

Propagation at Wyevale Container Plants[®]

Paul Green

Crop Development Section, Wyevale Container Plants, Kings Acre, Hereford, HR4 7AY
UK

The author describes some developments in the management of cuttings propagation at Wyevale Container Plants and reviews some recent work to improve the production of *Brunnera macrophylla* ‘Dawson’s White’, *Cornus alba* cultivars, and *Spiraea japonica* ‘Shirobana’

INTRODUCTION

Wyevale Container Plants is part of the Wyevale Nurseries Group. While the nursery produces many of the standard “commodity” plants, it also aims, through new crop development, to offer the buyers something different, interesting, and profitable. It produces about 1 million cuttings per year, in addition to buying in stock for growing on. Although the range has been reduced in terms of numbers of taxa over the past 15 years it has been made more exciting with “new crop development” becoming far more critical. Buyers have become increasingly sophisticated and are continually seeking something new or different so the plant range needs to be refreshed on a regular basis if customers are to be kept interested and margins are to be kept up.

The range currently offered includes *Phormium*, grasses, and *Hostas*, many propagated by division.

PROPAGATION

Softwood Cuttings. Cuttings still represent a large proportion of the nursery’s production. Cutting material is collected by one team of workers but preparing and inserting are not split into separate operations so that the work remains reasonably varied and rewarding—each propagator initials his/her trays on a colour code, making it possible to track their work through rooting, weaning, and up to the potting stage. This also gives the supervisory staff a chance to compare quality and quantity—though any quality issues should be sorted before the tray is completed.

Roller conveyors have been installed to handle empty trays and finished trays of stuck cuttings. Empty trays are run in on one roller and can be removed by the propagators without standing up. When completed they are taken out on the second rollers. This means that just one person (usually the supervisor) needs to be moving around putting extra material on the bench, extra trays on the lower line, removing finished trays from the top line, and checking quality before putting them on the trolley for bedding down.

The trays used for cuttings are always being reviewed. Cell trays have replaced flats. Now the use of Ellepots and Fertil products mean we can selectively wean erratic crops and generally make potting earlier and quicker. The first generation of these products had wraps that didn’t allow good rooting through the sides of the cells (even for more vigorous rooters such as grasses) but the more recently developed thinner wraps have been much better on this nursery.

Stockbeds. Cutting material is collected from liners and finished crops and from external sources as well as from the stockbeds. But while stockbeds represent only one source of material, they are very important. While most stockplants grow adequately on open beds, recent harsh winters and hot summers have meant some crops need more careful treatment. The following are examples of stockplant crops grown in the ground but under polythene tunnels: *Acer negundo* 'Flamingo', *Euonymus fortunei* cultivars, *E. japonicus* cultivars, and *Hebe* species and cultivars. The tunnel is open-sided most of the year allowing good airflow and avoiding excessively soft growth. The improvement in hebe is very noticeable—the foliage remains dry as irrigation is by seep hose. This greatly reduces risk of downy mildew. This tunnel enables us to give these stockplants extra protection without the extra work involved with keeping them in containers.

Some stockplants are also grown in a shade tunnel. These include: *Aucuba japonica* and cultivars, *Buxus sempervirens* and cultivars, *Choisya ternata* 'Lich', Sundance™ Mexican orange, *Lonicera nitida* 'Baggesen's Gold' and 'Lemon Beauty', *Sambucus racemosa* 'Plumosa Aurea', *Spiraea japonica* 'Fire Light', *Viburnum tinus* 'Variegatum', and *Weigela* 'Olympiade', Briant Rubidor™ weigela). The shade remains on all the time. The growth on these crops has improved greatly.

