Functional agrobiodiversity techniques to support beneficial organisms in apple orchards of Latvia

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The level of functional self-regulation in agroecosystems is largely dependent on the level of plant and animal biodiversity. Biodiversity provides a variety of ecological services including recycling of nutrients, regulation of microclimate and local hydrological processes, suppression of undesirable organisms and detoxification of noxious chemicals. The higher is diversity of organisms in the ecosystem the higher is stability of the respective ecosystem.

Functional agrobiodiversity refers to those elements of biodiversity on the scale of agricultural fields or landscapes, which provide ecosystem services that support sustainable agricultural production and can also deliver benefits to the environment and the public well-being. Distribution of arthropods in fields have been related to the distribution of different habitats, microclimatic conditions, prey density and proximity to particular landscape features.

It is essential to promote agrobiodiversity and to support farmers in combining high-yield and sustainable and environmentally friendly farming. So far there were no information which agrobiodiversity supporting techniques have been used by farmers of Latvia. In the frames of the international CORE Organic Plus project EcoOrchard "Innovative design and management to boost functional biodiversity of organic orchards" information about FAB techniques used in biological apple orchards of Latvia were obtained. The most wide spread techniques used by biological apple growers are hedgerows, shelters and habitats for animals, water bodies within or next to the orchard, release of the beneficial insects and vertebrates, caulescent plants next to the orchards, as well as reduction of effects of environmental degradation.

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