Alfonso, W.F. Fikse, M.P.L. Calus and E. Strandberg</i>	938
17:15	Extended lactation and milk yield – a randomized controlled trial in high yielding older cows <i>A. Hansson, C. Kronqvist, R. Båge and K. Holtenius</i>	938
17:30	Effect of usage BWB sire on Holstein cow performances <i>K. Elzinga, C. Schrooten, G. De Jong and P. Duenk</i>	939
17:45	Combined analysis: genetic and phenotypic trends in German Holstein dairy cattle <i>L. Hüneke, J. Heise, D. Segelke, S. Rensing and G. Thaller</i>	939

Poster Session 85

Book of Abstracts page

85.15	Whole-crop maize forage preservation improvement with silage additives <i>I. Nikodinoska, E. Wambacq, G. Haesaert and C.A. Moran</i>	940
85.16	Gallic acid alleviates the negative effect of <i>Asparagopsis armata</i> on milk yield in dairy cows <i>R. Huang, P. Romero, C. Martin, E.M. Ungerfeld, A. Demeter, A. Belanche, D.R. Yáñez-Ruiz, M. Popova and D. Morgavi</i>	940
85.17	Milk production in primiparous cows with customized voluntary waiting period <i>A. Edvardsson Rasmussen, E. Strandberg, R. Båge, M. Åkerlind, K. Holtenius and C. Kronqvist</i>	941
85.18	Association of nisin and <i>Cymbopogon citratus</i> against <i>S. aureus</i> isolated from bovine mastitis <i>L. Castelani, T.M. Mitsunaga, L.C. Roma Jr. and L.E.F. Zadra</i>	941

Session 86. **How to address stakeholder and societal expectations of intrinsic and extrinsic quality of animal products?**

Room: Tête D'or Lounge

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Ferrari / Giusti

Theatre Session 86

Book of Abstracts page

14:00	Quick sustainability scan calculator for intensive and extensive pig farms <i>S. Sanz-Fernández, C. Reyes-Palomo, P. Meatquality Consortium and V. Rodríguez-Estévez</i>	942
14:15	Bulk milk and farms characterization in the Parmigiano Reggiano Consortium area: the INTAQT project <i>M. Berton, M.A. Ramirez Mauricio, N. Amalfitano, L. Gallo, A. Cecchinato and E. Sturaro</i>	942

14:30	Bridging environmental sustainability and intrinsic quality traits of pork <i>M. Gagaoua, F. Gondret, F. Garcia-Launay and B. Lebret</i>	943
14:45	Improving milk intrinsic quality: considering synergies and antagonisms of farming practices <i>L. Rey-Cadilhac, A. Ferlay, M. Gelé, S. Léger and C. Laurent</i>	943
15:00	Imagining futures of husbandry farming: new business models for the sustainable transition? <i>B. Smulders, R. Valkenburg and M. Anastasi</i>	944
15:15	Current prediction and authentication tools used and needed in EU livestock product chains <i>S. McLaughlin, F. Albert, F. Bedoin, C. Couzy, I. Legrand, A. Nicolazo De Barmon, C. Laithier, C. Manuelian, F. Klevenhusen, S. De Smet, E. Sturaro and N. Scollan</i>	944
15:30	Milk quality assessment for intensive and extensive goat farming of the Skopelos breed in Greece <i>Z. Basdagianni, I. Stavropoulos, G. Manassis, C.G. Biliaderis and I. Bossis</i>	945

15:45 Coffee break

16:15	Rheological evaluation of rennet-induced curdling of goat milks from different farming systems <i>K. Kotsiou, M. Andreadis, A. Lazaridou, C.G. Biliaderis, Z. Basdagianni, I. Bossis and T. Moschakis</i>	945
16:30	Technological tools for authentication assessment of animal products <i>invited C.L. Manuelian</i>	946
17:00	Potential of milk infrared spectroscopy to discriminate farm characteristics: the INTAQT project <i>M.A. Ramirez Mauricio, D. Giannuzzi, L. Gallo, M. Berton, A. Cecchinato and E. Sturaro</i>	946
17:15	A longitudinal cohort study of health and welfare status in extensively and intensively reared goats <i>V. Korelidou, A.I. Kalogianni and A.I. Gelasakis</i>	947
17:30	New tool for accurate analysis of gas concentrations in barns <i>O. Bonilla-Manrique, A. Moreno-Oyervides, H. Moser, J.P. Waclawek, B. Lendl and P. Martín-Mateos</i>	947

Poster Session 86

Book of Abstracts page

86.13	Implementation of husbandry practices improving quality and sustainability: a living lab approach <i>E. Sturaro, C. Berri, D. Berry, R. Eppenstein, C. Laithier, A. Cartoni Mancinelli, B. Martin and F. Leiber</i>	948
86.14	Muscle proteomics towards molecular understanding of colour and water-holding biochemistry in meat <i>S. Yigitturk</i>	948
86.15	Exploring YOLO deep learning model for goat detection in animal welfare and behavioural monitoring <i>A. Temenos, A. Voulodimos, D. Kalogeras and A. Doulamis</i>	949
86.16	The association between body condition score and the udder skin surface temperature in goats <i>V. Korelidou, A.I. Kalogianni and A.I. Gelasakis</i>	949

Session 87.

Carbon sources and sinks within global livestock systems

Room: Bellecour 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Salami / Pouloupoulou

Theatre Session 87

Book of Abstracts page

14:00	Leveraging the measuring and managing of livestock farms on the journey towards Net Zero <i>invited J. Gilliland</i>	950
14:30	The role of carbon sequestration in organic dehesas ruminant farms <i>R. Casado, M. Escribano, P. Gaspar and A. Horrillo</i>	950

14:45	Estimating soil carbon sequestration gaps for ruminant systems across the globe <i>Y. Wang, I. Luotto, Y. Yigini, R. Vargas, D. Wisser, T.P. Robinson, U.M. Persson, C. Cederberg, R. Ripoll-Bosch, I.J.M. De Boer and C.E. Van Middelaar</i>	951
15:00	Agronomic and environmental impacts of sheep integration in cover crop management in Wallonia <i>N. Lorant, B. Huyghebaert and D. Stilmant</i>	951
15:15	Carbon footprint assessment of Korean native beef cattle and options to achieve net-zero emissions <i>R. Ibdhi, T. Kim, J. Byun, R. Bharanidharan, Y. Lee, S. Kang and K. Kim</i>	952
15:30	Carbon Footprint of organic beef from dairy male calves <i>L. Mogensen, T. Kristensen, C. Kramer, A. Munk, P. Spleth and M. Vestergaard</i>	952
15:45	Coffee break	
16:15	Model to calculate the impact of interventions on the carbon footprint of dairy <i>A. Esselink</i>	953
16:30	Tools to optimise the carbon footprint of milk production <i>D. Schwarz</i>	953
16:45	Evaluation of feed additives under varying diets of dairy cows on performances and enteric emissions <i>M.E. Uddin, M.R.A. Redoy, S. Ahmed, M. Bulness, D.H. Kleinschmit, J. Lefler and C. Marotz</i>	954
17:00	Supplementation with a calcium peroxide additive mitigates enteric methane emissions in beef cattle <i>E. Roskam, D.A. Kenny, V. O'Flaherty, A.K. Kelly and S.M. Waters</i>	954
17:15	Methane emission from rosé veal calves feed a corn cob silage-based or grass silage-based ration <i>A.L.F. Hellwing and M. Vestergaard</i>	955
17:30	Feeding a starch and protein binding agent for mitigating enteric methane emissions in sheep <i>P. Prathap, S.S. Chauhan, J.J. Cottrell, B.J. Leury and F.R. Dunshea</i>	955

Poster Session 87

Book of Abstracts page

87.13	Neutralization of bovine enteric methane emission by the presence of trees in a silvopastoral system <i>J.R.M. Pezzopane, H.B. Brunetti, P.P.A. Oliveira, A.C.C. Bernardi, A.R. Garcia, A. Berndt, A.F. Pedroso, A.L.J. Lelis and S.R. Medeiros</i>	956
87.14	Dairy goat farms in Extremadura: carbon sources and sinks in several management systems <i>L. Madrid, M. Escribano, P. Gaspar and A. Horrillo</i>	956
87.15	Life cycle assessment of IntelliBond on the carbon footprint of a dairy farm <i>D. Brito De Araujo, K. Perryman and J.G.H.E. Bergman</i>	957
87.16	Effects of supplementation of <i>Asparagopsis taxiformis</i> as a means to mitigate methane emission <i>M. Angellotti, M. Lindberg, M. Ramin, S.J. Krizsan and R. Danielsson</i>	957

Session 88.

