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Results of the EIP-AGRI Focus Group on soilborne diseases

Vincent Michel
Agroscope



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sustainable management through knowledge and practice'

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

Soil-borne diseases are major yield-limiting factors in vegetables and arable crops. They are difficult to control and applied knowledge on suppression techniques seems to be limited.

Therefore, the two main questions to be answered by the focus group were:

How to suppress soil-borne diseases (fungi and nematodes) in vegetable and arable crops?

How to enhance cross-fertilisation between different crops and agricultural systems?



How was this done?



Two meetings,
in Alicante (2014) and Harleem (2015)

20 experts and 4 facilitators from
13 countries

First meeting: Problems defined and tasks
distributed (mini-papers)

Second meeting: Mini-papers presented
and final conclusions



An integral approach to soil health

Based on the definition of Integrated Pest Management (IPM) from European directive 128/2009/CE.

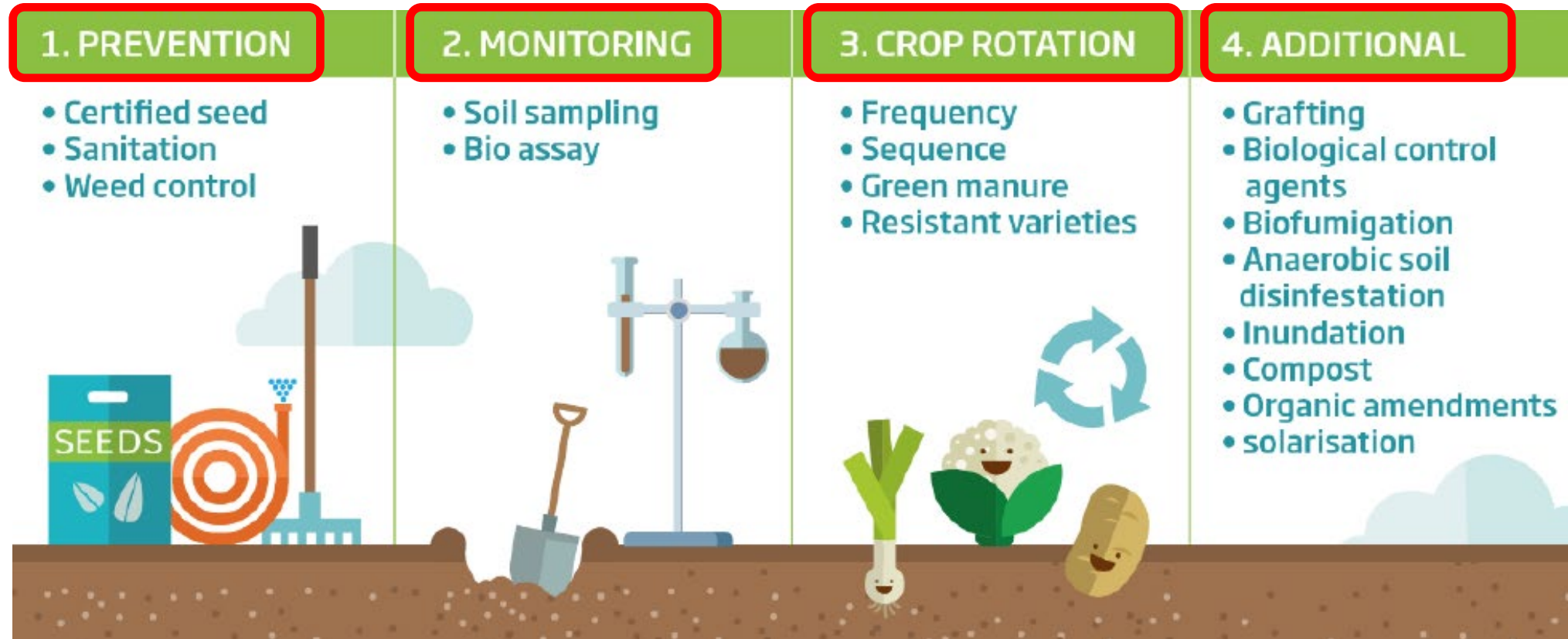
The main element of this definition is that chemical prophylactic (preventive) treatments should not be applied.



Images:
Gullino *et al.* 2009



A soil health strategy always combines the following different elements:



General fail factors and hurdles

- 1) Too high frequency of profitable crops for economic reasons
- 2) Lack of awareness
- 3) Lack of knowledge and infrastructure
- 4) Lack of knowledge of indicators that predict the efficacy of preventive (soil health) measurements
- 5) In agricultural education, soil-borne diseases are not sufficiently highlighted
- 6) Brain drain of knowledge
- 7) Free trade of planting material and farm saved seed
- 8) The ownership situation of soil



What needs to be done?

A list of **28 research needs from practice** were defined in Annex 7 of final report.

A few examples are:

- Development of sampling strategies and diagnostic tests to improve monitoring
- Indicators to predict the suppressing quality of compost and other organic amendments
- The host status of green manure and the development of new green manure crops
- Defining region specific criteria for anaerobic soil disinfestation

A list of **30 suggestions for Operational groups** were defined in Annex 8 of final report. A few examples are:

- On-farm production of compost and compost quality indicators
- On-farm implementation of green manures and biofumigation crops
- Developing tools of soil quality management
- Recognition of symptoms, developing and testing diagnostic tools together with farmers



Best4Soil thematic network

Four members of the **Focus group Soilborne diseases** submitted the Best4Soil thematic network proposal to Horizon 2020.

Main goal is the promotion of 4 best practices and the use of sound crop rotations.



The proposal was accepted and the project started in fall 2018

www.best4soil.eu



EIP-AGRI seminar

Healthy soils for Europe: sustainable management through knowledge and practice

Online – 13-14 April 2021

All information of the seminar is available on
www.eip-agri.eu

On the event webpage
<https://ec.europa.eu/eip/agriculture/en/event/eip-agri-seminar-healthy-soils-europe-sustainable>

