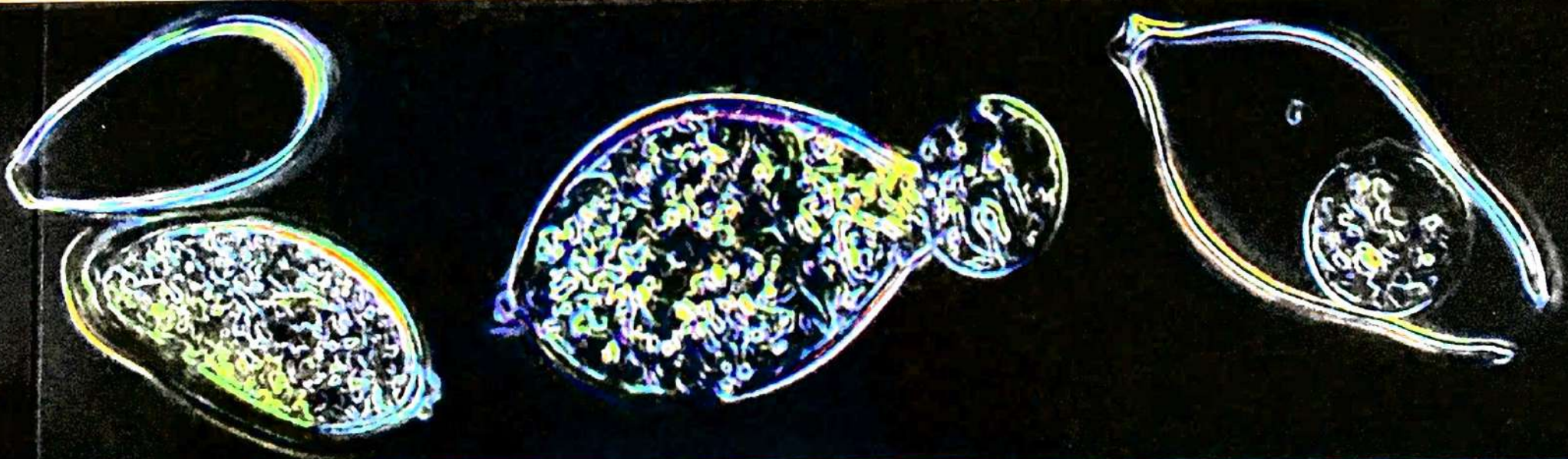


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Modern Fungicides and Antifungal Compounds IX



**Proceedings of the 19th International
Reinhardtsbrunn Symposium
April 7 – 11, 2019 Friedrichroda, Germany**

Replacement of Contentious Inputs in Organic Farming Systems (RELACS) – a comprehensive Horizon 2020 project

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INTRODUCTION AND OVERVIEW OF THE PROJECT

Organic farmers adhere to high standards in producing quality food while protecting the environment. However, organic farming aims for its improvement continuously to keep meeting its ambitious objectives. The project 'Replacement of Contentious Inputs in Organic Farming Systems' (RELACS) is fostering the development and adoption of cost-efficient and environmental safe tools and technologies to:

- Reduce the use of copper and mineral oil in plant protection,
- Identify sustainable sources for plant nutrition, and
- Provide solutions to support livestock health and welfare.

For preparation of the project, the progress achieved over the past decade by research, industry or farmers to replace these inputs was critically reviewed and the technology readiness level (TRL), cost-efficiency and potential for rapid adoption and implementation of alternatives was assessed. Bottlenecks for successful implementation of alternatives were also identified and appropriate actions to facilitate innovation and implementation were devised.

The project was developed by involving actors from research, farming, advisory services and industry from the very start, hence implementing a truly multi-actor approach. RELACS has 29 direct and third-party partners from 13 countries and is coordinated by the Research Institute of Organic Agriculture (FiBL) in Switzerland. RELACS is funded through Horizon 2020, the European Union's research and innovation framework programme under grant agreement No. 773431.

REPLACEMENT OF CONTENTIOUS INPUTS IN PLANT PROTECTION

The need for copper replacement has been recognized already in the 1990ies and international research initiatives were launched by the European Union in 2001 (EU-funded project Blight-MOP). Recently, the European Union launched a specific call (Call SFS-08-2017 Organic inputs – contentious inputs in organic farming) as part of the H2020 research programme in order to reduce the dependency of organic farming on problematic inputs, including copper and mineral oil.

RELACS builds on results of previous research projects and takes far-advanced solutions forward. In the case of copper reduction, plant extracts from *Glycyrrhiza glabra*, *Larix decidua*, and a milk derivative that already proved to be effective (Schmitt et al. 2017), were adopted. In addition, another promising plant extract (SUMB) was included. The crops and diseases addressed in the project are grapevine (infected by *Plasmopara viticola*), apple (*Venturia inaequalis*), and protected cultivation of cucumber (*Pseudoperonospora cubensis*) and tomato (*Phytophthora infestans*).

In the case of reduction of mineral oils, a plant extract from *Clitoria terneata*, orange oil and a vibrational mating disruption technique are applied and refined.

The products and management practices will be evaluated in different pedo-climatic and farming conditions in the EU and other Mediterranean countries. RELACS will develop implementation roadmaps by analysis of the socio-economic conditions required for acceptance and adoption of alternatives and will provide scientific support for relevant EU policies to develop fair, reliable and implementable rules. Rapid dissemination and adoption of techniques along the food value chain will be achieved via established dissemination structures in 12 European countries.

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