DIRECT STICKING EVERGREEN AZALEA CUTTINGS

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A prime objective in plant production must be to minimize growth checks. Conventional tray propagation and subsequent root disturbance before potting involves a major check to growth. Direct sticking of cuttings into a pot containing fertilized compost ensures that as the cutting produces roots it grows away without disturbance. It is commonly argued that fertilized compost retards rooting. Our experience has shown that rooting evergreen azaleas in pots of fertilized compost is feasible. Subsequent growth is superior to that obtained by using more conventional systems.

In 1982 and 1983, we incorporated nutrients in our rooting composts on a trial basis. We had very poor results. At the I.P.P.S. conference in 1983, Tacchi (3) and Down (2) gave papers which indicated that nutrient incorporation in propagation composts was successful for easily produced hardy nursery stock. A picture of *Rhododendron* 'Fashion' in a paper by Carney and Whitcomb (1) convinced us that we should try again.

We conducted two trials, one in a glasshouse, the other in a walk-in 14 ft poly tunnel. Cuttings were inserted in 7cm pots in a series of six composts. In one trial, the pots were covered with 80g polythene draped over hoops in a heated glasshouse propagation bench. In the second trial pots were covered with 80g polythene draped over hoops in a poly tunnel covered with 600g "milky" polythene. Four rates of slow-release nutrients were tried. Carney and Whitcomb mentioned very high rates of nutrients. This influenced our choice of rates (see Table 1).

Table 1. Rates of fertilizer used in the rooting medium

	Kg per cubic metre		
Compost	Osmocote 18:11:10	Magnesium limestone	Micromax (micronutrients)
1	0	2.5	0.47
2	1.5	2.5	0.47
3	3.0	2.5	0.47
4	4.5	2.5	0.47
5	6.0	2.5	0.47
6	0	0	0

The cuttings were inserted on May 25th, 1984. The bulk constituents of the compost were two parts medium grade moss peat and one part granitic sand. All cuttings were treated with Seradix 3 rooting hormone.

The following observations were made:

1. Increasing fertilizer levels led to a reduction in survival.
2. Incorporation of trace elements and lime alone did not reduce rooting.
3. Rooting became more erratic as fertilizer level increased.
4. The more controlled atmosphere of the glasshouse gave more even results and higher percentage survival.
5. Although plants may have rooted in composts containing high nutrients, we did not record them as survivors unless they were fit for potting on.

Table 2. Percentage survival of three evergreen azaleas cultivars to potting on, using various composts.

	'Florida'		'Addy Wery'		'Vuyk's Rosy Red'		Average
Compost	(a)	(b)	(a)	(b)	(a)	(b)	
1	95%	100%	95%	80%	81%	100%	92%
2	96	6	96	96	90	0	64
3	96	45	78	0	71	38	55
4	83	38	11	75	30	81	53
5	20	0	0	0	0	0	3
6	100	100	100	93	100	73	94
Average	81	48	63	57	62	49	60

a= glasshouse b= polytunnel

The rooted cuttings were subsequently potted on into two litre pots. In 1985, the plants which had been rooted with slow-release fertilizer grew away faster than those without fertilizer. The increase in growth did not vary significantly where increased rates of slow-release fertilizer had been used during propagation.

Our experience to date suggests that maximum benefit is derived from this method if the cuttings root quickly. Conventional propagation will accommodate some deviation from good procedure, but direct sticking demands strict adherance to good propagation procedure.

The benefit from direct sticking and the use of fertilizer was evident in subsequent plant development. A reduction of up to one year in the production cycle was achieved when compared with tray propagation without fertilizers.

In 1985, 10,000 cuttings were inserted using Mix 2 above (see Table 1). Eighty percent of these cuttings survived to potting on.

LITERATURE CITED

1. Carney, M. and C. E. Whitcomb, 1983. Effects of slow-release fertilizers on the propagation and subsequent growth of three woody plants. *Jour. Environ. Hort.* 3:55–58.

2. Down, A. E. 1983. Simple but effective propagation in North American nurseries. *Proc. Inter. Plant. Prop. Soc.* 32:171–174.

3. Tacchi, R. B. 1983. Cost effective propagation using polythene structures. *Proc. Inter. Plant Prop. Soc.* 32:167–171. .

CAMELLIA PROPAGATION

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INTRODUCTION

The demand for camellias has increased over recent years as its potential as a garden/patio/conservatory plant has been recognised by a wider sector of the public. At the same time the traditional sale by length of often single stemmed plants has been replaced by a demand for younger well branched/budded material. Production of this type of plant has required close attention to detail at all stages of growth and a recognition that quality and type of cutting, together with their treatment both during and after propagation, has a major influence on establishment and subsequent growth. This paper reviews the various factors influencing the successful propagation of quality camellias which have been identified during our extensive experimental programme on camellia production at Efford EHS, which culminated in recommendations for an accelerated production schedule (1).

SOURCE OF CUTTING MATERIAL

A source of quality, well-graded cutting material provides the key to a successful propagation programme.

Growing plants: A major source of propagation material has traditionally been from the growing crop when stopped back in the autumn. However, material from this source is often variable and limits the scope for stopping during the season to improve branching.

Stock plants: Ideally cuttings should be obtained from stock plants either container-grown specifically for this purpose or from a stockbed area. This provides the opportunity for manipulation of growth to produce flushes of quality material and selection of graded cuttings. At Efford an area of stock camellias has been planted and has provided information on plant management to achieve this objective.

In the south of England stock plants can be grown outdoors but