

stantiated, is such a practice cultural control or biological control? Such questions become rather meaningless but do perhaps remind us that a virtual revolution in the discipline of plant protection is a distinct possibility in the near future and that we are probably just starting to see the beginning of this.

LITERATURE CITED

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THE MAINTENANCE OF STOCK PLANTS

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At Lyndale Nurseries we are of the opinion that the production of good plants from cuttings begins with the maintenance of stock plants that will produce the cutting material.

By growing the majority of our stock plants on the nursery property we can be sure that:

1. The history and identity of each stock plant is known.
2. Material produced by the stock plants is free of pests and diseases.
3. Cutting material can be collected with ease at the optimum time to ensure best possible results.

As well as our regular stock beds we have employed the available space between areas on banks, etc. to grow plants suited to particular conditions. For example, on a sunny north-facing bank grevilleas thrive in very sandy soil built up from used propagating mix. Banks are also filled with leptospermums and smaller growing conifer cultivars.

In the laying out of stock beds thought should be given to accessibility when collecting cuttings. Plants need a certain amount of room to grow and we need room to be able to remove the maximum amount of cuttings from each plant. Obviously a happy medium must be struck so as not to waste valuable nursery land.

Eventual size of plants should also be considered to ensure that rows will not shade each other on any side. New plants should be kept growing as much as possible to achieve vigour for cutting later. This could involve watering during summer months in dryer areas. We have a trickle irrigation system on our newer stock bed and employ soak hoses for occasional spot watering. Mulching the beds is a useful way of retaining water, reducing weed growth, and helping in the improvement of poorer soils. The use of sawdust for this purpose has meant the older stock plants do not require any additional water in summer.

Weed control is important in any nursery environment, especially stock beds. Spraying is the least labour intensive method for us and the use of a desiccant plus pre-emergence herbicides three times a year gives satisfactory control. Paying special attention to an early spring spraying is a good idea as growth is so rampant at this time.

Stock plants must be kept free of pests and diseases to ensure that nothing undesirable is carried into the propagation area at cutting time. General spraying with a combination of sprays makes this job easier and quicker. Specific spraying can then be carried out on species with seasonal or single problems, i.e. powdery mildew on *Lagerstroemia* cultivars, mites on conifers, etc.

Feeding the stock beds is carried out twice yearly in autumn and spring by spreading 5-5-5 fertilizer around each individual plant. Although time consuming this method seems to provide good results with minimum waste.

When pruning stock plants we try to maintain as many cultivars as possible by "hedging". This method has many advantages.

1. Rows are easily kept to a manageable height for collection of cuttings.
2. By square cutting the top of the "hedge" uniform regrowth can be achieved.
3. Each plant will produce many more cuttings by being pruned.
4. Most importantly "hedging" will produce more "juvenile" regrowth and, in many species, this younger growth is what we require for successful cutting material.

This method has proved useful with *Pittosporum*, *Callistemon*, *Lophomyrtus*, *Metrosideros* cultivars, and others. Hedging is best carried out in winter, making sure that all necessary wood for cuttings has either been removed or is saved during pruning for use after. Species which are not hedged are generally dealt with at the time of taking cuttings. Camellias, for example, can easily be cut back in this way ensuring regrowth will occur without further pruning.

When taking cuttings off stock plants it is important to bear in mind that more wood is needed next season or sooner. Plants that are slow growing or very woody, i.e. conifers, can easily be ruined by indiscriminate pruning.

No matter how much attention we give our plants, continual removal of new growth will doubtless lead to deterioration. The life expectancy of stock plants will vary greatly among species with some "running out," possibly after four or five years of use, particularly hedged cultivars, while others may serve up batches of cuttings for many years. With this in mind a renewal programme for the stock plants should be considered.

FACTORS AFFECTING ROOT FORMATION ON PHOTINIA 'RED ROBIN' CUTTINGS

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Abstract: A discussion group met to consider why *Photinia* × *fraseri* 'Red Robin' was a difficult subject to manage in the propagation and growing-on departments of many nurseries. The stock plant management and history prior to taking cuttings was probably more important than the propagation environment in producing a well-rooted, but not heavily callused plant, provided normal requirements for light, temperature, and water are satisfied.

INTRODUCTION

It has been estimated that each year in New Zealand approximately 80 to 100,000 *Photinia* plants are used by the ornamental plant market and, in addition, further quantities are produced for export. For many years this plant has given inconsistent rooting and has been a difficult plant to train into a suitably branched specimen.

In an effort to "lessen the professional loneliness" (referred to by Dr. Phil Parvin, 1986 International President of I.P.P.S.) that may exist among individuals in the industry and within the International Plant Propagators' Society members, a forum of nursery persons with an interest in this problem was assembled to share their collective experience and see if they could put roots on this new "Aaron's Rod."