



NEWSLETTER 2010-11

Endeavour – a unique English flavour

The provisional designation 'Endeavour' has been given to the selection coded 15/2 in advanced plots. This dwarf selection has shown promise in yield trials, and from pilot brewing trials carried out by members of SIBA from the 2009 and 2010 harvests. The NHA have decided to advance it to farm trials. The trial beers have all been well received and often compared to imported flavour hops. 'Endeavour' has been considered to impart unique flavour notes from an English hop variety, confirming the initial results obtained from the trained sensory panel at BRI-Campden.

During 2010, planting stocks were propagated from the two pot plants maintained in the glasshouses of Wye Hops Ltd., and sufficient was obtained to plant 2000 rootstocks at a single farm trial site in Worcestershire, with a further 4800 planted in 2011.

The stock plants were sent to East Malling Research for meristem culture to eliminate the potentially deleterious PNRS virus so that clean materials can be available for further farm trials for planting from 2012 onwards.

Not forgetting alpha selections ...

Selection 15/3, a wilt-resistant, late-maturing dwarf, was established on three farm sites during 2010 from virus-tested stocks supplied through the PHPS A-plus certified scheme. Dwarf selection 25/4, planted in advanced trials in 2009, was notable as having a good yield, high alpha-acid content (13.5%) and was found to be strongly resistant to wilt.

The National Hop Collection

The Wye Hops Ltd collection of historic varieties and elite breeding lines was awarded the status of the National Hop Collection by Plant Heritage (formerly NCCPG) in September 2010.

Connections

For those who have liked the obscure quiz questions in previous years, here is another – what links a grapevine with the potato weed and a gallant soldier?
Answer overleaf.



IBD help develop Fuggle aroma

'Fuggle' has been the parent for many of the aroma varieties throughout the world including 'Willamette' and 'Cascade'. However, until now, it has not been a part of the UK hop breeding programme which has been based on 'Golding' for aroma. This has been because 'Golding', when complemented by germplasm originating from the USA, has given wilt resistance but 'Fuggle' has not. The IBD have funded a two-year project to develop new breeding stocks combining the aroma associated with 'Fuggle' with desirable traits such as pest and disease resistance, including wilt resistance. This project has now been completed.

From more than 200 female progeny of 'Fuggle', 33 seedlings were selected for harvest and analysis of which the most promising 17 were then assessed by members of the IBD for the aroma of the dried cones. From all the results, seven females which were very similar to 'Fuggle' and four sibling males were selected. These have been added to the germplasm collection and will soon be used as parents with potential to improve some of the traits of 'Fuggle'. Meanwhile, seeds were raised during spring 2011 from a further 13 crosses which used 'Fuggle' itself to combine flavour with wilt resistance and aphid resistance.

What links? (answer to question)

The connection is Hop Stunt Viroid (HSVd). They are the important alternative hosts for the strain of this disease pathogenic to hops. It has been thought that grapes were the other main source for HSVd but work on the molecular biology of HSVd in the Czech Republic has shown that some common weed species found in hop fields are also able to harbour the disease; in particular, *Gallinsoga* species. These are known as the potato weed in much of Europe or as the gallant soldier (or shaggy soldier) in the UK.

This disease causes major yield loss and reduction in brewing value. It is very important to keep it out of UK hops. This is particularly so because it has been shown to be transmissible by pollen which could be of considerable significance in the seeded UK crop. All materials imported by Wye Hops Ltd are tested for the presence of the pathogen by the virology labs of Fera (formerly Central Science Laboratory). During the last year, stocks of Saaz, breeding lines from France and varieties under trial from the USA have been introduced but, so far, HSVd has not been detected. Vigilance must continue!

Raising the profile for UK hop research

Presentations, lectures, publications and reports continue to be an important part of the work of Wye Hops Ltd in raising its profile on an international stage. During the last year, Peter Darby acted as the chairman for the morning session of the meeting of the Scientific Commission of the IHGC held in Lublin, Poland in late June 2011. He also conducted seven separate tours of the breeding garden including three to overseas visitors.

Moving forward

A further 33 female and 25 male selections were added to the germplasm collection as selections from the progenies of the 2006 and 2007 crosses. The 2006 progenies, brought over to Wye Hops Ltd as seed generated in the final season at Wye College, were grubbed to make space available during 2011 for new seedlings. This turnover means that all remaining seedling progenies in the fields at Wye Hops Ltd have been the result of the activities of Wye Hops Ltd and would not have existed if the NHA had not pursued the initiative to maintain a hop breeding programme in England.



The value of the male hop

Assessment of the males identified as potential parents from the final harvest at Wye College in 2006 was delayed during the establishment of rootstocks after the transfer of activities to Wye Hops Ltd. To determine the value of about 20 of these new, untried males, a large part of the crossing programme in 2008 comprised progeny tests – all the males were crossed with 'Challenger' and the resulting progenies assessed. Results from the 2010 harvest identified two of the new males as conferring high alpha-acid content, giving seedlings with >13.5% alpha-acid. Another male gave progeny all of which were resistant to wilt disease in tests carried out in Slovenia using aggressive isolates from the UK. These three new males have already been used again in controlled crosses carried out for the NHA in 2011. Other males conferring good habit, powdery mildew resistance, and dwarfness were also identified for future use.

Contact

If you have any comments or questions on 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 John Andrews, Thomas Hawkins, Stuart Highwood, Bobby Neame, and Tony Redsell and they would also be pleased to give you more information about the project.