



IPM practices for soil-borne diseases suppression in vegetables and arable crops

How to suppress soil-borne diseases (fungi and nematodes) in vegetables and arable crops and how to enhance cross-fertilisation between different crops and agricultural systems?

The EIP-AGRI Focus Group on soil-borne diseases brought together 20 experts to find answers to this question. The Focus Group made recommendations on new developments in techniques to suppress soil-borne diseases. The Focus Group stated that a good soil health strategy is the starting point.

Soil-borne diseases are major yield-limiting factors and difficult to control and applied knowledge on how to use suppression techniques is limited. So, this Focus Group brought together current knowledge of innovative techniques for soil-borne disease suppression, such as:

- ▶ the use of compost and organic matter amendments
- ▶ the use of green manure and cover crops
- ▶ biofumigation
- ▶ anaerobic soil disinfestation
- ▶ solarisation
- ▶ inundation
- ▶ the use of biological control agents
- ▶ grafting

They started their work in November 2014 and delivered the report in October 2015.

“Soil-borne diseases are a big threat, reducing quality and quantity of yield. Implementing soil health methods like crop rotation, cover crops and compost can help prevent soil-borne diseases. If you dig a little, you can learn a lot!”

- Alfred Grand (Austria), expert from the EIP-AGRI Focus Group on IPM practices for soil-borne diseases suppression -

Ideas for Operational Groups

- ▶ on-farm production of compost and compost quality indicators
- ▶ on-farm implementation of green manure and biofumigation crops
- ▶ on-farm grafting techniques and testing of resistances against local strains
- ▶ recognition of symptoms, developing and testing diagnostic tools together with farmers
- ▶ developing tools on soil quality management
- ▶ farmer networks applying solarisation, anaerobic soil disinfestation or inundation
- ▶ networking actions to optimise the introduction and use of biological control agents

Research needs from practice

- ▶ development of sampling strategies and diagnostic tests to improve monitoring
- ▶ development of application protocols for biological control agents
- ▶ indicators to predict the suppressing quality of compost and other organic amendments
- ▶ understanding the mechanisms and functions of types of organic matter and biofumigation
- ▶ the host status of green manure and the development of new green manure crops
- ▶ defining region specific criteria for anaerobic soil disinfestation
- ▶ widen the scope of grafted crops and the development of grafting machinery

More ideas for Operational Groups and research needs available in the Focus Group report

Other recommendations

- ▶ long-term experiments are essential to understand the validity of measures taken
- ▶ develop easy to use visualisation tools (GIS) and decision support systems such as apps
- ▶ communicating with farmers with a realistic outlook on costs and benefits
- ▶ organising communities of practice on integrated management of soil-borne diseases
- ▶ other possibilities were mentioned such as plant communication, old techniques and many more

More information on the EIP-AGRI website

Focus Group webpage	Focus Group report	Ideas out of the box
Infographic: a soil health strategy and its interaction with the soil pdf version - png version		Mini-papers on techniques, monitoring, IPM transfer

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