



NEWSLETTER 2007-8

From Wye College

Immediately following the announcement by East Malling Research in February 2006 that it was to close the Hop Department at Wye College at the end of March 2007, the NHA started making plans to rescue the main parts of the breeding programme. A suitable wilt-free hop farm with irrigation was identified at Tony Redsell's China Farm, near Canterbury, and the detailed logistical work began of closing down the site at Wye whilst making preparations at China Farm. Tony Redsell secured a grant from the IBD to erect wirework for a new 7-acre breeding garden. The most important germplasm was identified, propagated and cold-stored until the new site was ready for planting in spring 2007. Even as the hops were being moved out of the cold-store at Wye, work began on emptying the buildings, dismantling all the hop gardens, and grubbing out all plants in the ground at Wye.



Pollination sleeves being used at Wye Hops Ltd., for the first time

To Wye Hops Ltd.....

The NHA have set up a subsidiary company, Wye Hops Ltd., to run the new hop breeding programme, under the direction of Peter Darby. During this last year, progress has been better than anyone could have expected: of the 784 different hop varieties comprising the hop germplasm collection and planted at China Farm, only 3 failed to establish! Indeed, establishment was so good that some of the rootstocks planted in spring 2007 were able to be used to make crosses during the summer and seed was obtained to be raised in the glasshouse in spring 2008 – from a bare field to new hop progeny all in a year!

New site, new procedures

Hop breeding consists of co-ordinating many different operations as efficiently as possible. With a new site and new facilities, all these operations have needed to be tried, sometimes modified slightly, and new protocols defined. During the year, procedures for seedling raising at a commercial nursery, transferring seedlings to the field, collecting and preparing pollen, making controlled crosses, and collecting, drying and pressing cone samples for analysis have successfully been determined. Analyses were made in the laboratories of Botanix Ltd. Progress has been made on the methods for maintenance and testing of diseases, as well as the propagation of selections for further trials and the management of nuclear stocks.

Rights transferred

With the agreement of East Malling Research and Defra, the rights to almost all of the hop breeding lines and varieties have been transferred to the NHA so that, in effect, the NHA now own all the resources in its own breeding programme. Only the rights to ornamental hop germplasm were retained by EMR. The transfer of ownership is also being recognised within the EU Plant Variety Rights system.

Funding sources

None of this could have been achieved without funding and support. In addition to the NHA R&D levy, Tony Redsell secured funds to set up the programme from the IBD (Grants Committee), SIBA, BBPA, East Malling Trust, Kent County Agricultural Society and Defra. Several of these grants will continue for three years and the NHA is most grateful to all of these organisations.

The collection at Queen Court



February 2008

Brewers Shepherd-Neame have generously provided land at Queen Court, near Faversham, to allow a reserve hop collection to be established. The collection comprises all the historic named English varieties in the Wye Hops germplasm as well as the



June 2008

most important and recent breeding lines. After careful selection, 180 female and 70 male lines were propagated from the new plantings at China Farm during 2007, and the resulting setts planted on 27 March 2008 when soil conditions were suitable after the winter. Wirework was then erected over the plantings.

No time lost

Despite major disruption to the breeding programme when the Wye site closed, much effort has gone into keeping the programme continuous without any break in the generation of new seedling progenies. The 2004 families were assessed and selected before Wye closed. The 1190 plants of the 2005 progenies were each individually lifted and replanted at China Farm, allowing assessment for analytical traits from the 2007 harvest. The seedlings from the 2006 crosses were raised at New House Nurseries, a few miles from Canterbury, and 1488 selected seedlings planted for assessment starting in 2008.

Next stages at Dormington

Whilst the crossing and seedling selection operations are now underway at China Farm, a site is being developed at Dormington, near Hereford, to allow further assessments of selections. Agronomic, yield and quality attributes will be assessed as well as providing materials for pilot brewing trials. Any varieties selected from these trials will progress to farm trials. During 2007, the first assessments were made of 19 varieties planted in 2006, and a further 17 new selections were planted. Potential candidates were identified for pilot brews from the 2008 crop.

Sovereign and Boadicea in the EU

To retain credibility amongst the customers and competitors for the English hop industry, much effort has gone into maintaining "business as usual" when representing NHA hop research to the wider world. Despite all the changes during the year, Wye Hops Ltd produced 3 publications and 19 separate reports, presentations and lectures including presentations in Germany and the Czech Republic. However, the most tangible evidence of the breeding programme is the registration of new varieties and this has continued without break. 'Boadicea' completed EU variety rights assessment in early 2008 and only the paperwork remains to be finished. In the last weeks at Wye College, 'Sovereign' plants were sent off to be tested for variety rights, and stocks were made available to NHA members for commercial planting.

Contact

If you have any comments or questions about the articles in this newsletter, or for more detailed information, please contact Peter Darby (01227 781056), email: peter.darby@wyehops.co.uk

The Directors of Wye Hops Ltd. are Tony Redsell, John Andrews, Stuart Highwood, Thomas Hawkins and Bobby Neame, and they would also be pleased to give you more information about the project.

Danger abroad!

There is much concern in the hop breeding community about Hop Stunt Viroid. This pathogen, which causes symptoms similar to wilt disease, has become widespread in the USA but, to our knowledge, is not present in England or Europe. Protocols have been established between Wye Hops Ltd. and CSL, York to test by genetic sequencing for the presence of the pathogen in hop material imported into the programme. It is essential to keep this disease out of the UK. If growers know of any imports of hop plants, for example by an enthusiastic home brewer, please put them in contact with Wye Hops Ltd.