

to lend on plastic structures, as hopefully small borrowing and greater profit margins should lead to quicker repayment.

## CONCLUSIONS

Operating costs for traditional glasshouses and some rigid plastic roof greenhouses are nearly double that of the cheapest modern plastic structure. The plastic greenhouses all provide greater control of temperature, humidity and CO<sub>2</sub> concentration and offer cost savings where these factors are controlled. Light intensities in all plastic structures are believed to be better than in glasshouses and this should contribute to greater yield potential. However, achievement of this potential yield in plastic houses requires management practices which control (or at least recognise the greater requirements for control) temperature, humidity and CO<sub>2</sub> concentration. Differences in management practices between glass and plastic greenhouses are at present poorly understood but the difficulties in this area are not unsurmountable. Developing techniques in energy conservation and in solar heating are more likely to be more easily applied in future to thermally efficient plastic houses than to greenhouses and so I believe that in the long run glass must be displaced by plastics as the principal component of greenhouses.

## PROPAGATING EUCALYPTS BY GRAFTING

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Our aim in grafting eucalypts is to eliminate variability in flower colour and tree type. Grafting will enable us to produce trees true to colour and probably trees in full flower in containers. With *Eucalyptus ficifolia*, for example, we have trees with red, orange, scarlet and pink flowers. Another advantage of grafting is that, because the scions are from mature trees, plants immediately grow into round-headed, multi-branched bushes which are ideal for container sales.

For successful grafting, significant factors seem to be to use fast-growing seedlings for rootstocks and to obtain scions from current season's growth free of diseases and insect injury. Seedlings from October-November (spring) sowing are ready for grafting in late January or early February (late summer). At this time the scionwood is at a suitable stage of growth. Scionwood should be mature with no bud development in the axils of the leaves. Scions with two leaves are best. The leaves are removed

leaving the petioles. It is important to leave the petioles because the scion will shed them at the base and seal itself naturally.

A cleft graft is used. The top of the rootstock is removed leaving two healthy leaves below the graft. Clean smooth cuts are essential. A scalpel is the best implement to use. The graft is tied with clear polythene grafting tape and, under no circumstances, must the top of the rootstock be covered. Petroleum jelly or vaseline is applied to the cut petioles and the wound area. The grafted plants are placed in full sunlight outside and must not be allowed to dry out. If drying out occurs the scion will be shed by the rootstock.

About two weeks after grafting, the leaf petioles commence shedding cleanly at the base and a swelling commences at the same point. At this stage the plant is potted on. Growths that arise from the rootstock should not be touched until the growth of the scion is about three to five cm. long. They are then tipped and finally removed when the scion is established and growing strongly.

So far, our success rate has not been good but I feel that we shall succeed eventually. I feel that success lies, not in technique, but in knowing when all conditions are right at the same time and in learning from our mistakes. I would strongly suggest to anyone attempting grafting eucalypts to sow seeds in lots of 50 at weekly intervals from late September to early November (spring) to give a succession of grafting material.

## **SOME OBSERVATIONS ON THE INFLUENCE OF TEMPERATURE ON WALNUT PROPAGATION**

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For over 25 years I have been struggling with the production of named cultivars of walnuts by budding and grafting. This was taken on more by the way of a challenge than any particular interest in the crop.

Results from patch budding varied dramatically from season to season. All attempts at variation in techniques gave no conclusive answers. For several seasons there would be almost complete failure but the next season the percentage would be high and the resultant growth of the buds was always very satisfying, generally growing an average of 1.5 meters in a single season.

I then realised that temperature subsequent to budding was