

28 April 2022

## On-farm trials on alternatives to anthelmintics during the RELACS project

### RELACS partners Soil Association, Scotland's Rural College (SRUC), Naturland and FiBL guide the use of alternatives to anthelmintics on European farms

The RELACS research into alternative parasite control strategies, such as the use of heather as a bioactive forage and the nematophagous fungi *Duddingtonia flagrans*, as a biocontrol agent was discussed in focus groups in four European countries. Farmers interested in testing either alternative volunteered to participate in the trials to gather quantitative and qualitative data on their use. A total of seven farmers (sheep or goats) participated in these trials from three different countries. The experience was mixed, but there is still a lot of appetite in this type of work.

#### On-farm trial set up

On each farm, animals involved in the trial were divided into two groups: i) the treatment group, receiving either the *D. flagrans* or the heather; ii) the control group, which was managed as per farmers' standard practices. The trial lasted approximately 6-8 weeks. The animals in the heather group had access to heather and grazed it daily. Control animals did not have access to heather. Animals in the *D. flagrans* treatment group received 1g spores / 100kg body weight daily in their feed. Control animals received no spores. Control and treatment groups of animals were separated from each other by fences.

Samples and data were taken at two-time points, immediately before the trial and at the end of the trial period and included: i) faecal samples; ii) body weight and/or body condition score (BCS); iii) health information, including anthelmintic treatments if required; iv) farmers' experience of the alternative.

#### Results

For the heather farm trials:

- There was no clear impact (positive or negative) of heather on the faecal egg counts (FEC) – a measure which is used to determine levels of worm infections on farm. On one farm the mean FEC remained the same for the heather group and reduced slightly in the control group with time. On the other, the FEC were very low throughout the trial making it difficult to detect any impact.
- There was no clear impact (positive or negative) on BCS or body weight. On one farm the heather group maintained BCS and the control group incurred a slight loss over time. On the other, the heather group animals lost some conditions and the control group slightly gained over time.
- Health information: An issue with ticks was reported on one farm, with more ticks present in the heather grazing group.
- Farmers' experience: One farmer considered grazing on heather required additional management effort. For example, a larger field required more walking time to check and feed all sheep (done twice a day). Although the undulating heather field provides more shelter for the sheep, there were also more dangerous areas. It was not thought that heather grazing saved much on financial cost. The presence of ticks is an issue to be further considered, as they can cause pain/irritation and transmit diseases.

For fungi farm trials:

- There was no clear impact (positive or negative) of the fungi administration on the FEC. On one farm FEC was reduced following fungi administration whereas on the other it increased



- There was no clear impact (positive or negative) on BCS or body weight.
- Health info: No health problems were reported.
- Farmer's experience: It was reported that the effort required to administer the fungi was extensive, even to a small number of sheep. Farmers' motivation to adopt this alternative in the future would depend on the results obtained, especially if they need to use it on larger groups of animals. Farmers would be looking for an alternative that achieved at least 70% control. They may be prepared to spend 'slightly' more money on alternative control methods than traditional controls.

## Conclusions

Both alternatives tested in on-farm trials with volunteer farmers did not result in any negative consequences in the animals that experienced them. They both showed potential as alternatives to anthelmintics but should not be seen as new drugs to completely replace traditional anthelmintics: rather, they are one of many tools which, together, would help address worm load on animals. Farmers had overall variable experiences. Almost all recognised that an increase in management time may be required, but this was not deemed to be a problem. No significant additional costs were reported, but some of the costs were met by the project. The overall level of parasites on the farms tested was relatively low and maybe this was the main reason a significant effect was not observed. These farmers (and others) are still interested to try and reduce their anthelmintic input and implement different strategies to achieve this.

## About this news story and RELACS

### **Publisher:**

Research Institute of Organic Agriculture (FiBL)  
Ackerstrasse 113, Postfach 219, CH-5070 Frick  
Phone +41 62 865 72 72, [info.suisse@fibl.org](mailto:info.suisse@fibl.org), <http://www.fibl.org>

IFOAM Organics Europe  
Rue du Commerce 124, BE-1000 Brussels  
Phone +32 2 280 12 23, [info@organicseurope.bio](mailto:info@organicseurope.bio),  
[www.organicseurope.bio](http://www.organicseurope.bio)

Scotland's Rural College (SRUC)  
Peter Wilson Building, Kings Buildings, West Mains Road,  
Edinburgh, EH9 3JG, United Kingdom  
Phone +44 (0) 131 535 4000, [communications@sruc.ac.uk](mailto:communications@sruc.ac.uk),  
[www.sruc.ac.uk](http://www.sruc.ac.uk)

Soil Association Scotland  
20 Potterrow, Edinburgh EH8 9BL  
Phone: +44 131 370 8150, [contact@soilassociation.org](mailto:contact@soilassociation.org),  
[www.soilassociation.org](http://www.soilassociation.org)

**Authors:** Spiridoula Athanasiadou, Veronika Maurer, Ana Allamand

**Editors:** Anna Tuzzato, Mathilde Calmels, Bram Moeskops

**RELACS:** 'Replacement of Contentious Inputs in Organic Farming Systems' (RELACS) builds on results of previous research projects and takes far-advanced solutions forward. As a system approach to sustainable agriculture, organic farming aims to effectively manage ecological processes whilst lowering dependence on off-farm inputs. The RELACS partners will evaluate solutions to further reduce the use of external inputs and, if needed, develop and adopt cost-efficient and environmentally safe tools and technologies.

**Project website:** [www.relacs-project.eu](http://www.relacs-project.eu)

**Social media:** Facebook ([RELACSeu](https://www.facebook.com/RELACSeu)) & Twitter ([RELACEeu](https://twitter.com/RELACEeu))

© 2022

