

## **INNOVATIVE FARMERS PROJECT**

Fifteen UK hop growers are taking part in a new Innovative Farmers field lab project exploring alley cropping and how to improve hop soils. Innovative Farmers is a not-for-profit network that gives farmers and growers research support and funding on their own terms. Led by Hutchinsons, working with the British Hop Association and East Malling Research, and supported by Charles Faram, the growers are hoping to develop practical ways to improve soil structure and organic matter by using carefully chosen cover crops.

The soil challenges faced by hop growers are unique: plants are grown from perennial stock, live for up to twenty years, and are cut back when harvested. When hops are harvested, the entire plant is removed from the hopyard so the organic matter is not returned to the soil as part of the normal cropping cycle. This results in soils becoming depleted. Some growers import and spread OM but it may be easier and better to grow it in situ during the autumn/winter via the use of cover crops. Soil compaction can also be a problem, with the alleys being subjected to regular traverse by heavy vehicles. The field lab will explore cover cropping as a way of putting organic matter back into the soil to reduce depletion and maintain healthy soils, both for existing plants and future crops.

It was agreed that the following soil parameters will be measured:

- Earthworm counts
- Water filtration rate
- Visual evaluation of soil structure
- OM Content
- Soil Mineral Nitrogen Content
- Solvita test (CO<sub>2</sub> release as an indicator of biological activity) if practical

A number of parameters must be met by any candidate cover crops:

- Suitable for late summer/autumn sowing
- Easy to establish, tolerant of poor seedbeds
- Fast growing
- Easy to kill or manage in such a way that it does not become a problematic weed
- Ideally, exerts allelopathy, thereby reducing the germination of other weeds
- Mixed stands may be more successful and resistant to pest and disease than single species

In areas where wilt-susceptible varieties are grown, the cover crop must not become a reservoir or nursery for wilt. Further research and consultation are needed but this may restrict the options to monocots such as rye (excellent leaching prevention, useful OM soil structure and improvement), black oat (excellent leaching prevention, excellent OM, excellent soil structure improvement) or a rye/black oat mix.

The project runs from September 2017 to September 2018 and each participating farm has to provide a monthly report with an initial evaluation expected in spring 2018. Results of the experiment will be available and published in due course.