

## **GROWING WALNUT FOR FRUIT AND TIMBER IN THE UK: CONFERENCE AT HRI EAST MALLING**

by GABRIEL E. HEMERY\*

The latest research efforts on walnut forestry were discussed at a conference hosted by Horticulture Research International East Malling in October 2000. The event also saw the launch of a new initiative to promote walnut fruit growing in the UK.

The conference arose from an increasing interest and enthusiasm in walnut growing from both the fruit and timber market sectors. The day was split into two discussion sections, covering fruit and nuts and then high-quality timber production, including agroforestry systems. A visit to HRI's walnut collection at nearby Bradbourne was organised for later in the afternoon.

### *Walnut in the UK*

The day was introduced by Alwyn Thompson, deputy chief executive of HRI, who set the scene by stating that a coordinated approach is needed to promote walnut in the UK using well-defined and market-led objectives. HRI has a long history in horticultural research and in the late 1980s started a forestry programme funded by MAFF, mostly working on wild cherry (*Prunus avium*). Walnut research at East Malling began in the 1920s, testing different varieties, breeding resistance to disease and developing propagation technologies.

HRI's tree breeder, Karen Russell, outlined the history of walnut in the UK and the constraints on its cultivation. The common walnut (*Juglans regia*) was introduced to Britain by the Romans, whilst the black walnut (*J. nigra*) is native to North America and was introduced to Britain in the seventeenth century. Both species have edible nuts, although black walnut's are usually too small and hard shelled to be worth harvesting. Despite their reputations, both species can be fast growing, reaching more than 30 m, although black walnut is usually considered to be the more suitable tree for forestry. French researchers have been developing hybrids between walnut species for about 30 years and the resulting trees have proved very vigorous, although the quality and figure of their timber are questioned by some.

Many of the constraints on growing walnut in the UK are common to both fruit and timber production, namely the poor range of material currently available, lack of information and the British climate. Walnut fruit production additionally suffers from the uncertainty of markets, storage difficulties, the expense of the planting material and disease susceptibility.

### *Fruit Production*

The term 'fruit' production is used here precisely because of the wide range of products produced from walnut trees, including fresh or green nuts, the mass-market dried nuts and the British delicacy of pickled walnuts, which include the whole fruit (drupe, shell and nut). Delegates were greeted on their arrival with a long table festooned with more than 30 varieties of fresh nuts for tasting. These included the

\* See footnote on page 31.

well-known French standard Franquette, the Canadian variety Broadview and the British variety Bardwell, as well as many lesser-known varieties sampled from across Europe and North America. Alongside were walnut products, such as Opies pickled walnuts, walnut oil and even a French walnut liqueur.

During the morning session, world-class pomologist Tony Webster presented information on varieties suitable for British growers with the latest information on disease resistance breeding, choice of rootstocks and micropropagation technologies. One such new variety, Liba, a variety of *J. regia*, is produced by micropropagation and is used as a rootstock giving increased vigour in conjunction with resistance to black line disease, drought and high pH. He also outlined the health benefits of walnut products, explaining that the nuts have a high oil content (63-70 per cent) of which 90 per cent is unsaturated, with proven cholesterol-lowering properties.

Local grower, Robin Bircham, outlined his experiences and the particular issues involved in nut growing and selling in southern England. William Opie of Bennet Opie, the largest pickling business in the UK, surprised delegates by revealing that the retail value of pickled walnuts is nearly £2 million per annum, with an international export market. Opies currently pays up to £1.20/kg for UK material but less than one tonne of pickled walnuts are supplied to the business from UK growers. Opies is keen to develop and expand the UK supply.

### *Timber Production*

After a lunch which included stilton and walnut quiche, walnut prune and bacon rolls, lamb with walnut stuffing, walnut bread followed by walnut sponge pudding, butterscotch and walnut gateau, date and walnut slice and walnut ice-cream, the delegates waddled back to their seats to learn more about current and future research on growing walnut for timber production. There was an additional feast, this time for the eyes, supplied by Peter Goodwin of cabinet makers Titchmarsh & Goodwin from Ipswich. A beautiful reproduction Queen Anne chair was on show, worth £3,750, alongside samples of common and black walnut timbers and burr veneer, costing £6/sq ft, from the walnut forests of Kyrgyzstan.

