



Organic Hop Varieties Field Lab



Context

This field lab aimed to improve the availability and choice of UK-grown organic hops by convening stakeholders across the organic hop supply chain, including breeders, merchants, farmers and brewers. Hop acreage has reduced considerably over the last 50 years due to changes in brewing and consumer tastes, disease and insect pressure and weed competition. UK hop production has potential to increase to meet current UK demand, as climate change threatens the supply and quality of imported hops. The process of taking a new variety from identification to commerce can take up to eleven years, so the field lab helped accelerate this process.

Take home messages

- The field lab involved participatory varietal selection of hops that are suited to organic, low input farming systems. The whole supply chain approach addressed issues collectively and the group to share expertise and learnings.
- The best performing varieties were Endeavour, bred by Wye hops, and Harlequin and CF 302, both bred by Charles Faram
- The three varieties have been continued at the sites, with one of the farms doubling their overall hop production as a result

Trial design

The group identified and trialled hop varieties on commercial farms test their compatibility with organic production. It was particularly important to find varieties tolerant to the predicted milder and wetter winters and springs.



Across three years, Tedney House Farm in Worcestershire (left) trialled seven varieties dwarf hedgrow varieties against a control (Challenger), and Woodlands Farm in East Sussex tested six tall varieties against a control (Sovereign). Both helped select the varieties and recorded their observations on factors such as early season vigour, ripening, pests and weed cover, informed by an assessment tool created by the Organic Research Centre.

Hop merchant Charles Faram conducted harvest yield and lab analysis of hop quality and Stroud Brewery ran test brews and participatory taste testing.

Findings

The farmers selected the following varieties as best performing, with promising suitability for organic systems:



| Variety | Field Observations | Harvest and brewing analysis |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Endeavour | Disease resistant, very tolerant of wilt, quite resistant to HPM, susceptible to downy mildew in a wet year. | 67kg yield. Tasting notes of blackcurrant, spice and lemon. Dual use. |
| Sovereign | Control variety, stayed clear of disease and pests. | |
| Harlequin | Excellent disease resistance, bine virtually self-training, respectable yield of heavy, easily picked cones. Genuine contender to mitigate against Challenger's unpredictability. | 65kg yield. Aroma and tasting notes of pineapple. Main use as dry hop. |
| CF 302 (3294) | Weak growth in 1st year but vigorous by 3rd year. Easy training, large bold cones, picked easily. Relatively disease free; rebounded very easily from some downy mildew as disease pressure eased, and no downy mildew in year 3 despite the wet season. | 1.5kg harvested. Floral, tropical fruit and melon tasting notes. Main use as dry hop. |

Tedney House Farm have Farm decided to double acreage of Endeavour to 9 acres. Woodlands Farm will double the area of Harlequin and continue to trial 3294, which was revealed as the favourite hop in pilot brew tasting.

Results for all varieties are in the [full report on the Innovative Farmers website](#).

Perspectives from the farm

"The field lab allowed our farm to develop a spread of varieties to make the organic hop growing enterprise to become more resilient to disease and weather pressure and increase the area planted from 2.5 to 5 acres. Involving the whole supply chain has been a huge plus of this field lab."

- Tom Upton, Woodlands Farm, East Sussex

Recommendations and next steps

The farmers, hop merchant and brewer will continue working together to test new hop breeding lines. Topics of interest for future work include:

- Comparing the environmental footprint of organic and conventional hop and beer production
- Learning from European organic hop growers to find solutions to pest and disease issues
- A survey of organic hop production practices in the UK
- Conventional hop growers appear increasingly interested in organic practices with minimal inputs, due to an increase in the cost of artificial inputs.

Useful resources:

[Field Lab article in the Independent](#)

[Small scale and organic hop production](#)

