

Scotland's Rural College

Linking arable and livestock farms: Impact of grazing sheep on winter cereals and soil health

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President: Professor Mike Gooding



BRITISH SOCIETY
OF SOIL SCIENCE

Regenerative Agriculture – Understanding the opportunities and challenges

Hybrid event hosted online and at Hilton York, UK
25-26th April 2023 ([Event website](#))



PROGRAMME



CHAP
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Regenerative Agriculture – Understanding the opportunities and challenges

**Hybrid event hosted online and at Hilton York UK
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(12 BASIS points have been awarded: 4E, 1AP, 1PN, 2PD and 4IPM)

There is no single definition of “regenerative agriculture”, with interpretations varying between practitioners; but it can broadly be defined as “an approach to farming that uses soil conservation as the entry point to regenerate and contribute to the delivery of food production and other ecosystem services”.

In practice, regenerative agriculture can be broken down into 5 key principles: 1) reduced soil disturbance; 2) retention of green cover; 3) retention of living roots in the soil; 4) crop diversification and 5) integration of livestock into rotations.

It is recognised that there is a need to bring together the scientific evidence supporting the implementation of regenerative agriculture, to help evaluate the potential benefits and challenges for food production, the environment and farm profitability, across different agroclimatic zones and farming systems. This conference will bring together researchers, consultants, farmers, agronomists and students to share research findings.

PROGRAMME

Tuesday 25th April

09:00 **REGISTRATION**

10:00 **WELCOME and INTRODUCTION**
KATE SMITH (ADAS, Cambridge, UK)

Session One: Soils and Fertilisers (Supported by the British Society of Soil Science)
CHAIR: KATE SMITH (ADAS)

10:05 ***Invited speaker***
Mob grazing: Impacts, benefits, and trade-offs
LIZZIE SAGOO (ADAS Boxworth, Cambridge, UK)



10:35 **Promoting biodiversity above and below ground by implementing inter-row soil coverage in orchards**
THIERRY QUEROL (Syngenta Crop Protection Basel, Switzerland)

10:50 **Soil quality and impact of conservation agricultural practices - A pan-European assessment**
SEAN JELLES MARK (Syngenta Jealott's Hill International Research Centre, UK)

11:05 **Long-term ley-arable systems: Impact on soil physical properties**
CAIRISTIONA F E TOPP (Scotland's Rural College (SRUC), Edinburgh, UK)

11:20 **Legacy of soil warming and cover crops on the response of soil microbial function to repeated wet/dry cycles**
ADETUNJI ALEX ADEKANMBI (University of Reading, UK)

11:35 *Invited speaker*
Hendred Estate: Two decades of building soil health and organic matter using mainly photosynthesis
JULIAN GOLD (British Society of Soil Science, BSSS)

12:05 **LUNCH**

Session Two: Technology and Commerce (Supported by CHAP-Solutions)
CHAIR: KAIRSTY TOPP (SRUC)



13:15 **Regenerative agriculture – From soil health to cropping systems**
HARRY LANGFORD (CHAP-Solutions, UK) and JAMES STANDEN (Newcastle University, UK)

13:45 **Novel technologies for on-farm measurement of greenhouse gas emissions: Tools for regenerative agriculture**
SOPHIE PURSER (Mirico Ltd, Didcot, UK)

14:00 **The assessment of organo-mineral fertilisers as a viable commercial product in the UK**
EMMA BURAK (Yara UK Ltd, York, UK)

14:15 **A new source of sustainable nitrogen fertiliser using photocatalysis**
APOSTOLOS PAPADOPOULOS (Crop Intellect Ltd (CEO), Lincoln, UK)

14:30 **Quantifying the growth and development of cover crops through remote monitoring, establishing a methodology to determine return on investment**
MARCUS TRAVERS (Anglia Ruskin University, Cambridge, UK)

14:45 **A future for Ultra-Low Volume application of biological and selected chemical pesticides**
GRAHAM MATTHEWS (Imperial College, London, UK)

15:00 **TEA**

Session Three: Cropping and Pest Control (Supported by ADAS)
CHAIR: CHARLOTTE WHITE (ADAS)

15:30 **Nitrogen Release From Cover Crops (NiCCs)**
ANNE BHOGAL (ADAS Gleadthorpe, UK)

15:45 **Driving in-field interventions for carabid mediated pest control**
KELLY JOWETT (Rothamsted research, UK)



16:00 **The effect of in field regenerative farming practice on pollinators and pollination of wild plants**
LUCY A CAPSTICK (Game & Wildlife Conservation Trust, UK)

- 16:15 **Regenerative agricultural practices to minimise insecticide use: Lessons from cabbage stem flea beetle in oilseed rape**
SAMANTHA M COOK (Rothamsted Research, UK)
- 16:30 **Direct Drilling cash crops into established stands of clover as a regenerative farming practice**
HENNY LOWTH (Organic Research Centre, UK)
- 16:45 **Changes in weed populations under a system of regenerative agriculture**
WILL SMITH (NIAB, Cambridge, UK)
- 17:00 **Intercropping and precision agriculture – Can we make the twain meet?**
TJEERD JAN STOMPH (Wageningen University, Netherlands)
- 17:15 *Poster Session with drinks reception*
- 19:00 *Conference Dinner, Hilton York*

Wednesday 26th April

Session Four: Education and Policy. (Supported by DIAGEO)

CHAIR: LIZZIE SAGOO (ADAS)



09:00 *Invited speaker*

TBC

ALASTAIR LEAKE (Director of Policy, The Game & Wildlife Conservation Trust, UK)

09:30 **Policy, funding and extension the limitations to Regenerative Agriculture**

