

## Sentinelle III

Warning and advisory platform for the main pests and diseases in the major crops in Luxembourg



### Inspiration

Plant pests and diseases cause yield losses and reduce the quality of plant materials. Depending on the crop grown, yield losses range from about 50% to 80% if pests, pathogens, bacteria, viruses and weeds are left uncontrolled. Avoiding the damage these organisms cause requires the creation of an unfavourable environment for their development by using, for example, resistant varieties, crop rotation, tillage systems interrupting the pathogen's lifecycle, or the use of pesticides. Furthermore, an accurate diagnosis is needed to select effective treatments against the pest or pathogen.

### LIST innovation

In the context of national and EU goals, crop protection strategies and technologies are developed and communicated to farmers, teachers and advisors that keep pesticide use to a minimum at the same time safeguarding yield and quality of plant materials produced in Luxembourg. Project outputs include recommendations for optimizing integrated cropping systems, decision support systems for managing pests and diseases in the major crops, molecular tools for the accurate identification and quantification of pests and pathogens, pest and disease warning bulletins, conference contributions and publications in newspapers and scientific journals.

### Impact

The project contributes to:

- the safeguarding of yield in the major crops grown in Luxembourg
- maintaining a high level of food safety with a special focus on Fusarium mycotoxins
- the reduction of pesticide use
- the protection of bees and other beneficial organisms in agricultural production systems
- prolonging the duration of efficacy of insecticides and fungicides
- quick detection of emerging pests and pathogens

### Partners

Chamber of Agriculture (LU) , Various farmers in the regions of Reuler, Christnach, Burmerange and Kayl (LU) , Agricultural Technical Lyceum (LU) , University of Liège (BE)

### Financial Support

MAVRD - Administration des Services Techniques de l'Agriculture (LU)

### Contact

5, avenue des Hauts-Fourneaux  
L-4362 Esch-sur-Alzette  
phone: +352 275 888 - 1 | [LIST.lu](http://LIST.lu)

Dr Marco BEYER ([marco.beyer@list.lu](mailto:marco.beyer@list.lu))  
© Copyright April 2025 LIST

LUXEMBOURG  
INSTITUTE OF SCIENCE  
AND TECHNOLOGY