EXPERIENCES IN PROPAGATION OF SOME SPECIALITY CROPS

***Brunnera macrophylla* 'Dawson's White' (syn. 'Variegata')**. This is a very high value crop as are the other variegated foliage cultivars, such as 'Hadspen Cream' and 'Langtrees'. A major reason for this is that division has been the only practical means of propagation. At Wyevale a trial on cuttings propagation was carried out during the first part of 2001:

Dates propagated: Weeks 16 and 18

Time until weaned: 2 to 3 weeks

Type of cuttings: nodal, softwood

Number taken: 1444

Percent rooted and potted: 48

Medium: peat/bark mix, equal volumes

Rooting environment: under raised polythene in glasshouse with shading

Considering the value of the crop, the rooting was promising, but the crop lost its variegation.

[Editors Note: From the audience, Paul Howling, of Howards Nurseries, commented during question time that using heel cuttings, as opposed to nodal softwoods, results in 90% of the crop coming true.]

***Spiraea japonica* 'Shirobana'**. This is grown for the two colours of flower on one plant. The pink flowers grow on the darker red tinted foliage, whereas the white flowers are produced on the pale green foliage. The problem is keeping a good balance of colour in the crop. If dark stems are rooted, the plant retains this form, and the finished plant is all dark. If the paler stems are rooted, they throw dark shoots in time. While it would be possible to double-stick the crop using one pale and one dark stem, other options are also being trialled at Wyevale.

***Cornus alba* Cultivars.** It is possible to root *Cornus alba* cultivars by hardwood cuttings and this has been attempted at Wyevale as a way of spreading the

workload. However, the results proved very variable and these plants are currently produced from softwood cuttings. Rooting percentages and crop quality are good but when production first changed to softwood cuttings for this crop there were occasional failures. For example, the leaves often turned black, even when cuttings were collected when cool, put into the cold store (at 3 to 4°C) quickly, not stored for excessive periods, prepared when cool, misted regularly at the bench, and bedded down promptly.

Three changes radically improved results. Firstly cuttings are collected in trays rather than directly into black bags. The trays are then carefully put into bags. This avoids bruising. Secondly, the cold store is turned off. It appears that sudden change in temperature is one of the main factors in blackening the foliage. Thirdly, the propagators don't hold excessive numbers in their hands; it is amazing how much damage can be done by squeezing cuttings.

These principles also work for *Weigela* and *Buddleja*, both of which exhibit the same symptoms—the link seems to be that none have waxy foliage.

A Review of Developments in *Narcissus* Propagation®

Gordon R. Hanks

Horticulture Research International, Kirton, Boston, Lincolnshire, PE20 1NN UK

INTRODUCTION

Commercial daffodil (*Narcissus*) production currently accounts for some 7500 ha of field-grown crops worldwide, mainly in the UK (4400 ha), the Netherlands (1800 ha) and north-western USA (400 ha) (Hanks, 2002). Typically, growers plant the bulbs at a rate of 15 to 20 tonnes ha⁻¹, there being some 20,000 bulbs per tonne. Well-grown narcissus plants would be expected to double in bulb numbers and weight each year through bulb splitting and offset production.

Compared with sexual plant propagation, this multiplication rate is low, imposing a severe restraint on the introduction of new cultivars or elite stocks, a situation amplified by the long juvenile phase of several years before bulbs are large enough to flower (Rees, 1972). With natural vegetative propagation it takes 16 years to produce 1000 bulbs from one original bulb (Rees, 1969). It can take 20 to 25 years to produce commercial-scale stocks—a few tonnes of bulbs—of a new narcissus. Thus, new commercial cultivars from a breeding programme at Rosewarne Experimental Horticulture Station (EHS), started in 1963, were released starting in 1981 (Pollock, 1985) and only came on-stream in reasonable amounts in the 1990s.

A scheme, begun in the 1970s, to replace existing narcissus stocks with virus-tested (VT) stocks (Brunt, 1985) ran into difficulties largely because of the years of commitment required to bulk stocks. The predominant UK commercial narcissus cultivars, 'Carlton' and 'Golden Harvest', were introduced in the 1920s. Not surprisingly, then, the cultivar choice of UK narcissus growers may seem staid, in marked contrast to the rapid changes in cultivars seen in Dutch lily and tulip growing, where active breeding and propagation programmes have been developed.