Minerals in animal nutrition: basal diet – Part 2

Room: Bellecour 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Alvarez Rodriguez / Windisch

Theatre Session 88

Book of Abstracts page

14:00	Trace element concentrations in feed ingredients: previously overlooked, now under the spotlight <i>M. López-Alonso</i>	958
14:30	Review on native Se concentrations in feed ingredients <i>D. Cardoso and A. Hachemi</i>	958

14:45	Does USEtox predicts adequately Cu and Zn ecotoxicity in soils amended with animal effluents? <i>E.P. Clement, M.N. Bravin, A. Avadi and E. Doelsch</i>	959
15:00	Challenges in establishing the mineral composition of feed materials <i>G. Tran and V. Heuzé</i>	959
15:15	Swiss feed database: mineral and trace element composition of feedstuffs <i>M. Lautrou, E. Manzocchi and P. Schlegel</i>	960
15:30	Overview of international aquaculture feed formulation database with reference to mineral nutrition <i>D.P. Bureau, L. Manomaitis and F.M. Damasceno</i>	960

15:45 Coffee break

16:15	Mineral analysis: opportunities and limitations <i>invited P. Berzaghi, R. Fornaciari, M. Dorigo and G. Cozzi</i>	961
16:45	Determination of forage mineral analysis with portable X-ray Fluorescence device <i>R. Balegi, F. Penen, M. Lemarchand and A. Boudon</i>	961
17:00	A new phosphorus feeding system for the sustainability of swine and poultry production <i>M.P. Létourneau Montminy, M. Lautrou, M. Reis, C. Couture, N. Sakomura, B. Meda, C.R. Angel and A. Narcy</i>	962
17:15	Phosphorus digestibility of porcine processed animal proteins (PAPs) in broiler diets <i>J. Van Harn and P. Bikker</i>	962
17:30	Prediction of magnesium absorption in dairy cows: An update <i>R. Khiaosa-Ard and Q. Zebeli</i>	963
17:45	Se and Co balance in dairy cows: longitudinal study from late lactation to subsequent mid-lactation <i>J.B. Daniel and J. Martín-Tereso</i>	963

Poster Session 88

Book of Abstracts page

88.13	Mineral analysis in feed using a new automated analytical method <i>D. Schwarz and D. Aden</i>	964
88.14	Trace mineral trends in British and Irish forages <i>A.H. Clarkson and N.R. Kendall</i>	964
88.15	Does size matter? Comparing liver sample sizes for trace element status <i>A.H. Clarkson, J. Angel and N.R. Kendall</i>	965
88.16	Investigation on the variation in phosphorus of wheat bran: effect in diets of fattening pigs <i>R. Puntigam, P. Riesinger, A. Honig, M. Schaeffler, W. Windisch and H. Spiekers</i>	965
88.17	Swiss Feed Database: a closer look at minerals and trace elements in 10 years of roughage surveys <i>E. Manzocchi, M. Lautrou and P. Schlegel</i>	966
88.18	Mineral forage value in the INRAE feeding system for ruminants <i>A. Boudon and G. Maxin</i>	966
88.19	Minerals in cattle nutrition – meet the needs! <i>A.C. Honig, V. Inhuber, H. Spiekers, W. Windisch, K.-U. Götz, G. Strauß and T. Ettle</i>	967
88.20	Ruminant feed rations rich in clay minerals may induce Zn deficiency <i>M. Schlattl, M. Buefler and W. Windisch</i>	967
88.21	Zn, Cu, Mn and Fe balance in dairy calves fed milk replacer or whole milk at two feeding allowances <i>T. Chapelain, J.B. Daniel, J.N. Wilms, L.N. Leal and J. Martín-Tereso</i>	968

88.22	Impact of drinking water salinity on lactating cows <i>A. Iritz and Y. Ben Meir</i>	968
88.23	Seasonal variation of trace essential and toxic minerals in milk and blood of dairy ewes <i>A. Nudda, M.F. Guiso, G. Sanna, A. Cesarani, M. Deroma, G. Pulina and G. Battacone</i>	969

Session 89. Explainable models and artificial intelligence supporting farming decisions

Room: Gratte Ciel 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Foy / Odintsov

Theatre Session 89		Book of Abstracts page
14:00	Measuring the behaviour of lambs in an isolated environment with artificial intelligence methods <i>B. Benet and R. Lardy</i>	969
14:15	Estimating sow posture from computer vision: influence of the sampling rate <i>M. Bonneau, J.A. Vayssade and L. Canario</i>	970
14:30	Estimating pig mass in a high-density pig group during transportation <i>V. Bloch, A. Valros, C. Munsterhjelm, M. Heinonen, M. Tuominen-Brinkas, H. Koskikallio and M. Pastell</i>	970
14:45	Assessment of piglet maturity at birth using computer vision <i>L. Maignel, R. Mailhot, A. Carrier and P. Gagnon</i>	971
15:00	Validation of new software (r-Algo) for predicting meat chemical composition from ultrasound images <i>B. Ahmadi, T. Schwarz and P.M. Bartlewski</i>	971
15:15	Coupling a sow herd model with a bioclimatic model of gestation rooms: development and evaluation <i>E. Dubois, F. Garcia-Launay, N. Quiniou, M. Marcon, J.Y. Dourmad, D. Renaudeau and L. Brossard</i>	972
15:30	Supervised machine learning as a tool to improve farrowing monitoring and stillborn rate in sows <i>C. Teixeira Costa, G. Boulbria, C. Dutertre, C. Chevance, T. Nicolazo, V. Normand, J. Jeusselin and A. Lebret</i>	972
15:45 Coffee break		
16:15	Use of accelerometers to predict the behaviour of growing rabbits <i>M. Piles, J.P. Sánchez, L. Riaboff, I. David and M. Mora</i>	973
16:30	Use of accelerometry data to detect kidding in goats <i>P. Gonçalves, M.R. Marques, A.T. Belo, A. Monteiro and F. Braz</i>	973
16:45	FTIR milk fatty acids quantification for non-invasive monitoring of rumen health in dairy cows <i>F. Huot, S. Claveau, A. Bunel, D. Warner, D.E. Santschi, R. Gervais and E.R. Paquet</i>	974
17:00	Optimizing breeding performance through algorithmic approaches to maximize meat quality in livestock <i>J. Albechaalany, M.P. Ellies-Oury, J.F. Hocquette, C. Berri and J. Saracco</i>	974
17:15	Detection of multiple feeding behaviours in calves using noseband and accelerometer sensors <i>S. Addo, K.A. Zipp, M. Safari, F. Freytag and U. Knierim</i>	975
17:30	Numerical detection of productive anomalies induced by heat stress in dairy cows <i>M. Bovo, M. Ceccarelli, C. Giannone, S. Benni, P. Tassinari and D. Torreggiani</i>	975
Poster Session 89		Book of Abstracts page
89.14	Using existing slaughterhouse data to assist detection of boar taint <i>B. Callens, M. Aluwé, R. Klont, M. Bouwknecht and J. Maselyne</i>	976

Session 90.