Gabriel Hemery presented information on the current tree breeding strategies underway by the Northmoor Trust in Oxfordshire and through the British and Irish Hardwoods Improvement Programme. Eighteen provenances of common walnut are being tested across three sites in southern England, including material collected from Kyrgyzstan (see *QJF* April 1998, pp 153-7). Survival after one growing season was impressive at 98.9 per cent and all provenances have shown good height increment. This research programme is necessarily a long-term one but it is hoped that trees more suitable for growing in the British climate will be identified, alongside the presence of desirable characters such as good form, high-quality timber and propensity to produce burrs.

In addition to their tree breeding efforts, the Northmoor Trust and the BIHIP have undertaken silvicultural research looking at establishment techniques, the development of new silvicultural systems (see page 31) and, together, are leading the promotion of walnut growing in the UK. Future walnut research activities will expand to include the investigation of black walnut and hybrid material for growing in the UK.

The potential role of walnut in agroforestry was outlined by Steven Newman of Biodiversity International. Agroforestry combines trees and crops (silvo-arable) or

(preferably on a long rotation) is favoured for the Northpark Heronry (at 25 nesting pairs now almost back at its pre-1987 storm population). Half the wood was gale damaged but, unusually, Parham was able to claim under insurance, which included finance for new fencing and ground preparation work.

Two final stops in the morning showed broadleaves in treeshelters; the first (beech P92) having struggled badly and the second (oak P98/99) having fared somewhat better. The Divisional Chairman, David Saunders, concluded the morning with a vote of thanks to Richard Edwards and Parham Park Ltd.

After lunch and the Divisional AGM, members moved in cars into Parham Park and were able to adjourn to the house and gardens immediately or join a short afternoon tour. This commenced at the east end of the park in a small grove of late 1960s Norway maple, devised by the late Mr Tritton, husband of Parham's previous

owner, Mrs Tritton. Both Mr and Mrs Tritton were devoted to Parham's welfare for many years.

The grove was looking somewhat worse for wear after earlier cattle damage, with some heavy-branched and multiple stems. The merits of future actions were discussed. The importance of names for woods was also debated, with Tritton's Copse being suggested for this one.

A final park stop in sight of the house covered present policy on planting and the park's resident herd of 250 black fallow deer, which was originally established in about 1620. Parham Park is also famous for its lichen and Rod Stern explained the significance of old (over 200 years) oak in this connection and how scientific knowledge on this has advanced over the last 20 years. Members then dispersed to visit the house (and gardens), one of the jewels of Sussex, to conclude a marvellous day.

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trees and animals (silvo-pastoral), ideally with a 1:1 land ratio; ie a 100 per cent yield of the overstorey and 100 per cent yield of the understorey in a multi-layered production system. Dr Newman's research has been aimed at characterising the effect of walnut growing on crop and animal systems. He has found excellent solutions to many common problems with these systems.

Peter Goodwin presented a lucid and encouraging talk on the potential for growing walnut for timber in the UK. He made a plea for growers and researchers to work more with black walnut; a species which has shown itself to be highly capable of growing high-quality timber in our climate. He predicted a world shortage of high-quality walnut timber following both the recent French hurricane (1999), which has left many good trees on the ground, and an apparent lack of high-quality standing walnut trees remaining in North America. Mr Goodwin also reminded delegates of the dual usage of walnut trees, given correct management.

Alwyn Thompson concluded the day by stating that there is a clear need to coordinate efforts between researchers, growers, marketers and research funders in the future. The new Walnut Club was formed with Will Sibley as chairman and with committee members chosen from the delegates. The club will focus primarily on fruit production but, through close collaboration with the walnut research group of the BIHIP, it will incorporate timber interests. It is hoped that the two walnut groups can coordinate their efforts in the future, especially where their objectives may overlap, and together continue to promote the resurgence of interest in growing walnut in the UK.