



TEST AREA n°4

Mazowieckie and Lubelskie regions, Poland



Innovative approaches for the soil decontamination and risk monitoring for long term orchard sites in Mazowieckie and Lubelskie regions, Poland

Scale

Regional scale, involving several long-term apple and hop plantations.

Special focus

Implementing improved management of orchards and hop plantations, including better plant protection programmes, replacement of creosote-treated poles, stimulation of biological methods of soil decontamination, soil monitoring, and reduced transfer of contaminants to groundwater, and the development of management tools and financial models.

Ambition for the end of the project

These test areas will be used to assess risk caused by soil contamination, prioritize methods for improving soil health and contamination reduction, assess barriers and implement financing models for improving soil management and facilitating decontamination processes. A site prioritization method will be developed that can be used for the improvement of soil health in the northern pedo-climatic zone.

Ambition beyond the project

- Development of risk management and soil health improvement solutions for intensive orchards and hop plantations in the EU.
- Wide application of low-cost measures to improve soil health in orchards and hop plantations across Europe.
- Creation of an orchard-based Soil Mission Living Lab.

Type of soil contaminants

Fruit plantations are regularly treated with pesticides, including intensive use of glyphosate for weed control. Residues of historical contaminants such as currently banned DDT, g-HCH are also found in soil. Hop fields are at risk linked with PAHs present in creosote oil used as a wood preservation for hop poles.

Current status of Test Area

There are several orchard sites with degraded soil health and soil biological activity. They contain elevated concentrations of currently used pesticides and historical pollutants like DDT, Endosulfan or g-HCH (illustrated below).



Hop plantations (illustrated to the right) may be contaminated with creosote containing PAHs that exhibit carcinogenic and teratogenic effects on humans and toxic effects on soil organisms. Therefore, some producers are in transition to safer and more sustainable hop production systems. Pilot programmes of soil management and contamination monitoring have been tested and implemented.

