

HEATHER PROPAGATION

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Successful heather production begins with the stock plants. The younger, cleaner, and more vigorous they are, the better the crop of cuttings will prove to be. Highland Heathers maintains approximately 80 stock plants of each cultivar it sells.

Each year 20 plants of each cultivar are taken out of the saleable stock and potted up into 2 litre pots. The other stock plants are then potted up a size, that is, 2 litre into 4 litre; 4 litre into 6 litre; 6 litre into 7.5 litre; 7.5 litre into 10 litre. This ensures a steady turnover of stockplants and generates good, young vigorous cuttings. These stockplants are housed in a ventilated polytunnel on a capillary bed. This keeps the foliage dry which prevents *Botrytis* infection and prevents watersplash and the transfer of *Rhizoctonia*.

The plants are sprayed fortnightly with fungicide; alternately with Rovral and Elvaron. Stockplants are regularly trimmed to prevent their producing too many flowers. Too much flowering tends to mean harder wood and flowers are often a source of fungi. With the stockplants being under cover, it is easy to force an early crop of cuttings.

Propagation is done between May and February but with the cuttings also being taken in July and August when school holidays allow a good supply of labor.

Nodal cuttings of the current season's growth are used. Cuttings are 2 in. long with the bottom ½ in. stripped, and the very soft tip pinched out. Cuttings taken early in the season should be rooted in 2½ weeks to one month, depending on the cultivar, or 10 to 12 weeks in the winter. The cuttings do not receive any hormonal treatment and are inserted into 75% peat/25% perlite rooting compost.

We use two sizes of plug trays—the "273" tray which has 273 cells of 12 cu.cm. capacity and the "150" tray which has 150 cells of 25 cu cm capacity. Generally, cuttings which are to be held for a longer period before potting are inserted into the larger size tray. This allows a greater root run and more space for the cutting to develop. The cuttings are then watered in.

The cell trays are then placed on sand in the propagation case. These cases are basically a "Dutch-Light" propagation case within a polytunnel and the case itself is covered with polythene. In the summer the polytunnel is generally shaded. The advantage to us of having the polythene clear of the cuttings, as opposed to resting

on top of them, is that the cuttings are less prone to scorch and *Botrytis*. From mid-September on, soil warming cables maintain a heat of 15° C beneath the trays. When the plants are rooted, the polythene is removed and ‘Agrofleece’ is layed over them for a week. After this, the cuttings can receive liquid feed and a Rovral drench—this is the first fungicidal treatment for the cuttings since being removed from the stockplants.

One new treatment for the newly rooted cuttings that we have just developed is to hang high pressure sodium lights over the cuttings.

We try to maintain a light level of 5,000 lumens per sq. ft. for 16 hrs. a day. On the ‘White Meter’ electricity tariff, this costs just 0.2p per plant for 8 weeks. We use this in the winter months when the natural light levels are very low and it makes cuttings break into shoots as well as producing roots. This was tried on unrooted cuttings to speed them up in the winter, but so far without much success.

The next stage in the process depends on whether the plants are for sale as 8cm or 1 litre plants. For 8cm production, we aim to have plants available all year round, so we pot all year round. *Erica carnea*, *E. mediterranea* [syn *E. erigenas*], and *E. × darleyensis* are potted around Easter into straight peat, with 2.5 kg Osmocote 12-14 plus, a kg dolomitic limestone and 200 gms Fongarid per cubic metre. No bark or sand is added. Everything else is potted with peat plus 2 kg Osmocote 8-9, plus 1 kg dolomitic lime and 200 gms Fongarid per cubic metre. With *Calluna vulgaris*, *Erica cinerea*, and *Daboecia cantabrica* we work back from when we want to sell them. For example, *Calluna vulgaris* ‘Anne Marie’ required for sale in September is potted in May. With the foliage cultivars of *Calluna vulgaris*, we can have a saleable plant in as little as 12 weeks.

All these plants are potted on a Javo potting machine; three people can pot over 12,000 plants per day in an 8 hr day. For the production of 1 litre heathers, we do not pot-on an 8cm plant—it is inefficient and too expensive. Instead, we insert a cutting from a ‘273’ tray into a ‘54’ tray which has 54 cells of 80 cu. cm. The ‘54’ tray is filled with 75% peat/25% perlite, 2kg Osmocote mini-granules, 1kg dolomitic limestone, and 350 gms of frit per cubic metre. These are then grown on for 4 to 5 months before being potted on into their final pot. These are again machine potted and 5 people can pot 1200 per hr. The same compost mixes as before apply.

All the plants for growing-on are put down on sand in polytunnels with net sides. The main reason for this is that with over 2000 mm of rain per year, we need to keep plants dry—yet the net sides ensure good air movement. The plants are regularly sprayed with

Elvaron or Rovral as *Botrytis* could become a problem under polythene. Apart from that, we do not have a regular fungicide programme.

It is our belief, and this has been proven conclusively by the West of Scotland Agricultural College, that fungicides applied on a regular basis to healthy plants have a detrimental effect. We do not use broad spectrum fungicides, we use specific chemicals to control specific problems. The best method of avoiding disease is to prevent the plant from being put under stress.

Developments we can expect to see in the future include:

1) Putting sodium lights over "54" trays to encourage the plants to break dormancy earlier. This will enable us to "time" crops much better, resulting in shorter growing times which should lead to a similar system to the pot plant or bedding plant market where crops are timed to a week number.

2) The incorporation of Osmocote mini-granules into the rooting medium to encourage better growth. The problem here is having a rate high enough to ensure even distribution but low enough not to damage the emerging roots. It may be necessary to add bark or granulated clay to act as a buffer to the Osmocote.

Finally, a lot of *Calluna vulgaris* cultivars, including 'Tib', 'Kinlochruel', and 'County Wicklow' do not produce many cuttings. One way to overcome this is to shorten the daylength of the plants. This encourages vegetative growth but without flower buds.

It is our belief that by starting with clean, vigorous cutting material and following through with good husbandry and management, a large arsenal of fungicides is unnecessary. This is a saving in time, money, and wastage for the grower.