

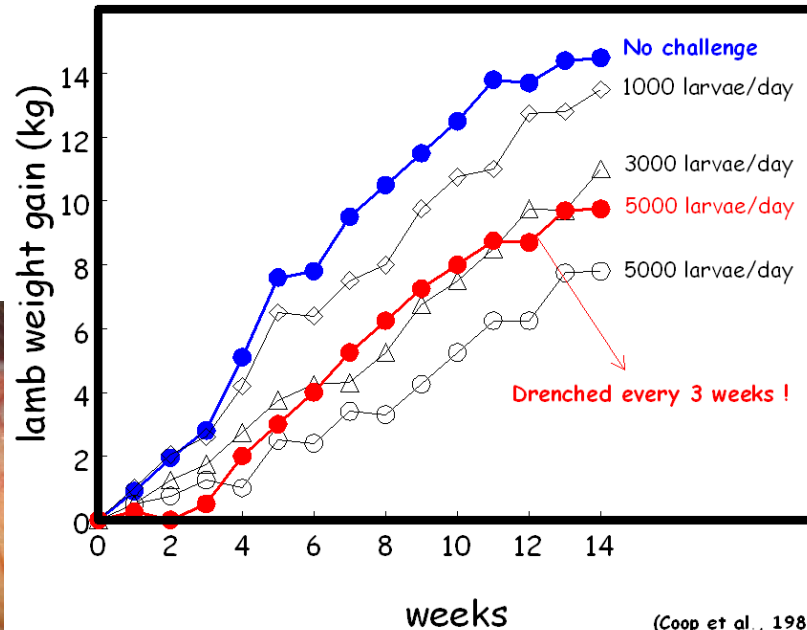
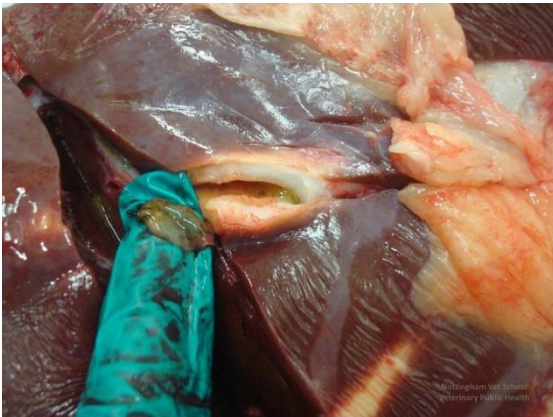
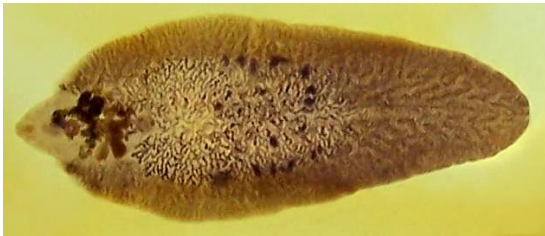
TACKLING THE PARASITOLOGICAL CHALLENGES IN ORGANIC RUMINANT FARMING PRACTICES



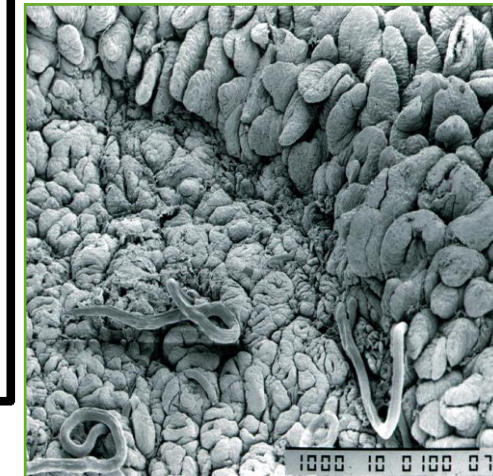
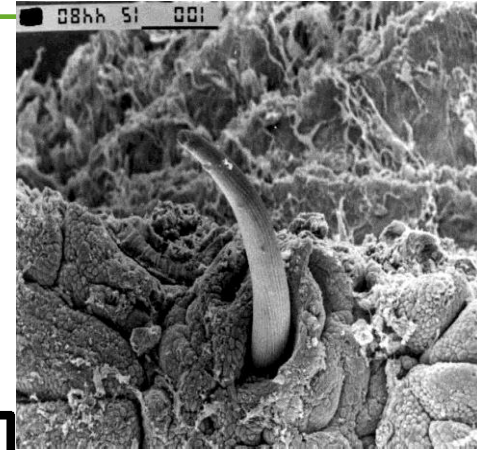
Spiridoula Athanasiadou, ProPara coordinator

