Developments in the Supply Chain of Hardy Ornamental Nursery Stock for the Retail Market: A Finished Plant Grower's Perspective©

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INTRODUCTION

Darby Nursery Stock is a large wholesale nursery producing container-grown hardy nursery stock entirely for the retail market. Production started 36 years ago, and the nursery has increased in size as the U.K. garden centre market has expanded. The nursery grows a wide range of plants although specializing in *Lavandula*, container-grown trees, climbers, and soft fruit.

Recent changes in market requirements have led to the introduction of several promotion crops, mainly herbaceous perennials such as *Salvia* ×*sylvestris* 'Rhapsody in Blue', *Sidalcea* 'Little Princess', *Verbascum* 'Pink Kisses', and *Veronica* 'Ulster Blue Dwarf'. The introduction of these promotion crops has in part created a change in the nursery's propagation, production, and plant buying systems.

Until recently the nursery propagated approximately 90% of its own material. The propagation department uses mist to root semi-ripe cuttings, most of which are propagated in 3.5-cm cell trays. This department has rooted more than 4 million cuttings in a single season. Generally the plugs are potted into a liner pot and then grown on for another season before being potted on into the saleable pot size.

The 10% of production that was traditionally out-sourced was purchased for one of two reasons: (1) To make up for any short-falls in our own propagation/production; or (2) To obtain material from other nurseries that specialised in a certain type of production or crop (for example, open-ground bare-root material such as maiden trees or difficult-to-root plants such as hybrid clematis).

CHANGES IN THE SUPPLY OF PLANT MATERIAL

In the last 5 years, the number of nurseries supplying plants to Darby Nursery Stock Ltd. has increased from 8 to 38 while its own propagation has decreased to approximately 70% of all plants sold. There are several reasons for this.

Increased Production of Promotional Crops. The most effective promotions have to be available in reasonable numbers in a short period of time. The nursery is not equipped to rapidly bulk-up such plants. In addition, most of these crops are only available from a limited number of suppliers who also control the propagation rights. Several of these crops are herbaceous, in which the nursery has little propagation experience; therefore, to ensure uniform production, it is better to buy in from another nursery that has an expertise in growing them.

Increased Use of Specialist Plant Propagators. Sometimes these suppliers are growers who concentrate on a limited range of crops. This enables them to improve all aspects of production including manipulation of stock plants to produce high quality uniform cutting material; ensuring that the rooting, weaning, and growing environments are conducive for good growth — and good control of pest and disease

programmes, thus avoiding transferring any problems. Because of this specialisation these propagators can often offer their plants in a range of plug and liner sizes and at different times during the season. This helps with crop scheduling.

The other group of plant propagators used grow a wider range of plants, but because of their size, they can offer material at competitive prices. Their range of customers (supplying nurseries growing for both the landscape and retail sectors) means that they can grow large numbers of popular plants. This reduces their costs and enables them to offer available stock from availability lists. They also offer different plug and liner sizes as well as jumbo multi-stuck plugs.

When growing plants for the large retail groups there is pressure to reduce production costs. By using several plugs, or one large multi-stuck plug, potted straight into the saleable pot, there is a reduction in the input costs as well as reducing the production time. This enables the nursery to be more flexible in an ever-changing market.

FUTURE DEVELOPMENTS

The globalisation of plant production will create more opportunities for plant purchasing. Plant material now comes from several places both in Europe and further afield. Last season Darby Nursery Stock bought plant material from nine different countries, some as far away as Japan and New Zealand. Foreign production enables plants to be propagated in ideal conditions (such as *Lavandula* from Israel) as well as utilising reduced labour costs (such as multi-stuck *Hedera* and *Euonymus* from Poland). Plugs are high-value, low-weight items, and propagation might be carried out even further afield such as in Africa or China in the future.

Specialist propagators who concentrate on a limited range of plants will increase their use of automation. Already robotic transplanters (in pot and bedding production) are being used. Some growers have started to use the plug-to-plug systems that enable small plugs to be automatically transplanted into larger, liner-size plugs. This large plug can then also be automatically transplanted to the final saleable-size pot. This reduces the labour costs throughout the production cycle as well as helping to improve uniformity of production.

Recent poor trading within the general retail market in the U.K. has caused a downturn in the demand for garden plants, thus leading to a certain amount of over-production. This, together with changes in the demand for certain shrubby species, has meant that liner growers are reducing the amount of material propagated and offered on availability lists: more crops are now being grown on a contract basis.

The Future for Propagation at Darby Nursery Stock. In the future, Darby Nursery Stock will have to make the decision whether to carry on with its own in-house propagation. Department overheads will need to be reduced if the nursery continues with its own propagation. This can be done by only rooting subjects that have a high percentage take. In addition, propagation and liner departments could be merged and run as one. A liner department might be needed, even if all plants are out-sourced, because this enables a greater control of the supply chain. Having a pool of labour within a propagation-liner department might also indirectly help with peaks in despatch, because this labour can be used without creating too many problems to general production. While this is not a sound reason in isolation for retaining a propagation facility, it must not be totally forgotten as a factor. The ability to

maximise sales in times when demand is strongest will become even more crucial—and there are few alternative sources of competent people with sufficient prior knowledge to be of value to uplift despatch volume in peak weeks.

MANAGEMENT OF PLANT PURCHASES

Good communication is the key. Before we start placing orders, the pervious season's plant purchases are reviewed. Information on quality, timing, and price of the input material is gathered together. Then plant wastage and total sales are considered. This information gives us the ability to talk to our suppliers to improve supply if needed. An assessment on total requirements is made, and then the order can be placed.

Specifying certain attributes of the crop is becoming increasingly important because multiple retailers now work to a set specification for their finished plants. Height and number of breaks can be noted at the ordering stage — with multi-stuck plugs the number of cuttings per plug and plug size has to be noted.

Feedback from the supplier is important at all stages of production. Can they achieve the requested specification? What implications does the specification have on price and delivery time? If the plants are failing to reach the specification, we need to know as early as possible. We might then decide to either replace the material from another supplier or accept the lower specification plants. Today this has become easier with the use of digital photography and e-mail.

With tight delivery windows for finished plants, the timing of delivery is also important. We work through each order to achieve our time schedule and make-up sensible delivery quantities for the supplier. Once again it is important to know about any delays that might occur during production. Unfortunately late deliveries might cause a reduction in the numbers of plants needed or even a cancellation of the order.

The plant types, numbers on each delivery, and their source are communicated on a weekly basis to the relevant members of staff. The nursery only accepts deliveries Monday to Wednesday to avoid any problems with plants turning up on Friday afternoon and then having to be held on trolleys over the weekend. The numbers are counted and cross-checked with the delivery note as well as a health check being carried out before the plants can be potted on. We try to communicate any problems with quality, numbers, or pests and diseases with the supplier within 24 h of delivery.