

The Conventional Tube

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INTRODUCTION

This paper was initiated by the question: "Why does Lyndale Nurseries Auckland Limited use the tubes we do" ?

- 1) My first reaction to this question was—my very experienced partner Noelyn said to use them!
- 2) My second thought was, it is the industry norm!

The rest of the exercise has been quite enlightening as I have worked my way through the question—but why and what is a liner nursery such as Lyndale trying to achieve? As a liner grower we are aiming to produce a quality-graded, individual, small plant that is healthy, well rooted, well shaped, and gives the greatest possible potential for quality growth to the customer when growing on this plant.

Obviously there are influences on this exercise.

EXTERNAL INFLUENCES

- Timing of cutting material and seed availability.
- The marketing time frame—when does the customer require this unit?
- The growing environment.
- Trucking costs and space.
- Quality and grading—our customers do not just require one but up to 5000 plants which all look and behave the same.

INTERNAL INFLUENCES IN THE NURSERY

- Production efficiency.
- Production costs.
- Growing conditions required, what can we provide.
- Ease of handling our product by individuals. Or, to borrow a more eloquent quote on growing in containers:

"The cuttings or seeds should be planted in a marketable container, grown in this marketable container to a marketable size in the required time frame under conditions that are suitable for the plant"and I have to add—or at a price that our customers are prepared to pay.

So what is involved?

- 1) Root the cutting.
- 2) Pot the cutting.
- 3) Sell the cutting.

Simple isn't it? We believe that in using the tubes shown we have found the most suitable and cost-effective marketable unit for our present production system.

OPERATION

Let's look at the operation of our liner nursery. Lyndale Nurseries Auckland Limited is a specialist propagation unit which produces over 2 million units per year. This

production encompasses approximately 1000 taxa, mainly of trees and shrubs.

Obviously for a nursery such as this to remain economic, uniformity in production methods throughout the range of plants grown, even to the point of compromise where possible, is essential. At Lyndale our seeds, cuttings, and micro-propagated units are all initially set in hygiene trays, misted or fogged, then weaned. All units are strictly graded during making and setting. When the cuttings are well rooted the trays are then taken to the potting shed and potted into individual tubes (Fig. 1)