Genetics in horses

Room: Bellecour 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Stock / Cox

Theatre Session 90	Book of Abstracts page
14:00 Use of linear data for characterization and selection of sport horses with highest genetic potential <i>K.F. Stock, A. Hahn, I. Workel and W. Schulze-Schleppinghoff</i>	977
14:15 Effect of mitochondrial genetic variability on performance of endurance horses <i>A. Ricard, S. Dhorne-Pollet, C. Morgenthaler, J. Speke Katende, C. Robert and E. Barrey</i>	977
14:30 Early life jumping traits' potential as proxy for jumping performance in Belgian Warmblood horses <i>L. Chapard, R. Meyermans, W. Gorssen, N. Buys and S. Janssens</i>	978
14:45 Genetic covariance components of conformation, movement and athleticism traits in Irish Sport Horses <i>J.L. Doyle, S. Egan and A.G. Fahey</i>	978
15:00 Start status in Swedish Warmblood horses <i>Y. Blom, S. Eriksson and Å. Gelinder Viklund</i>	979
15:15 Genetic analysis of the precocity potential in trotting races of Spanish Trotter Horses <i>M. Ripollés-Lobo, D.I. Perdomo-González, M.D. Gómez, M. Ligeró and M. Valera</i>	979
15:30 Is the ability to race barefoot a heritable trait in Standardbred trotters? <i>P. Berglund, S. Andonov, A. Jansson, T. Lundqvist, C. Olsson, E. Strandberg and S. Eriksson</i>	980
15:45 Coffee break	
16:15 Searching for genomic regions associated with conformation traits in the Pura Raza Español horse <i>N. Laseca, C. Ziadi, D.I. Perdomo-González, M. Valera, P. Azor, S. Demyda-Peyrás and A. Molina</i>	980
16:30 Successful genotype imputation from medium to high density in Belgian Warmblood horses <i>L. Chapard, R. Meyermans, W. Gorssen, B. Van Mol, F. Pille, N. Buys and S. Janssens</i>	981
16:45 Inbreeding in the Belgian equine warmblood population: current degree and evolution <i>B. Van Mol, H. Hubrechts, R. Meyermans, L. Chapard, W. Gorssens, M. Oosterlinck, N. Buys, F. Pille and S. Janssens</i>	981
17:00 Population structure assessment using genome wide molecular information in Martina Franca donkey <i>V. Landi, E. Ciani and P. De Palo</i>	982
17:15 Unravelling genomic regions with transmission ratio distortion in horse <i>N. Laseca, A. Cánovas, M. Valera, S. Id-Lahoucine, D.I. Perdomo-González, P.A.S. Fonseca, S. Demyda-Peyrás and A. Molina</i>	982
17:30 Microsatellite-based detection of transmission ratio distortion in the Pura Raza Española horse <i>D.I. Perdomo-González, S. Id-Lahoucine, A. Molina, A. Cánovas, N. Laseca, P.J. Azor and M. Valera</i>	983
Poster Session 90	Book of Abstracts page
90.14 Estimation of the genetic parameters for temperament in Haflinger horses <i>T.H. Zanon, B. Fürst Waltl, S. Gruber and M. Gauly</i>	983
90.15 Estimation of the genetic propensity to suffer hock osteochondrosis in Pura Raza Española horses <i>M. Ripollés, A. Molina, M. Novales, C. Ziadi, E. Hernández and M. Valera</i>	984

- 90.16 Genetic characterization of white facial marking in Pura Raza Español horses depending on coat colour 984
A.E. Martínez, M.J. Sánchez Guerrero, A. López, M. Ligeró and M. Valera Córdoba
- 90.17 Climate effects on foaling event: genotype-by-environment interactions in horse fertility 985
C. Sartori, E. Mancin, G. Gomez-Proto, B. Tuliozi and R. Mantovani

Session 91. Nitrogen excretion and ammonia emission in pig and poultry production

Room: Gratte Ciel 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Millet / Brodziak

Theatre Session 91		Book of Abstracts page
14:00	Impact of raw and digested pig manure on ammonia volatilization after land application <i>F.M.W. Hickmann, R. Rajagopal, N. Bertrand, I. Andretta, M.-P. Létourneau-Montminy and D. Pelster</i>	985
14:15	Influence of housing manure management on ammonia emissions from broiler and laying hen productions <i>E. Caron, P. Le Bras and M. Hassouna</i>	986
14:30	NH ₃ , N ₂ O and CH ₄ emission from piggeries: comparison of several manure management techniques <i>N. Guingand and P. Le Bras</i>	986
14:45	Feeding pigs with low-protein diets: impact of pig manure nitrogen content on biogas production <i>F.M.W. Hickmann, I. Andretta, L. Cappelaere, B. Goyette, M.-P. Létourneau-Montminy and R. Rajagopal</i>	987
15:00	A tool to reduce worker exposure from ammonia and particles in swine and poultry housing <i>N. Guingand, S. Lagadec, K. Amin, D. Bellanger, A.L. Boulestreau-Boulay, C. Delaqueze, C. Depoudent, L. Gabriel, E. Koulete, V. Le Gall, P. Lecorguille, L. Leroux, G. Manac'h, S. Roffi and M. Ruch</i>	987
15:15	Methodological redesign of the poultry mass-balance excretion and variability of nitrogen excretion <i>V. Blazy, E. Caron, D.D. Djenontin-Agossou and Y. Guyot</i>	988
15:30	Access to bedding and an outdoor run for growing-finishing pigs and their impact on the environment <i>A.K. Ruckli, S. Hörtenhuber, S. Dippel, P. Ferrari, M. Gebeska, J. Guy, M. Heinonen, J. Helmerichs, C. Hubbard, H. Spooler, A. Valros, C. Winckler and C. Leeb</i>	988
15:45 Coffee break		
16:15	Reduction of protein and potassium to improve welfare and environmental footprint in broilers <i>T. De Rauglaudre, B. Méda, W. Lambert, S. Fournel and M.P. Létourneau-Montminy</i>	989
16:30	Effects of reducing protein content in broiler diets on environmental impacts <i>J. Gickel, V. Wilke, C. Ullrich and C. Visscher</i>	989
16:45	Effect of reduced-crude protein diets on performance, meat yield, and nitrogen production in broiler <i>C. Gayraud, T. Wise, J.D. Davis, J.C. De Paula Dorigam, V.D. Naranjo and W.A. Dozier, III</i>	990
17:00	Effect of reducing dietary protein content on performance and environmental impact of pig production <i>E. Gonzalo, A. Simongiovanni, C. De Cuyper, B. Ampe, M. Aluwe, W. Lambert and S. Millet</i>	990
17:15	Impact of genotype×feed-interactions in nitrogen- and phosphorus-reduced ration on of fattening pigs <i>C. Große-Brinkhaus, B. Bonhoff, I. Brinke, E. Jonas, S. Kehraus, K.H. Südekum and E. Tholen</i>	991
17:30	Pig performance, carcass composition and meat quality can be maintained with high CP reduction <i>L. Cappelaere, F. Garcia-Launay, W. Lambert, A. Simongiovanni and M.-P. Létourneau-Montminy</i>	991
Poster Session 91		Book of Abstracts page
91.14	Alpha mannan polysaccharide supplement increase growth performance and reduce gas emission in pig <i>J.H. Song, C.B. Lim, M.D.M. Hossain, S. Biswas, J.S. Yoo, I.H. Kim and Q.Q. Zhang</i>	992

91.15	Characteristic of odour substances from broiler farms <i>S.Y. Seo, J.S. Park, S.Y. Park and M.W. Jung</i>	992
91.16	Environmental assessment of layer-type male chicks breeding <i>E. Dubois and M. Quentin</i>	993

Session 92.

