



NEWSLETTER 2017-18

Welcome to Rob

Wye Hops is delighted to welcome Rob Brown to the hop breeding team. Rob will join us at the start of October following the completion of his MSc at Royal Botanic Gardens, Kew. He will take up a PhD studentship looking at the application of new molecular hop breeding techniques to speed up the breeding programme and offer genetic insights into new areas including flavour. The project is funded through Wye Hops by the E H Wade Fund, a charitable trust set up by the daughter of one of the co-founders of the Wolverhampton and Dudley Breweries and is jointly provided through NIAB-East Malling Research and the University of Reading. In anticipation of the appointment, Wye Hops has generated four large mapping populations of hop seedlings and, during 2018, the segregation for several traits including powdery mildew resistances, sex, stature and aphid resistance was recorded in these progenies. Also, staff from EMR have individually sampled leaves from all 1200 seedlings ready for DNA extraction.



Rob Brown enjoying a pint

Fuggle substitutes brought on

When Wye Hops was set up in 2007, the new goal of finding a wilt-resistant selection with an aroma very similar to Fuggle was set. Although an ambitious target which had not been achieved during the 100 years of breeding at Wye College, the importance of this variety to the British hop industry, its growers and brewers, and the threat posed by the continuing spread of wilt disease meant that it was a vital objective. Reports in previous newsletters have mentioned the frustrations of matching the aroma. Two further selections in advanced plots from crosses made in 2010 and 2012 were used in pilot brewing trials from the 2017 harvest, kindly conducted through St Austell Brewery. Tasters thought that these were the closest match yet and could partially substitute for the original Fuggle. The BHA have started the propagation of stocks for planting on several carefully selected farm sites in winter 2018 and 2019.

New Flavours to farms

Wye Hops has been developing new varieties with distinctive, strong and unusual flavours in the crosses made between 2011-2013. These have been assessed and will be marketed exclusively with Charles Faram and Co. Ltd. From over 2,500 new seedlings, choosing on green aroma in the field followed by dried aroma in the showroom has produced just over 60 selections. All are being maintained at Wye Hops. Taking into consideration agronomic performance, wilt test information and other observations, the most promising 11 selections were propagated in spring 2018 and distributed as cuttings to establish on farms in both growing regions and covering all producer groups. Further assessment of the 60+ selections will continue and further potential new impact varieties will be going to farms over the coming few years. Watch this space

Contacts

If you have any comments or questions about the articles in this newsletter, or would like more detailed information, please contact Peter Darby

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The Directors of Wye Hops Ltd are Ali Capper, Anna Clinch, Clive Edmed, Andrew Hoad, and Simon Parker, and they would also be pleased to give you further information about the work.

Aphid-resistant selections move forward

Selection 37/15, mentioned in last year's newsletter as showing strong resistance to aphid colonisation at its farm trial site, has been used for pilot brewing trials in comparison with 'Boadicea'. Trials were kindly conducted by Bath Ales using their Golden Hare recipe. The result was unanimous amongst all the tasters that the trial hop was far more pleasant, with a more rounded bitterness which gave better drinkability.

At harvest 2017, two further selections were noted as being of commercial interest in our advanced plots. Although recording of aphid infestation proved to be exceptionally difficult during 2018 due to the low numbers of aphids migrating to hops and the exceptionally high temperatures limiting any colonisation, both have been confirmed as resistant to aphids and the most promising, coded 42/10, is being propagated for establishment of a farm trial.



Hop aphids colonising a leaf

Irrigation saves the day

The seedlings from crosses made in 2017 were raised in the glasshouse in February 2018, screened against foliar diseases and the survivors planted out into the breeding hop garden at the end of May. It poured with rain two days' previous to planting but who could have forecast that this would be the last rain received for nine weeks? In their first year, hop seedlings have no perennial rootstock and all would certainly have been lost if there was no irrigation. Wye Hops chose China Farm, near Canterbury because it offered irrigation for the newest seedlings. What a wise choice it has proved to be given the record-breaking heatwave of 2018 !

Could I just ask you ...?

Reflecting the huge interest in hops and all things hop-related amongst the brewing community as well as the general public, information from Wye Hops continues to be sought. Since the last newsletter, it has provided over forty different reports, talks, publications, lectures and interviews as well as hosting visitors to the breeding plots. This does not count all the telephone and email responses to technical and scientific queries generated from the BHA website!

PHPS unified and updated

Wye Hops forms an integral part of the Plant Health Propagation Scheme for Hops, known as the "A+ Scheme" and run by the Animal and Plant Health Agency. It is a voluntary scheme with Wye Hops administering the elite nuclear stocks of the cleanest material available held at Stockbridge Technology Centre, Yorks. These stocks are tested for virus and viroid every two years and provide the foundation for the supply of clean, tested propagation materials to the British hop industry. Following the 2017 testing, stocks of First Gold and Pilgrim were renewed at STC in spring 2018 and retested to confirm the absence of infection. Also, Wye Hops helped produce an updated version of the scheme, published on the APHA website in January 2018, bringing it into line with similar schemes for fruit.

Resistance to aphids back on the agenda

With new aphid-resistant selections progressing to farm trials, successful pilot brews of one of these advanced selections, and trade assessments highlighting aphid-resistant selections which do not carry the distinctive aroma character of 'Boadicea', the BHA felt that the direction for crosses made in 2018 should be to build on these advances with renewed attention to the development of varieties with resistance to aphids. Aphid-resistance is unique to the Wye Hops programme which registered 'Boadicea' as the World's first hop variety with resistance to aphids for EU PVR in 2008. Crosses made in 2011 and 2012 aimed to develop new aphid-resistant parents, especially males, and several selections from these families have been used for this year's crossing programme.