

More sustainable, resilient, and competitive food systems through the development of intermediate food value chains



PRACTICE ABSTRACT No: 35

Vinegar and whey : how to use them for plant protection

Basic substances are one of the categories of active substances defined in the Plant Protection Products (PPP) Regulation EC 1107/2009. They can be useful to replace synthetic pesticides, and address the growing request from consumers for fruits and vegetables with no or a reduced amount of pesticide residues.

Among them, vinegar and whey, which fulfil the criteria of a foodstuff, have been approved for some uses in agriculture.

Considering vinegar, it has to contain a maximum of 10% of acetic acid. It can be used as fungicide and bactericide for seed treatment of various crops on the farm. For vegetable crops (carrot, tomato, bell pepper, cabbage), vinegar can be used pure. For cereals (wheat, spelt, barley), it needs to be diluted as follows, just before application : 1 liter of vinegar in 1 liter of cold water to disinfect a quintal of seeds. No need to rinse. Vinegar can also be used as a disinfectant for mechanical cutting tools.

Considering whey, uses as fungicide and virucide are approved. Whey solution can be applied to plants only in the growth stages before flowering, and leaves from treated plants can't be used for human consumption. In practice, whey can be used as a foliar spray for cucumber, zucchinis, grapevine and tomatoes, against powdery mildews and tomato yellow leaf curl virus. It has to be diluted as follows : 0,6 to 3 liters of whey per 100 liters of water (except for grapevine : 6 to 30 liters of whey per 100 liters of water). Finally, whey can be used as a disinfectant against viruses for gloves and mechanical cutting tools : dipping in a whey solution (5 liters of whey per 100 liters of water). This solution cannot be employed for treating gloves during or right before harvest.

Available and operational in all EU, vinegar and whey are perfect tools to provide to small-scale producers as known, easy-to-use, less dangerous, and environmentally more respectful Plant Protection Products. Their use is in line with the restriction on the application of chemical PPPs and the principles of European Green Deal.

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End Users

Consumer, Farmer & Cooperative, Policy maker

Country

Europe



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ABOUT FAIRCHAIN

The FAIRCHAIN project launched in 2020 and coordinated by INRAE, is developing intermediate food value chains in the fruits and vegetable and dairy sectors. Through technological, organizational and social innovations and by developing business models FAIRCHAIN will enable small and mid-size stakeholders to scale up to supply fresh, sustainable and high-quality food products to consumers at a regional level.

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