Inflammation and energy metabolism in young and adult livestock

Room: Tête D'or 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Sauerwein

Theatre Session 92		Book of Abstracts page
14:00	Milk metabolites differ with feed efficiency during early lactation but not during feed restriction <i>J. Pires, T. Larsen, S. Bes, I. Constant, D. Roux, M. Turrett, A. De La Torre, I. Ortigues-Marty, F. Blanc and I. Cassar-Malek</i>	993
14:30	Dairy cow inflammatory status is modulated by physiological stage and feed restriction <i>C. Delavaud, A. De La Torre, D. Durand, S. Bes, D. Roux, A. Thomas, M. Turrett, I. Ortigues-Marty, I. Cassar-Malek, M. Bonnet and J. Pires</i>	994
14:45	Energy balance clusters in relation to metabolic and inflammatory status and disease in dairy cows <i>J. Ma, A. Kok, R. Bruckmaier, E. Burgers, R. Goselink, J. Gross, T. Lam, A. Minuti, E. Saccenti, E. Trevisi and A. Van Knegsel</i>	994
15:00	Effects of parity on metabolism, redox status and cytokines in early lactating dairy cows <i>A. Corset, A. Boudon, A. Remot, S. Philau, P. Poton, O. Dhumez, B. Graulet, P. Germon and M. Boutinaud</i>	995
15:15	Tissue distribution and pharmacological characterization of bovine free fatty acids-sensing GPCRs <i>T.C. Michelotti, M. Bonnet, V. Lamothe, S. Bes and G. Durand</i>	995
15:30	Maternal nutrition carry-over effects on beef cow colostrum but not on milk fatty acid composition <i>N. Escalera-Moreno, B. Serrano-Pérez, E. Molina, L. López De Armentia, A. Sanz and J. Álvarez-Rodríguez</i>	996
15:45 Coffee break		
16:15	Different types and doses of colostrum to optimize the passive immune transfer and health in lambs <i>A. Belanche, F. Canto and O. Calisici</i>	996
16:30	Oxidative status in female Holstein calves fed with or without transition milk <i>C.S. Ostendorf, M. Hosseini Ghaffari, B. Heitkönig, C. Koch and H. Sauerwein</i>	997
16:45	Effects of concentrate feeding and hay quality on adipogenesis and inflammation in dairy calves <i>R. Khiaosa-Ard, A. Sener-Aydemir, S. Kreuzer-Redmer and Q. Zebeli</i>	997
17:00	Synergistic benefits of marine derived bioactives to maintain the gut barrier in an <i>ex vivo</i> model <i>M.A. Bouwhuis, I. Nooijen, E. Van Der Steeg and S. O'Connell</i>	998
17:30	Effects of milk replacer diets on the intestinal development of suckled piglets <i>G.Y. Duan, C.B. Zheng, J. Zheng, P.W. Zhang, M.L. Wang, J.Y. Yu, B. Cao, M.M. Li, F. Cong, Y.L. Yin and Y.H. Duan</i>	998
17:45	The impact of early thermal manipulation on the hepatic energy metabolism of mule duck <i>C. Andrieux, M. Morisson, V. Coustham, S. Panserat and M. Houssier</i>	999
Poster Session 92		Book of Abstracts page
92.13	Feed efficiency and responses of plasma and milk isotopic signatures in Charolais beef cows <i>A. De La Torre, J. Pires, I. Cassar-Malek, I. Ortigues-Marty, F. Blanc, L. Barreto-Mendes, G. Cantalapiedra-Hijar and C. Loncke</i>	999

92.14	How the composition of Holstein cow colostrum differs according to the immunoglobulins G level <i>A. Goi, A. Costa and M. De Marchi</i>	1000
92.15	An educational kit for effective prevention and management of energy deficit in dairy cows <i>M. Gelé, M. Boutinaud, A. Bouqueau, M. Marguerit, J. Jurquet, Y. Le Cozler and J. Guinard-Flament</i>	1000
92.16	Inflammation status weakly modulated by short-term feed restriction in lactating beef cows <i>C. Delavaud, J. Pires, M. Barbet, I. Ortigues-Marty, I. Cassar-Malek, M. Bonnet and A. De La Torre</i>	1001
92.17	Metabolic profiles of grazing dairy cows with or without feed restriction during early lactation <i>A.L. Astessiano, M. Garcia-Roche, D. Custodio, G. Ortega, P. Chilibroste and M. Carriquiry</i>	1001
92.18	Hepatic mitochondrial function in grazing dairy cows with or without feed restriction <i>M. García-Roche, D. Custodio, A. Astessiano, G. Ortega, P. Chilibroste and M. Carriquiry</i>	1002
92.19	On-farm emergency slaughtered dairy cows: causes and haematological biomarkers <i>F. Fusi, I.L. Archetti, S.M. Chisari, V. Lorenzi, C. Montagnin, R. Salonia, L. Bertocchi and G. Cascone</i>	1002
92.20	The effect of early feed restriction of ewe lambs on milk miRNAome of the filial generation <i>A. Martín, F. Cecilian, F.J. Giráldez, R. Calogero, C. Lecchi and S. Andrés</i>	1003
92.21	Quercetin supplementation in perinatal sows diet influencing suckling piglets and its mechanism <i>Y. Li, Q.L. Yang, Y.X. Fu, S.S. Zhou, J.Y. Liu and J.H. Liu</i>	1003
92.22	Development of muscle injury in weanling piglets under chronic immune stress <i>Y. Duan</i>	1004

Session 93. Recent advances on *in vitro* systems (from cell culture to *in vitro* digestion methods): relevance as alternatives to animal experimentation for livestock research

Room: Tête D'or 1

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Louveau

	Theatre Session 93	Book of Abstracts page
14:00	The great power of being tiny: <i>in vitro</i> gut systems in livestock research <i>S.K. Kar</i>	1004
	invited	
14:30	Comparison of adult intestinal stem cell derived organoids between different ages and sex in pigs <i>R.S.C. Rikkers, O. Madsen, S.K. Kar, L. Kruijt, A.A.C. De Wit, E. Van Der Valk, L.M.G. Verschuren, S. Verstringe and E.D. Ellen</i>	1005
14:45	Butyric glycerides directly and indirectly enhance chicken enterocyte resistance to pathogens <i>A. Mellouk, N. Vieco-Saiz, V. Michel, O. Lemâle, T. Goossens and J. Consuegra</i>	1005
15:00	Spheroid and organoid models to study animal reproduction <i>K. Reynaud, M. Ta, C. Pucéat, M. Billet, C. Mahé, L. Schmaltz, L. Laffont, P. Mermillod and M. Saint-Dizier</i>	1006
	invited	
15:30	3D-cell culture systems; a breakthrough to improve the human and animal disease research <i>E.S. Smirnova, K.A. Adhimalam and T.M. Min</i>	1006
15:45	Coffee break	
16:15	Slurry chemical characteristics and ammonia emissions assessed by different methods <i>L. Sarri, E. Fuertes, E. Pérez-Calvo, A.R. Seradj, R. Carnicero, J. Balcells and G. De La Fuente</i>	1007

16:30	<i>In vitro</i> protein fractionation methods for ruminant feeds B.Z. Tunkala, K. Digiaco, P.S. Alvarez Hess, F.R. Dunshea and B.J. Leury	1007
16:45	Storage conditions of rumen inoculum: impact on gas productions in mini dual flow fermenters V. Berthelot, M. Charef-Mansouri, A.-M. Davila and L.P. Broudiscou	1008
17:00	Dynamics of rumen microbiome and methane emission during <i>in vitro</i> rumen fermentation R. Dhakal, R. Sapkota, P. Khanal, A. Winding and H.H. Hansen	1008
17:15	Effects of <i>Asparagopsis armata</i> inclusion on methane production in semi-continuous fermenters P. Romero, S.M. Waters, D.R. Yañez-Ruiz, A. Belanche and S.F. Kirwan	1009
17:30	Calcium propionate mitigated adverse effects of incubation temperature shift on <i>in vitro</i> fermentation T. He, S. Long and Z. Chen	1009