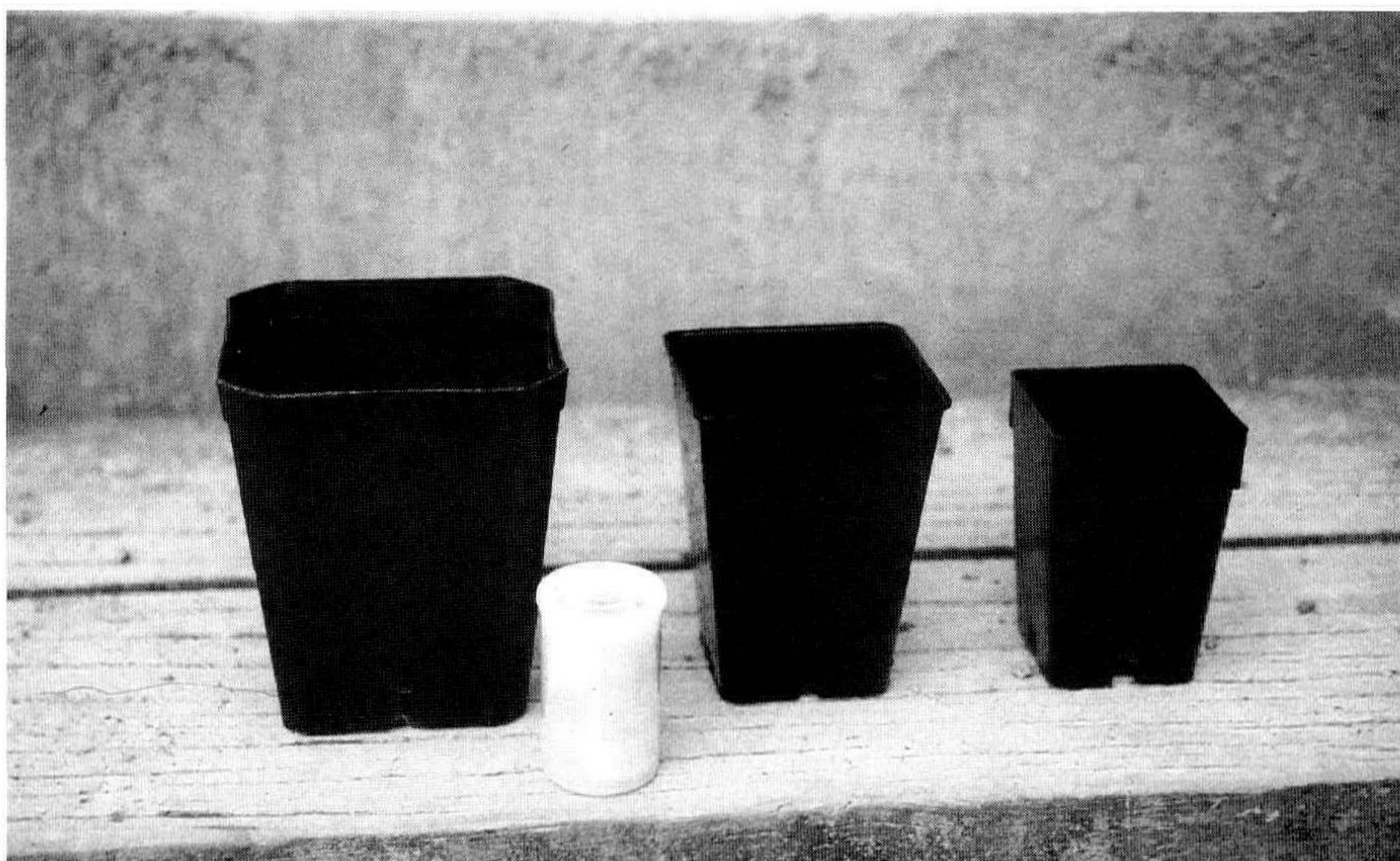


Figure 1. Range of tubes used at Lyndale.

The two questions still remain: 1) Why a plastic tube? 2) Why an individual unit? Let's consider the choice of the tube.

- It is reusable.
- Resists deterioration and decay.
- It is easily cleaned.
- It does not inhibit plant growth; adversely affect temperature, or promote disease.
- It has excellent drainage capabilities.
- It is a size and shape that can be handled easily and efficiently by an individual in commercial numbers, i.e., trays of 54, 35, or 20.
- It can be freighted economically but is strong enough to retain its shape while freighting.
- The plant is easily removed for potting.
- The sizes used can be potted directly into the pot sizes which are the nursery norm. No further growing-on is required.
- Cost is able to be accommodated into the final price of the unit.
- Supply is excellent.

- The size and shape will comfortably accommodate the 4 to 12 months root growth we require without disfiguration or repotting the plant.

Why the individual unit? One very good reason—quality and uniformity is the number one requirement from our customers! Grading, therefore, is the most essential part of our operation from collecting cutting material to dispatch. Our customers expect plants within the batch received to be consistently the same and do not want to pay freight on empty units or receive uneven batches of plants. This is what Lyndale Nurseries is endeavoring to achieve.

Roottrainers: A Nurseryman's Perspective

Lee Gilbert

Morgans Road Nursery, Blenheim

INTRODUCTION

Morgans Road Nursery in Blenheim, specializes very much in Roottrainers for almost all of its approximately 300,000 annual stem production. The product range is quite diverse with *Eucalyptus*, *Cupressus*, *Acacia*, and other commercial type species grown in a small (Hilson) Roottrainer. An increasing range of New Zealand natives, a smaller range of exotic amenity species, and a selection of perennials and garden plants are grown in a large (Tinus) Roottrainer. The Roottrainer system has been around for a considerable time, being first patented in New Zealand some 18 years ago. The patent has since expired opening up production to a larger number of manufacturers.

Whilst the system carries the label of Roottrainer, the root-training principle is certainly not limited to this system. The principle is incorporated in many container types now in use, though some manufacturers do not have a good understanding of the principles involved. The use of this root-training principle, I believe, is most important and will see the phasing out of some container types. There are a number of different methods to attain root training. These include, as in Roottrainers, the use of sharp ridges (sharpness being the critical element) over which the soft emerging tips of the roots will not cross. Others are the use of gaps in the growing container (as in sideslit trays) and the use of root-permeable material (as in paper pots). A common feature of these systems is the use of air pruning to limit root length and promote additional root formation. In Roottrainers this is facilitated by packing them in wire frames which hold them off the ground to allow a space of dry air underneath. Most of my plants are grown on concrete pads which aid this process.

I chose Roottrainers because at the time I perceived them to be ahead of other systems available. Whilst there is more choice now they are still a strong competitor in the market place.

THE STRENGTHS AND WEAKNESSES OF ROOTTRAINERS

The root-training principle has wide and strengthening recognition. The emphasis on root development is a strength not fully appreciated by the public.