PrOPara background

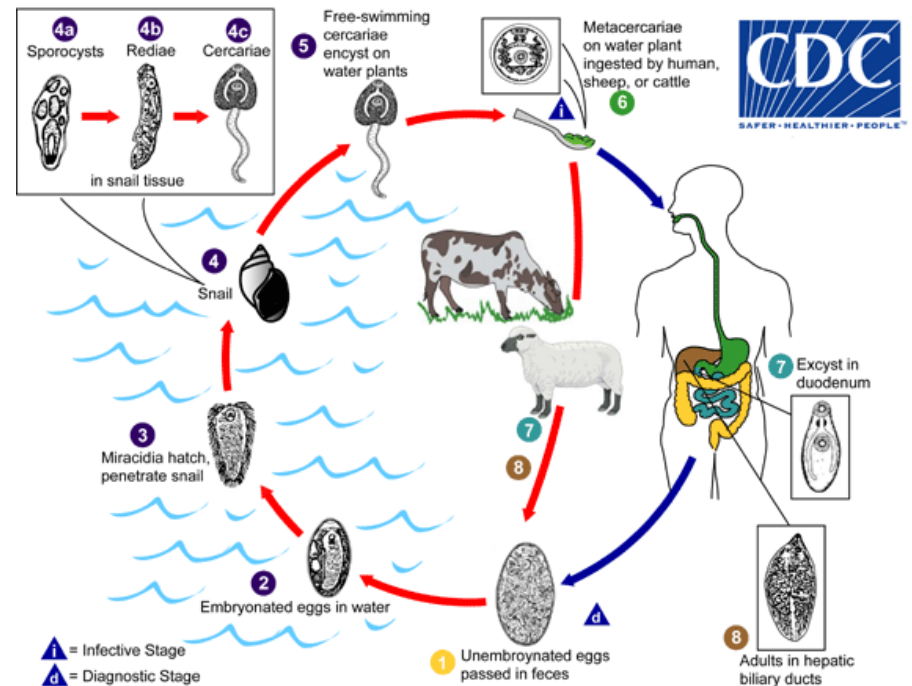
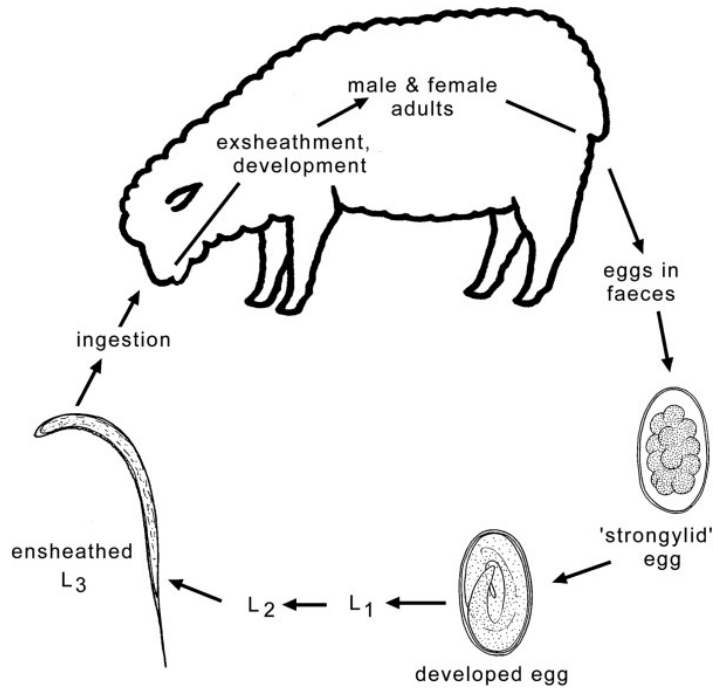
- Gastrointestinal parasitism is a major challenge in health and welfare of organic livestock