Poster Session 93

Book of Abstracts page

93.12	<i>In vitro</i> generation of ovine monocyte-derived macrophages for SRLV infection studies E. Grochowska, M. Ibrahim, M. Wu and K. Stadnicka	1010
93.13	Resistance of probiotics to antibiotics and antagonism to poultry pathogens N. Akhavan, K. Stadnicka, D. Thiem and K. Hryniewicz	1010
93.14	Metabolic footprint of prebiotics and probiotics in Chick8E11 and Caco-2 intestinal cell lines S. Zuo, W. Studziński, K. Stadnicka and P. Kosobucki	1011
93.15	Cellular imagery evaluation of butyric acid biological activities in Caco-2 cell line D. Gardan-Salmon, B. Saldaña, J.I. Ferrero and M. Arturo-Schaan	1011
93.16	Effect of silage sample preparation on rumen fermentation (<i>in vitro</i>) J.A. Huntington, T. Snelling, L.A. Sinclair, H. Warren, D.A. Galway and D.R. Davies	1012
93.17	Repeatability of fermentation kinetics using <i>in vitro</i> gas fermentation B. Jantzen and H.H. Hansen	1012
93.18	Evaluation of rumen bypass protein in processed soybean meal products A. Chariopolitou, A. Plomaritou, A. Tzamourani, K. Droumtsekas and A. Foskolos	1013
93.19	Effect of rumen inoculum on predicted <i>in vivo</i> methane production from barley and oats P. Fant, M. Ramin and P. Huhtanen	1013
93.20	Comparison of <i>in vitro</i> and <i>in vivo</i> methane production in dairy cows D.W. Olijhoek, É. Chassé, M. Battelli, M.V. Curtasu, M. Thorsteinsson, M.H. Kjeldsen, W.J. Wang, G. Giagnoni, M. Maigaard, C.F. Børsting, M.R. Weisbjerg, P. Lund and M.O. Nielsen	1014

Session 94.

Free communications in animal health and welfare

Room: Gratte Ciel 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Boyle / Calderon Diaz

Theatre Session 94

Book of Abstracts page

14:00	What impairs laying hens' foot health? A retrospective German study N. Volkmann, A. Riedel, N. Kemper and B. Spindler	1014
14:15	Pododermatitis in broilers: prevalence and risk factors present in reused beddings J. Montalvo, M. Cevallos and M. Cisneros	1015

14:30	Digital dermatitis in French young bulls fattening farms <i>A. Waché, M. Petitprez, E. Dod Ioan, M. Delacroix and C. Guibier</i>	1015
14:45	Prevalence and factors associated with teat-end hyperkeratosis in dairy cows <i>F.G. Silva, C. Antas, A.M.F. Pereira and C. Conceição</i>	1016
15:00	Milk calcium content to detect hypocalcaemia in dairy cows at the onset of lactation <i>T. Aubineau, R. Guatteo and A. Boudon</i>	1016
15:15	PRRSV stabilisation programs in French farrow-to-finish farms: a way to reduce antibiotic use <i>C. Teixeira Costa, G. Boulbria, V. Normand, C. Chevance, J. Jeusselin, T. Nicolazo and A. Lebret</i>	1017
15:30	Monitoring of antimicrobial use on French pig farms from 2010 to 2019 using INAPORC panels <i>A. Poissonnet, I. Corregge, C. Chauvin and A. Hemonc</i>	1017

15:45 Coffee break

16:15	Digital drug registration and its relation to veterinary slaughter findings <i>H. Görge, I. Dittrich, N. Kemper and J. Krieter</i>	1018
16:30	A critical lens to regulations around veterinary antimicrobial use across countries and species <i>G. Olmos Antillón and I. Blanco-Penedo</i>	1018
16:45	An approach of the place of animal health and role of veterinarian in sustainable farming systems <i>A. Scholly-Schoeller and G. Brunschwig</i>	1019
17:00	Developing an animal welfare benchmarking framework for Australian lot-fed cattle <i>T. Collins, E. Taylor, A. Barnes, E. Dunston-Clarke, D. Miller, D. Brookes, E. Jongman and A. Fisher</i>	1019
17:15	H2020 mEATquality: on-farm animal welfare assessment in slaughter pigs <i>T. Rousing, L.D. Jensen, M.L.V. Larsen and L.J. Pedersen</i>	1020
17:30	Variability in pig hair cortisol concentrations at the end of the fattening period <i>P. Levallois, M. Leblanc-Maridor, S. Gavaud, B. Lieubeau, G. Morgant, C. Fourichon, J. Hervé and C. Belloc</i>	1020
17:45	Identification and characterization of IUGR piglets <i>C. Ollagnier, R. Ruggeri, J. Bellon and G. Bee</i>	1021

Poster Session 94

Book of Abstracts page

94.15	Investigating the association between sole ulcers and sole temperature in dairy cattle using IRT <i>A. Russon, A. Anagnostopoulos, M. Barden, B. Griffiths, C. Bedford and G. Oikonomou</i>	1021
94.16	Osteopathic manipulative treatment: a complementary approach to promote milk production in cows <i>C. Omphalius, A. Hardouin, M. Launay Ventelon and S. Julliard</i>	1022
94.17	The relationship between stress levels and skin allergy or atopy problem by analysing hair cortisol <i>G.W. Park, M. Ataallah and K.H. Park</i>	1022
94.18	SECURIVO: self-assessment tools for biosecurity in veal calves' farms <i>M. Chanteperdrix, M. Drouet, M. Mounaix, M. Tourtier, D. Le Goic, C. Jaureguy, P. Briand, M. Coupin, A. Hemonc and N. Rousset</i>	1023
94.19	Temporally synchronized ruminal vs reticular fluid pH and short chain fatty acids in dairy cows <i>A. Kidane, K.S. Eikanger and M. Eknæs</i>	1023
94.20	Antimicrobial use and main causes of treatment in Italian buffalo farms <i>G. Di Vuolo, F. Scali, C. Romeo, V. Lorenzi, C.D. Ambra, M. Serrapica, G. Cappelli, F. Fusi, E. De Carlo, G.L. Alborali, L. Bertocchi and D. Vecchio</i>	1024
94.21	Herd factors associated with levels of parasitism in alternative pig farms <i>M. Delsart, N. Rose, B. Dufour, J.M. Répérant, R. Blaga, F. Pol and C. Fablet</i>	1024

94.22	Biosecurity and Animal Welfare relationship on buffalo farms through ClassyFarm assessments <i>D. Vecchio, G. Santucci, V. Lorenzi, C. Caruso, C.D. Ambra, M. Serrapica, G. Di Vuolo, G. Cappelli, F. Fusi, E. De Carlo, C. Romeo, F. Scali, G.L. Alborali, A.M. Maisano and L. Bertocchi</i>	1025
94.23	Immune function of pre-weaned calves fed a fortified milk replacer under heat stress conditions <i>A.A.K. Salama, S. Serhan, L. Ducrocq, M. Biesse, A. Joubert and G. Caja</i>	1025
94.24	The effect of udder health on milk composition <i>Z. Nogalski and M. Sobczuk-Szul</i>	1026

Session 95. Happy Delivering innovative and holistic milk based monitoring and decision-making PLF tools – collaboration with HappyMoo

