

# Coopid



## A decision support system for safe and sustainable vegetable greenhouse production

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### The problem

Vegetables are fundamental in human nutrition: they provide suitable nutrients for the functioning of the human body.

**Vegetable greenhouse production is on the rise for advantages such as its independence from climate changes or external weather conditions, however, it also fosters favourable conditions for the appearance of pests and diseases, which trigger a dependency of chemical pesticides.** The latter leads then to an increasing resistance of pests and diseases, creating a negative cycle.

Moreover, **the presence of pesticide residues in vegetables is a major bottleneck in the international trade of food commodities, and a cause of growing concern for the human health.**

### The solution

**A Decision Support System based on a comprehensive evaluation of the balances and imbalances of nutrients and contaminants in greenhouse systems** – which requires detailed analysis of their native contents in soils, agro-chemicals, irrigation water, and vegetables (removal).

The success of the pest and disease control is determined by the regular examination of crops, the timely detection of the pests, the accurate monitoring, diagnosis and determination of their species composition and the methods of reducing populations.

### Benefits

The use of methods such as the **Decision Support System**, which combines precision monitoring and warning, would lead to efficient pest and disease control and reduced need of pesticides.



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Project  
Coordinator



Communication  
leader





# Recommendations

1. Place **plants at optimal distance** to allow effective air ventilation and reduce resources competition

2. Practice **adapted plant nutrition**, soil fertility and irrigation management, correct timing of sowing or planting to reduce pests

3. Apply precise **daily monitoring** with field/plant cameras of the economically important key pests and diseases

4. Determine **pests' economic thresholds**

5. Provide in a timely manner of **biological and chemical (if necessary) control measures**

6. Spray with **biological pesticides** and/or use of colour traps

7. Inoculate with **beneficial microorganisms** and/or release of natural enemies of pests



## About COOPID and this practice abstract

This practice abstract was elaborated in the COOPID project, based on the EIP AGRI practice abstract format. © 2023

**Project duration:** from January 2021 to June 2023.

**Goal:** foster knowledge transfer among primary producers and the uptake of biobased business models in the EU primary sector.

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