(Coop et al., 1982)

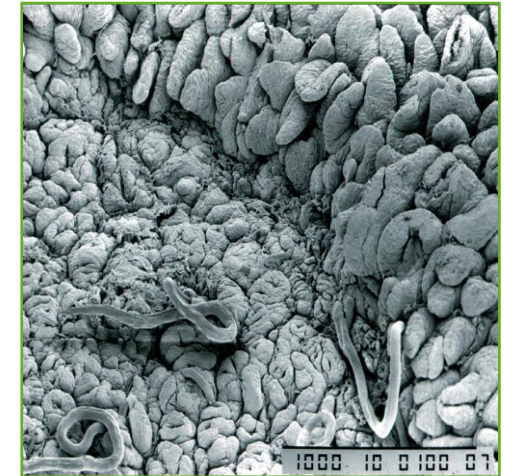
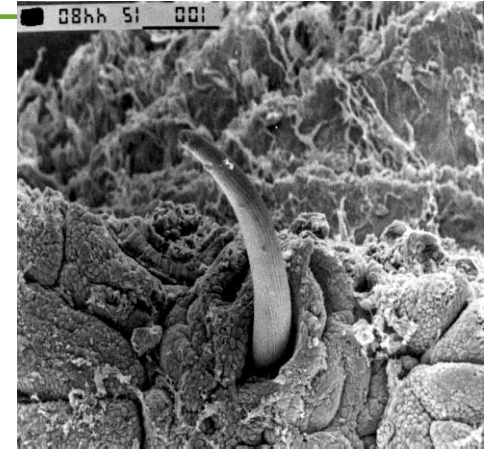


Life cycles



PrOPara rationale

- Despite the low stocking densities and use of improved grazing management practices, helminth infections are still a significant issue in organic systems.
- Previous projects have delivered the underpinning scientific evidence on sustainable control strategies but progress to implementation has been hindered
 - little research at a farm systems level
 - the absence of clear cost-benefit or societal acceptance analysis
 - difficulties in delivering user-friendly innovation and reaching the appropriate stakeholders



PrOPara partners



- FiBL: Steffen Werne, Simon Moakes, Matthias Stolze
- UCPH: Stig Milan Thamsborg, Nao Takeuchi-Storm
- LMU: Gabriela Knubben-Schweizer, Chris v/d Meijden
- WUR: Marion Kluivers, Jan Verkeik
- VA LUHS: Saulius Petkevičius
- LBI: Cynthia Verwer
- INRA: Herve Hoste
- SLU: Johan Höglund
- SRUC: Spiridoula Athanasiadou



PrOPara aims



- Generate information and novel tools that can be readily used by organic farmers to improve animal health and welfare
- Achieve this by targeting the interface between research and dissemination
- Utilise industry datasets (e.g. liver condemnation data) and close links with key stakeholders for our on-farm trials (through the extension services of the partners)
- Evaluate a variety of available means to monitor and control endoparasites in organic ruminants with the aim to maximise their flexibility, relevance and deployment, through accounting for the between farm variation



PrOPara approach

- Perform targeted research at a farm systems level, to fine-tune sustainable parasite control strategies, and/or facilitate the implementation plans
- Pool information generated from the current and legacy national and international research projects and perform cost-benefit and farmers' acceptance analysis
- Evaluate implementation strategies and disseminate them to key stakeholders of the wider organic community