Room: Roseraie 3

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Gengler / Knijn

	Theatre Session 95	Book of Abstracts page
14:00	An attempt to predict dairy cows chronic stress biomarkers using milk MIR spectra <i>C. Grelet, H. Simon, J. Leblois, M. Jattiot, C. Lecomte, R. Reding, J. Wavreille, E.J.P. Strang, F.J. Auer, Happymoo Consortium and F. Dehareng</i>	1026
14:15	Prediction of body condition score for the entire lactation in Walloon Holstein cows <i>H. Atashi, J. Chelotti and N. Gengler</i>	1027
14:30	Conditions to develop successful mid-infrared (MIR) based BCS and BCS change predictions <i>J. Chelotti, H. Atashi, C. Grelet, M. Calmels, J. Leblois and N. Gengler</i>	1027
14:45	Large-scale analysis of chronic stress in dairy cows using hair cortisol and blood fructosamine <i>H. Simon, C. Grelet, S. Franceschini, H. Soyeurt, J. Leblois, M. Jattiot, C. Lecomte, R. Reding, J. Wavreille, E.J.P. Strang, F.J. Auer and F. Dehareng</i>	1028
15:00	Calculation of dry matter intake and energy balance based on MIR spectral data at European level <i>V. Wolf, L. Dale, M. Gelé, U. Schuler, U. Müller, N. Gengler, J. Leblois and M. Calmels</i>	1028
15:15	Validation of HappyMoo MIR energy balance models on external datasets with feeding restriction <i>M. Calmels, J. Pires, M. Boutinaud, A. Leduc, C. Leroux, J. Chelotti, L. Dale, C. Grelet, A. Tedde, J. Leblois and M. Gelé</i>	1029
15:30	Genetic analyses of principal components of milk mid-infrared spectra from Holstein cows <i>Y. Chen, P. Delhez, H. Atashi, H. Soyeurt and N. Gengler</i>	1029
15:45	Coffee break	
16:15	MastiMIR – MIR prediction for udder health <i>L.M. Dale, A. Werner, E.P.J. Strang, Happymoo Consortium and J. Bieger</i>	1030
16:30	Prediction of lameness and hoof lesions using MIR spectral data <i>M. Jattiot, L.M. Dale, M. El Jabri, J. Leblois, M.-N. Tran and HappyMoo Consortium</i>	1030
16:45	MIR spectral prediction based on heat stress in dairy cattle <i>L.M. Dale, M. Jattiot, A. Werner, E.J.P. Strang, P. Lemal, Happymoo Consortium, Klimaco Consortium and N. Gengler</i>	1031
17:00	Use of MIR spectra-based indicator for genetic evaluation of heat stress in dairy cattle <i>P. Lemal, L.M. Dale, M. Jattiot, J. Leblois, M. Schroyen and N. Gengler</i>	1031
17:15	A unique overview of enteric methane emissions by dairy cows in Bretagne, France <i>S. Mendowski, O. Garcia, C. Bruand, M. Tournat, T. Viot and L. Meriaux</i>	1032

17:30 Genetic parameters analysis of milk citrate for Holstein cows in early lactation 1032
H. Hu, Y. Chen, C. Grelet and N. Gengler

Poster Session 95

Book of Abstracts page

95.14 Milk fluctuations in daily milk yield associated with diseases in Chinese Holstein cattle 1033
A. Wang, D.K. Liu, C. Mei and Y.C. Wang

Session 96. ERANET-funded ‘Grass To Gas’ and EU-funded ‘SMARTER’ projects

Room: Roseraie 2

Date: Thursday 31 August 2023; 14:00 – 18:00

Chair: Conington / Vouraki

Theatre Session 96

Book of Abstracts page

14:00 Impact of genomic selection for methane emissions in a high performance sheep flock 1033
S.J. Rowe, T. Bilton, P. Johnson, S. Hickey, A. Jonker, N. Amyes, K. McRae, S. Clarke and J. McEwan

14:30 Improving feed efficiency in meat sheep increases CH₄ emissions measured indoor or on pasture 1034
F. Tortereau, J.-L. Weisbecker, C. Coffre-Thomain, Y. Legoff, D. François, Q. Le Graverand and C. Marie-Etancelin

14:45 Effects of sire and diet on rumen volume and relationships with feed efficiency 1034
N.R. Lambe, A. McLaren, K.A. McLean, J. Gordon and J. Conington

15:00 Evaluating the effect of herbage composition on methane output in sheep 1035
F.M. McGovern, P. Creighton, E. Dunne and S. Woodmartin

15:15 Dry matter intake across life stages in sheep 1035
E. O’Connor, N. McHugh, E. Dunne, T.M. Boland and F.M. McGovern

15:30 Selecting feed-efficient sheep with concentrates alters their efficiency with forages and behaviour 1036
C. Marie-Etancelin, J.L. Weisbecker, D. Marcon, L. Estivalet, Q. Le Graverand and F. Tortereau

15:45 Coffee break

16:15 Genome-wise association study of footrot and mastitis in UK Texel sheep 1036
K. Kaseja, S. Mucha, J. Yates, E. Smith, G. Banos and J. Conington

16:30 Genetic parameters of nematode resistance in dairy sheep 1037
B. Bapst, K. Schwarz, S. Thüer and S. Werne

16:45 Contrasting genetic resistance to GIN on growth performance and feed efficiency of Corriedale lambs 1037
E.A. Navajas, G. Ciappesoni and I. De Barbieri

Poster Session 96

Book of Abstracts page

96.10 Australian Merino: animal welfare and resilience in extensive systems 1038
M. Del Campo, J.L. De Araújo Pimenta, I. De Barbieri, P. Lorenze, F. Rovira and J.M. Soares De Lima

96.11 Prediction of feed efficiency related traits from plasma NMR spectra 1038
A. Marquisseau, F. Tortereau, N. Marty-Gasset, C. Marie-Etancelin and Q. Le Graverand

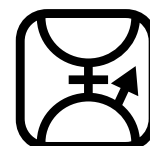
96.12 Metabolism in lambs from two feed-efficiency genetic lines subjected to different early rearing practices 1039
G. Cantalapiedra-Hijar, M.M. Milaon, S. Parisot, C. Durand, M. Vauris, F. Tortereau and C. Ginane

96.13 Genetic link between fertility and resilience in sheep and goat divergent selection experiments 1039
R. Rupp, C. Oget-Ebrad, S. Parisot, T. Fassier, G. Tosser Klopp and S. Freret

96.14	Phenotypic and genetic variability of health and welfare traits in French dairy goats <i>I. Palhiere, A. Bailly-Salins, A. Gourdon, M. Chassier, R. De Cremoux, M. Berthelot and R. Rupp</i>	1040
96.15	Assessment of phenotypic and genetic variability of rumen temperatures in goats <i>I. Palhiere, C. Huau, T. Fossier, R. Rupp and L. Bodin</i>	1040
96.16	Heritability of novel metabolite-based resilience biomarkers in dairy goat <i>M. Ithurbide, T. Fossier, M. Tourret, J. Pires, T. Larsen, N.C. Friggens and R. Rupp</i>	1041
96.17	Rumen size of sheep: difference between a modern and a native Norwegian sheep breed <i>B.A. Åby, M.A. Bhatti and G. Steinheim</i>	1041
96.18	Diurnal feed intake pattern of two sheep breeds fed different silage qualities <i>I. Dønnem, B.A. Åby and G. Steinheim</i>	1042

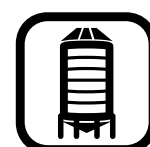
Study commissions

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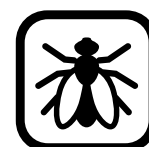
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Technical tours

Friday 1st September 2023

One day

Technical tours will be subject to feasibility and with a minimum registered participant. Some technical tours have already been cancelled for these reasons.

All preliminary programmes mentioned below are not final and are subject to changes.

Transportation (when applicable) will be planned.

