

BioVIM

Reduction of pesticide use in viticulture



Inspiration

Viticulture is an important industry in the Moselle region of Luxembourg. Growing grapes for high-quality wines with a low use of pesticides is particularly challenging, because non-chemical agricultural control methods such as annual crop rotation or tillage systems that interrupt the life cycle of pests and pathogens cannot be used in viticulture due to the perennial character of the crop. The humid climate of the Moselle valley favors the development of fungal plant pathogens that pose a threat to the crop and in turn to wine quality virtually every year.

Furthermore, some pests are spreading northwards, probably due to climate change. A recent example is the spotted-wing vinegar fly *Drosophila suzukii* that was first observed in Luxembourg in 2014 and needs to be considered in the crop protection strategies since then. A decrease in pesticide use is desirable to reduce production costs as well as the risks associated with the potential side effects of pesticides on non-target organisms.

Innovation

The BioViM project will monitor the most damaging pests in viticulture by traditional visual assessments on the ground as well as by innovative remote sensing approaches. Disease hotspots and their evolution will be identified as a prerequisite for the application of variable rate technologies. The results of the project are expected to pave the way to precision viticulture techniques where emerging epidemics are controlled at very early stages exclusively at those locations, where they actually start. The project will contribute to the reduction of pesticide use in integrated viticulture as well as to the risk assessment concerning damage inflicted by pests in biological viticulture.

Impact

The BioViM project will result in:

- enhanced knowledge about options of saving pesticides in viticulture by using variable rate technologies
- building blocks for the implementation of European and national programmes focused on reducing the risks of pesticide use
- the identification of existing and the development of new management practices that help to safeguard or improve wine quality
- forecast models and decision support tools for diseases that allow growers to better organise their workflows and achieve optimum efficacy of control actions
- publications on locally interesting findings and techniques in applied journals and publications on generally interesting findings and techniques in international journals

Partenaires

University of Florence (IT) , Agroscope (CH) , University of Natural Resources and Life Sciences Vienna (AT) , School of Wine- and Fruit Growing in Krems (AT) , State Viticulture Institute Freiburg (DE) , Pennsylvania State University (US) , Federal College and the Federal Office for vineyards and orchards in Klosterneuburg (AT) , Hochschule Geisenheim University (DE) , Dienstleistungszentren Ländlicher Raum Rheinland-Pfalz (DE)

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Institut Viti-Vinicole

Contact

5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
tél : +352 275 888 - 1 | LIST.lu

Dr Marco BEYER (marco.beyer@list.lu)
Dr Daniel MOLITOR (daniel.molitor@list.lu)
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