Preparation and Maintenance of Stock Beds

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INTRODUCTION

The important factors for successful propagation are:

- Vigorous material that is of suitable ripeness.
- Clean and quick handling of the material keeping it moist and cool at all times.
- Correct rooting hormones and the application of fungal treatments upon setting
- A suitable enclosed environment including warmth and moisture. An appropriate rooting media.
- A weaning system that is done in a fashion suited to the crop.

As we know these practices are essential for good results but we must always start with appropriate material.

GROWING AND MAINTAINING STOCK PLANTS

By growing and maintaining our own stock we have greater control over our propagation material which needs to be vigorous, of true form, colour and name, available in required numbers and during the season as we require (often more than once a year). Our aim is to keep our stock in a strong vegetative condition.

There are three main methods of producing propagation material in the nursery.

1) Nursery rows in the open ground.
2) Containerised stock plants
3) Clippings from saleable stock.

Open Ground Beds. Certain factors must be considered for site preparation and planting. These should include drainage, irrigation, frost control, shelter, soil pH,and fertilisation.

The soil type will have a major influence on some of these factors For example a heavy clay soil may only need irrigating in the middle of summer and will most likely need some kind of drainage system.

When planting, spacing between the rows and plants depends on how long you intend to keep them in production and also the ultimate size of the plant. (e.g. a fair spacing for photinias would be 1 1/2 m × 3 m).

Containers. With containerised stock plants a more controlled environment can be achieved. For example, moving lavender to a warmer drier environment such as a crop cover over winter, will encourage propagation material growth for an extended season.

Site preparation is obviously more simplified as they will usually fit in with the nursery stock. This encourages ideal growth by providing a level site, a free draining surface, a source of irrigation and general growth requirements.

The negative factors are that should the chosen environment promote a pest or disease this can affect both saleable stock and mother plants. Also valuable sales

stock space is used and a vigorous repotting and feeding regime needs to be maintained.

Saleable Stock. With this system the advantages are that it is more convenient than maintaining large stock plants and growth produced from the younger plants is more vigorous.

A downfall to this method is that there is often a compromise as to when the material should be taken and when the plants should be sold. Also this does not suit all plant types, like cassias which are usually grown from hardwood cuttings

For all of these methods the following factors are important:

Water. Soil type influences water retention, and a good knowledge of our soil type helps us decide when and how to keep a satisfactory balance of moisture to achieve maximum growth.

Light. You must consider individual plant cultivar requirements, as shading may be needed or full exposure to sunshine. For example, most of our camellia cultivars are grown in full sun, however, *Camellia* 'Baby Bear' seems to grow better in partial shade.

Weed Control. This is necessary to minimise competition for nutrients, water, and even light. Weeds also have a nasty habit of hosting pests and diseases. For example, Puha (*Sonchus* spp.) can host whitefly, mealybug, and aphids to name a few Mulching can inhibit weed growth and also promote microbiotic activity in the soil. We have used wood chips and sawdust spread thickly around the stock plants. This has lasted 2 years and reduced the need for weed spraying as well as the need for irrigating. This is not only a good cultural practice but also a great labour-saving technique.

Nutrition. At least twice a year a side dressing of fertiliser should be applied to top up plant nutrient levels. If using containerised stock, repotting will need to be done regularly, usually when the plants have outgrown their bags or pots, often referred to as being root-bound. In the nursery row, soils require a sidedressing of a general N-P-K fertiliser. Specific crops, such as proteas, may need a more calculated feeding regime. They require less phosphorus than most plant groups.

Pest and Diseases. Experience will tell you the most crucial times of the year to control pests and diseases, but it pays to be observant, especially during conditions favourable to the pathogens growth. Mites enjoy hot, dry conditions in sheltered areas, like the middle of a crop covered batch of *Rosa* 'The Fairy', during the hot summer months. *Botrytis cinerea* seems to thrive in moist, humid, overcast weather on decaying material, especially on *Camellia* flowers in spring.

A good clean-up spray at the onset of winter, which is a dormant period for most pathogens, can easily control populations of scale, mealybug, thrips, and mites. As the weather becomes more favourable for growth there will be a need for more regular spraying. However, the knowledge of a pathogen's growth habits and keen observation will minimise the need for spraying.

Shelter. Many plants will respond favourably if sheltered, especially when young. Generally speaking, wind will inhibit growth by drying the atmosphere and sometimes when severe, causing physical damage. Camellias prefer a sheltered position whereas *Olearia* cultivars prefer a harsher environment.

Pruning. This is an extremely important factor. Plants should be "farmed" in such a way that they will produce material during the desired season, that will suit the plants growth habits and the nursery production system. Pruning serves two purposes, to produce a consistent grade of strong vigorous plant material and remove undesirables such as flowers and weak or dead growth.

When we prune the stock plants at Lyndale Nursery we do so in two steps. Stage one takes place when we take the cutting material for production use. Suitable material is selected and removed with a slanted cut always just above a node with the cut angling away from the bud. In this way we are sure the stock plant will grow away easily without having to recover from die-back caused by poor pruning practices. Sometimes this is the only trimming a plant may get. A good example of this would be our use of *Hebe* stock plants. During the season we may remove four or five batches of growth. Any subsequent growth not required for cuttings will be pruned to inhibit flowering. Plants are cut back to a level they will shoot from readily and evenly. This level pruning on the top and sides but with no rounded corners will expose the greatest surface to the full light and weather. This simple method reduces apical dominance and produces a greater number of evenly grown, strong cuttings.

Age. This is a factor that needs to be addressed. When a plant is not producing vigorous propagation material it should be replaced. This may be noted by recognising poor growth or recording a drop in percentages in production results. Some plants need to be replaced regularly due to their short-lived nature. Examples of these would be *Boronia*, some *Grevillea* taxa and *Cistus*.

These factors will directly influence the success or failure with any given crop. A well-grown batch of stock plants reduces the need for sifting through unwanted wood so collecting is therefore efficient.

Customers of liner growers demand even grading and we only have one growing season to achieve this, so it is imperative that the material is graded from the first cut. When dealing with thousands of cuttings of one plant type this becomes more difficult to achieve.

As a propagator I feel the preparation and maintenance of an established stock bed is essential to producing ideal propagation material. As propagation is the most risky part of plant production we should spend time on the first major step of the operation. Maintaining stock should be taken seriously as the quality you begin with directly affects the quality you end up with.