TOUR 2

Title: Agroecology of grassland farming systems and cheese production

Preliminary program (subject to change):

- Morning activity: Visit of INRAE Theix & Saint-Nectaire Farm
- Lunch: In a restaurant (to be defined)
- Afternoon activity: Plateau of Gergovie and Museum visit



TOUR 3

Title: Discovery of the Vercors mountain pastures

Preliminary program (subject to change):

- Morning activity: Presentation of the 'Alpages Sentinelles' program by LESSEM scientists and its partners.
- Lunch: In a mountain hut
- Afternoon activity: Local sightseeing or gastronomic tour in the Vercors



(photo © Renaud Jaunatre)

TOUR 6

Title: Come and discover the Farm in Jalogny: research on efficient and sustainable practices in suckling cattle farming

Preliminary program (subject to change):

- Morning activity: Visit of the experimental farm of Ferm'Innov
- Lunch: Local products tasting (on site, meat, wines, etc.)
- Afternoon activity: Visit about wine production



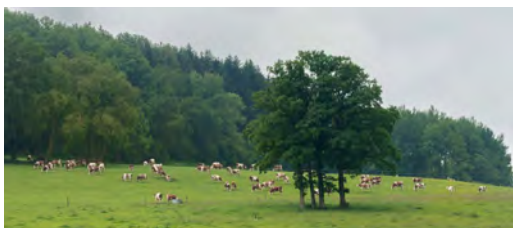
(photo © INRA)

TOUR 7

Title: A unique journey through the Montbéliard Cattle breed with an optimized use of genomics

Preliminary program (subject to change):

- Morning activity: Visit of the UMOTEST Coopex Group: Montbéliard Federation with systematic implementation of genomic selection; Semen production; Female station & Embryo collection; Dairy Farm with full implementation of genomics (Montbéliard breed)
- Lunch: On site, place to be determined
- Afternoon activity: Visit of Royal Monastery of Brou (Bourg en Bresse); Cheese (Comté) making factory or Coopérative de Etrez-Foissiat (Bresse Cream AOP)



(photo © Giorgio Soldi)

TOUR 10

Title: Milk and cheese production in Haute-Savoie (Alps)

Preliminary program (subject to change):

- Morning activity: Visit of the dairy farm producing local cheese Reblochon
- Lunch: In a restaurant (to be defined)
- Afternoon activity: Visit of the De Menthon Castle



TOUR 13

Title: From the meadow to the Charolaise plate

Preliminary program (subject to change):

- Morning activity: Visit of a beef farm & of the slaughterhouse of Paray-Le Monial (a tractor ride will be included with the tour!)
- Lunch: Thematic meal at the Maison du Charolais '7 ways to eat meat'
- Afternoon activity: Discovery of Pierreclos castle



TOUR 14

Title: Fruits, wine and sheep in Drôme: what else

Preliminary program (subject to change):

- Morning activity: Visit of the sheep-pastured orchard (support of the project 'ECORCE') and the dairy cow farm, discussions with the farm director and FiBL France team
- Lunch: Wine tasting with Côtes du Rhône and Clairette de Die wines & lunch at the Auberge de Crussol, local, traditional and inventive food
- Afternoon activity: Visit of the Château de Crussol & visit of the Ferme du Grand Laval, meeting with the farmers and explanations: sheep grazing in orchards and perennial crops, hens associated with fruit trees in mobile hen houses, etc.



(photo: © Clémence Rivoire – FiBL France)

TOUR 17

Title: Horse tour: health and breeding

Preliminary program (subject to change):

- Morning activity: Visit of Vetagrosup
- Lunch: On site, place to be determined
- Afternoon activity: Visit of Haras Numenor - breeding and reproduction center



(photo: Ifce / Mathilde DHOLLANDE)

TOUR 19

Title: Poultry of Bresse production and regional wine tasting!

Preliminary program (subject to change):

- Morning activity: Visit of a Bresse chicken farm
- Lunch: On site, place to be determined (Bressans lunch in a traditional restaurant)
- Afternoon activity: Wine tasting in a castle



Social events

Interbull dinner

BRASSERIE GEORGES (address: 30 Cr de Verdun Perrache, 69002 Lyon)
Saturday, August 26th 2023 – 7:30 pm to 11:00 pm
Metro station A: Perrache

Description:

Let's celebrate together the 40th anniversary of Interbull!

Registration: included in the Interbull registration fees, first come first served.

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



French dinner

MUSÉE DES CONFLUENCES (address: 86 Quai Perrache, 69002 Lyon)
Tuesday, August 29th 2023 – 8:30 pm to 1:00 am
Metro Station: Tramway 1: Musée confluence

Preliminary program:

- 08:30 pm: Arrival of participants and aperitif
- 08:30 pm to 01:00 am: Dinner cocktail in the Crystal & in the Terrace
- 09:00 pm: Opening speech by the organizers
- 09:00 pm to 11:00 pm: Free access to all permanent exhibition's rooms; including half guided tours.
- 11:00 pm to 01:30 am: Dancing party
- 01:30 am: End of the evening

Price (per person): 50€ Inc. VAT

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



Gala dinner

HEAT / H7 (address: 70 Quai Perrache, 69002 Lyon)

Thursday, August 31st 2023 – 07:30 pm to 12:00 am

Metro Station: Tramway 1: Hôtel de Région

Preliminary program:

- 07:30 pm: Arrival of participants and aperitif
- 08:00 pm to 08:30 pm: Typical musical show
- 09:00 pm to 11:00 pm: Seated Dinner
- 09:00 pm: Opening speech by the organizers
- 11:00 pm to 12:00 am: Dancing party, access to outdoor games
- 12:00 am: End of the evening

Price (per person): 90€ Inc. VAT

Access to the evening is by registration only.

No transfer will be planned. Proper attire required.



Touristic tours

Important note:

All tours are included in the Accompanying Person registration fee. We advise you to wear comfortable clothes and shoes.

The old city

Monday, August 28th (HALF DAY - morning)

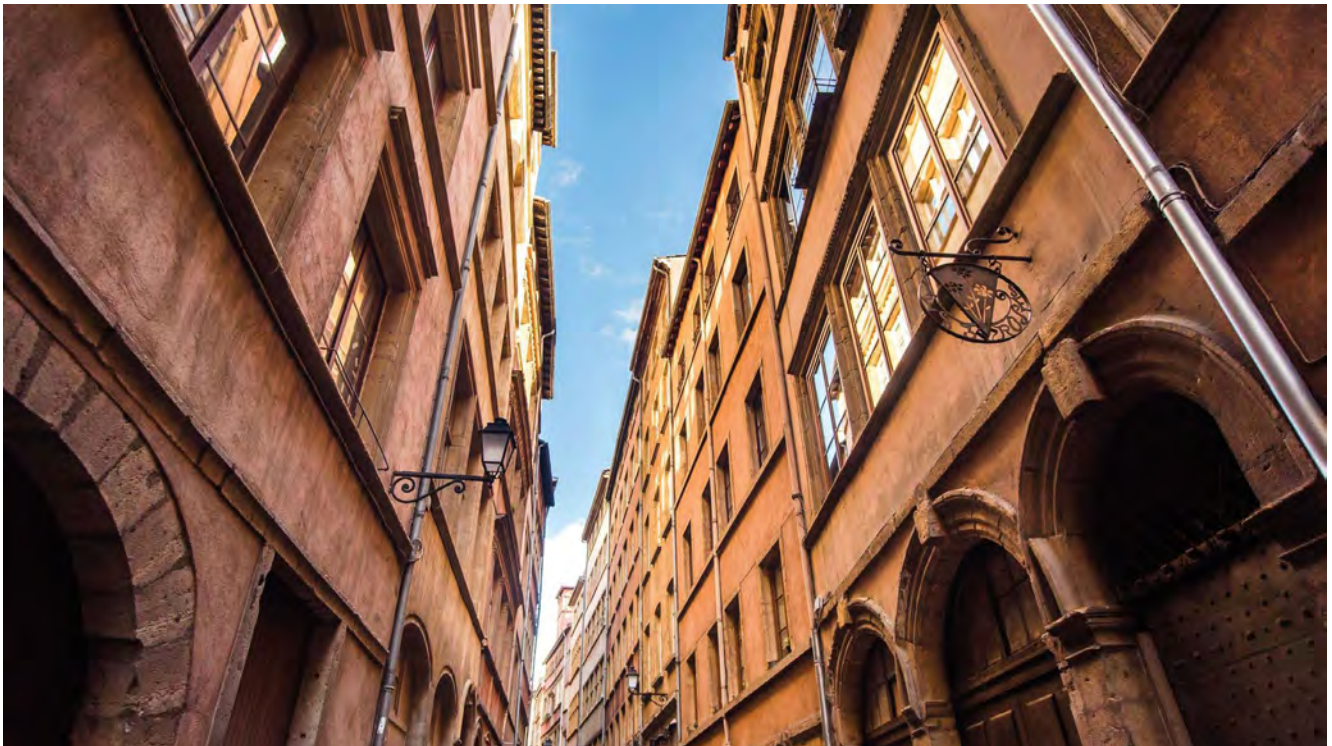
- Let's stroll around this amazing district, listed by UNESCO as a World Heritage site in 1998.
- Let's admire the beautiful Renaissance facades and buildings.
- Let's go through 'Traboules' and 'Miraboules' hidden corridors and byways.
- Let's observe the numerous religious statues.
- Let's have a look at the local restaurants in Lyon, called 'Bouchon' and typical menus.
- Let's discover Renaissance courtyards with Mediterranean colors.
- Let's meet and talk with local artisans (silk, stand glass, ceramics, etc.).
- Let's go inside the gothic Cathedral Saint Jean.
- Then, if you wish to ... let's taste some Lyon food specialties!

