

# EcoOrchard: Boosting agro-biodiversity in European apple orchards

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Research institutes and universities of nine European countries are involved in the research project EcoOrchard to develop appropriate strategies to promote functional agro-biodiversity (FAB) in organic pome fruit production.

To figure out the current stand of FAB and to identify specific differences depending on the national context, a wide survey was conducted among advisors and farmers in 2015. This study revealed that a majority of farmers were using FAB at various levels and were interested in a 'monitoring-tool' to assess FAB in their orchards. Therefore four easy-to-use methods have been tested and modified from participative farmers in 2016 and 2017.

For sharing information on how to enhance functional biodiversity a web-based platform has been created in the transnational context: the EBIO-Network (<http://ebionetwork.julius-kuehn.de>).

It offers practical, comprehensive knowledge, e.g. technical leaflets, a voluntary stakeholder EU map, as well as a literature database on functional agro-biodiversity.

On the scientific part, synchronized field trials have been performed at different sites in seven countries in 2015, where flower strips were sown into the interrows of the orchards. Natural antagonists of pests like Syrphidae,

Coccinelidae and parasitoids of codling moth are supposed to be promoted with these additional floral resources.

To monitor the prevailing pest pressure as well as the state of biodiversity, various monitoring methods were applied in a standardized scheme: visual control, beating sampling, corrugated cardboard bands, sentinel prey cards and assessment of fruit damage.

In order to optimize the plant composition of flower strips, additional studies on effects of flowering plants on main pests and beneficials are carried out. Their requirements for food resources, particularly nectar and pollen, have also been investigated in adjoining laboratory and field experiments at JKI Darmstadt, Institute for Biological Control.

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