JO BELLETT-TRAVERS (Arable, Cambridge, UK)

09:45 **Practical examples of Key Performance Indicators (KPI's) as a tool for payments for ecosystem services**

BOKI LUSKE (Louis Bolk Institute, Netherlands)

10:00 **Policy support for Regen ag: Assessing ELMs**

EMILY NORTON (Research Analyst Rural Research Savills, UK)

10:15 **COFFEE**

10:45 **PANEL DISCUSSION ON FARMER USE OF REGENERATIVE PRACTICES**

CHAIR: KATE SMITH (ADAS)

Panel:

EMILY PADFIELD (Nuffield Farming Scholarships Trust, UK)

DAVID BLACKER (AHDB Strategic Farm North, UK)

FERGUS YOUNGER (Scottish Agricultural Organisation Society Ltd., (SAOS), UK)

12:00 **Lunch**

Session Five: Regenerative Agriculture in Practice

CHAIR: HARRY HENDERSON (AHDB)

13:00 ***Invited speaker***

TBC

RUTH WADE (University of Leeds, UK)

13:30 **Linking arable and livestock farms: Impact of grazing sheep on winter cereals and soil health**

ROBIN L WALKER (SRUC, Aberdeen, UK)

13:45 **Identifying and addressing barriers to the use of regenerative agriculture practices on farms in the north of England**

JEREMY R FRANKS (Newcastle University, UK)

14:00 **Assessing regenerative outcomes from agriculture on Mollisols of the North Central US**

GREGG R SANFORD (University of Wisconsin-Madison, USA)

14:15 **Seeing the bigger picture: Measuring the ecological, social and environmental benefits of regenerative farming**

KATHERINE BERTHON (University of Cambridge, UK)

14:30 **An experimental yield and profit comparison of conservation and conventional agriculture systems**

JOE COLLINS (Harper Adams University, UK)

14:45 **Using regenerative agriculture approach for improving wheat productivity in the Arabian gulf**

MUHAMMAD FAROOQ (Sultan Qaboos University, Oman)

15:00 ***SUMMING UP***

15:15 ***CONFERENCE END***

POSTER TITLES. Poster prize supported by DIAGEO

DIAGEO

P1

Can C2 photosynthesis contribute towards future agriculture? – an investigation into the photosynthetic diversity of wild rocket (*Diplotaxis tenuifolia*)

CATHERINE A WALSH (Lancaster Environment Centre, UK)

P2

Integrating agroforestry into regenerative farming systems using living labs: The REFOREST project

JULIA COOPER (Organic Research Centre, UK)

P3

Investigating the link between nutrition and thermal tolerance to inform the design of multifunctional flower strips

LUCY SERJENT (University of Bristol, UK)

P4
Phenotypic diversity of hulless barley, traits for food barley use, and optimisation for use in cereal-legume intercrops
NICOLA RANDALL (Harper Adams University, UK)

P5
Effects sheep wool: Compost ratio on soil moisture content and chlorophyll content in pots of red clover (*Trifolium pratense*)
SIAN MACKINTOSH (IBERS, Aberystwyth University, UK)

P6
Learning from Innovative Practitioners: evidencing the sustainability and resilience of diverse, pasture fed livestock systems
LISA NORTON (UK Centre for Ecology and Hydrology (UKCEH), Lancaster, UK)

P7
Ponds to pounds, duckweed as a novel protein source
JAVIER ESPINOSA-MONTIEL (University of Hertfordshire, UK)

P8
Foxtail millet (*Setaria italica* L.) landraces as a novel allelic source for climate smart agriculture and nutritional security: Mapping population development, linkage map construction and QTL identification
SHAIK SAMEENA (yogi vemana university, India)

P9
On-farm participatory trials: Improving cereal variety selection in low-input systems
HENNY LOWTH (Organic Research Centre, UK)

P10
Citizens' opinions regarding regenerative grazing: Beef production and system analysis
DANIEL ENRIQUEZ-HIDALGO (University of Bristol, UK)

P11
Agroforestry: Trees and their biotic interactions boost arable yield but do not increase its resilience to biotic shock
COLIN TOSH (Organic Research Centre, UK)

P12
Capturing the value of ecosystem services from silvopastoral systems: Perceptions from selected Italian farms
NINA ROEHRIG (University of Reading, UK)

P13
The potential of small landscape features to increase biodiversity and ecosystem services in arable farmland
TODD JENKINS (Harper Adams University, UK)

P14
Monitoring the impact of changing farming practices across time and space: The Morley Soil and Agronomic Monitoring Project (Morley SAMS)
DAVID CLARKE (NIAB, UK)

P15

Nitrogen recovery and losses in a cereal-based cropping system using different organic fertilisers: FYM, compost, anaerobic digestate (AD) and straw
CATHY THOMAS (Rothamsted Research, UK)

P16

Is Mob Grazing beneficial to soil health and the environment?
POPPY FRATER (SRUC, University of Edinburgh, UK)

P17

Potential benefits of a forgotten nutrient in regenerative farming
AVICE HALL (University of Hertfordshire, UK)

P18

Sesbania brown manuring and sorghum allelopathy suppress weeds, improve soil health, and rice yield in conservation rice-based systems
MUHAMMAD FAROOQ (Sultan Qaboos University, Oman)

P19

Characterising growers who adopt non-inversion, regenerative, crop establishment systems and the information sources and access methods that they rely on
JACK JAMESON (Crop Research Centre Oak Park, Ireland)

P20

A case report of the effects of Regenerative Practices on soil properties in an almond orchard
INÉS SANTÍN (INIA-CSIC, Spain)



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