Price (per person): 30€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer (by public transports)
- English Tour Guide



The silk road - Lyon capital of silk

Tuesday, August 29th (HALF DAY - morning)

Discover the second hill of the city, dedicated to the silk history: 'LA CROIX ROUSSE'

- Visit of the Silk Museum: admire Jacquard silk looms from the XIX century. We will detail the life and the process of the silk workers and weavers.
- Visit of a design and textile 'village' where new companies are helped to begin their activity Silk shop with scarves exclusively made in Lyon, for shopping ...

Price (per person): 50€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer (by public transports)
- English Tour Guide



A day in the charming Beaujolais region

Wednesday, August 30th (ALL DAY)

Departure in a coach for a sightseeing tour in the southern part of Beaujolais region, 30 minutes from Lyon to the north, before Burgundy. A fluent English tour guide will be at your disposal.

- Two stops and Photo opportunities in typical villages in the middle of the slopes:
- Photo stop in BAGNOLS, famous for its XIIIth Century castle and typical farms,
- 30 minutes walking tour in OINGT, charming golden stones village, its medieval church and watch Tower, amazing view to the scenery with mountains covered with Douglas firs in the background...
- Then, continuation to ANSE and meeting with a fabulous wine owner, explanations about making wine, pruning vineyards, grapes, diseases etc... You'll visit his private museum and discover tools to take care of the vineyards. Beaujolais Rosé, Côtes de Brouilly and white Beaujolais will be tasted with numerous samples of Olive bread, bacon bread, nuts bread with salami and cheese...
- Back again to the coach in order to reach the northern part of Beaujolais, next to Macon, very near to Burgundy. On the way, many information will be given about this famous region of France by your tour guide.
- Then, on the road again to climb up to the Mount BROUILLY to discover an amazing view to the valley, the east direction to the French Alps.

Price (per person): 155€ Inc. VAT

(Price for a minimum of 30 participants)

Tour includes:

- Transfer
- English Tour Guide
- Lunch
- Admission to all activities





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The French National Research Institute for Agriculture, Food, and Environment (INRAE) is a major player globally in **research and innovation on agriculture, food and the environment**. It is a community of 12,000 people with 273 research, experimental research, and support units located in 18 regional centres throughout France.

Internationally, **INRAE is among the top research organisations in the agricultural and food sciences, plant and animal sciences, as well as in ecology and environmental science**. INRAE's goal is to be a key player in providing the knowledge base supporting the necessary acceleration of agricultural, food and environmental transitions, to address the major global challenges.

**French National Research Institute
for Agriculture, Food and Environment**

French association for animal production

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Our activities

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- CSAAD course in livestock nutrition
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- Scientific communication
- Scientific expertise

Our tools

- **FeedTables.com**: livestock feeds database
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Ask your nutritionist about the benefits of switching to a diet 100% free from sulphate trace minerals.



1) Faulkner et al, 2017, 2) Miller et al, 2020, 3) Guimaraes et al, 2019, 4) Guimaraes et al, 2020, 5) Caldera et al, 2019, 6) Genther et al, 2015, 7) Van Kuijk et al, 2022, 8) Ibraheem et al, 2021, 9) Daniel et al, 2020, 10) Yasui et al, 2014.

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Founded on 9 October 1979 at the initiative of representative organisations in the cattle sector, INTERBEV was recognised on November 18th, 1980 as an interbranch organisation for meat and livestock by ministerial decree.

INTERBEV'S KEY OBJECTIVES :

REPRESENTATION

INTERBEV acts as a genuine spokesperson for the livestock and meat sector. As a “from the field to the fork” inter-professional organisation, INTERBEV has a large representation to make the voice of all the bovine, calf, sheep, horse and goat professionals heard in all instances nationally or internationally. This representation, recognised by all those involved with INTERBEV and by its National Organisations, gives it a leading role in defending the interests of the entire sector.

DIALOGUE

INTERBEV is duty bound to define common positions to the 22 National Organisations that it is composed of. Dialogue is a key objective of the inter-professional organisation and as the interests of professional federations sometimes differ, it is essential that INTERBEV provides the possibility for exchanges, discussions and common reflections, with its first objective being to identify a consensus. The ability of the meat industry to organise itself and enter into dialogue gives weight to the inter-professional organisation's messages since they represent the position of all those involved in the industry.

COMMUNICATION

Lifestyles are changing as are the eating habits of the French who are increasingly adopting a responsible attitude to eating. This has been observed for some years by professionals within the livestock and meat sector, who are all members of INTERBEV, and are committed to facing the new challenges of sustainability through their collective approach to social responsibility: the Pact for Social Commitment. The PACT also aims at the promise of enhanced meat quality, one of the industry's objectives resulting from the French National Food Conference. To promote this, the inter-professional organisation launched a collective communication campaign entitled “LOVE MEAT, EAT BETTER”, signed “Naturally Flexitarian”.

INTERBEV'S STRATEGIC FOUNDATION

The inter-professional organisation's strategic base set up by INTERBEV in 2017, is a collective approach to social responsibility, integrating the industry's plans set out at the French National Food Conference (États Généraux de l'Alimentation). This strategy, called PACTE, is based on 5 core values: Progress, Future, Dialogue, Transparency and Expertise.

Its objective is to provide a global response to the expectations of society and those involved in the industry in terms of good production and consumption practices, with evidence and guarantees in support of this. It aims to highlight the strengths of the sector, to identify areas for improvement by working particularly with environmental and animal welfare NGOs and to use collective tools, in order to provide sustainable food.

This approach is under the guidance of the internationally recognised ISO 26000 standard, entitled Social Responsibility. In 2018 INTERBEV was the first food industry inter-professional organisation to be awarded a level 3 out of 4 AFNOR certificate “CSR commitment confirmed”, later confirmed in 2021.





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- Produce and disseminate new knowledge and innovations for sustainable livestock farming

<https://www.gis-avenir-elevages.org/>



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12 research staffs and 20+ graduate students. 20+ national projects, with total fund of ¥ 40 M.

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- ✓ Genetic improvement
- ✓ Beef quality guarantee
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