PrOPara structure



- WP1: Project co-ordination and overall management
- WP2: Improving animal health and welfare by means of farm organisation and monitoring
- WP3: Enhance disease/parasite prevention and increase resilience of the host
- WP4: Assess economic impact and farmers' acceptance in implementing alternative/integrated approaches for improved parasite control
- WP5: Stakeholders focused dissemination



Improving animal health and welfare by means of farm organisation and monitoring



- Assess the risk factors associated with the prevalence of liver fluke in organic cattle and sheep farms.



- Develop a user-friendly decision support tool for the control of fasciolosis and evaluate their on-farm relevance.

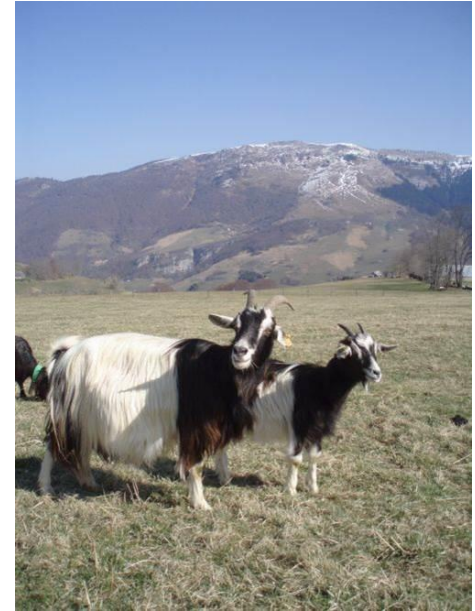
- Evaluate and refine existing online decision trees for assessing the risk for GIN infection in goats.



Enhance disease/parasite prevention and increase resilience of the host



- Characterise host resilience to pasture borne parasites in different breeds of dairy cattle for GIN control.
- Evaluate targeted (selective) treatment methods for GIN control in cattle and goats on farms.
- Perform on farm trials, where alternative strategies for GIN control are put to test by organic sheep farmers.



Assess economic impact and farmers' acceptance in implementing alternative approaches



- Determine the *status quo* of helminth control practices in organic ruminant farms across EU.
- Obtain an in-depth understanding of on farm economic impacts of the implementation of alternative GIN control approaches.
- Conduct socio-economic impact assessment of alternative approaches to GIN control in typical organic sheep and goat farms.



PrOPara deliverables



- Generate **quantitative data on the use of alternatives for GIN control** in organic sheep and goats
- **Economic impacts** of the implementation of alternative approaches for GIN control
- Characterisation of dairy cattle breeds on their **resilience/robustness** to GIN infections
- Estimates of **liver fluke incidence** in organic cattle and sheep farms
- Electronic application ('app') that identifies **potential risk of infection with liver fluke**
- **Web-based decision tree** evaluated by the organic farming community for its applicability, for the control of GIN in cattle, sheep and goats

Highlights on project result and achievements to date



- Data collection for risk factor analysis of liver fluke prevalence in organic cattle and sheep farms (NL, DK, D, LT)
- Prototype of decision support app for fluke control (D)
- On farm trials, where alternative strategies for GIN control are put to test by organic sheep farmers (UK)
- Web based decision support tree for GIN control in goats under development (F)
- Stakeholder engagement events and national level (All)
- Input in MSc and PhD training (All)

Additional achievements until the end of the project



- Risk factor analysis for fluke prevalence in organic farms (CH)
- Determination of the *status quo* of helminth control practices in organic ruminant farms across EU (All)
- Determination of the impact of the implementation of alternative approaches for parasites control on farm economic (UK, F, CH)
- Mathematical model using weight as proxy for drenching in organic cattle (S)
- Field validation of app for fluke control (D, DK)
- International Workshop / national dissemination events (All)

Acknowledgements



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- <http://coreorganicplus.org/research-projects/propara/>

