

IDENTIFYING TIMES OF HIGH POTENTIAL ROOTING FOR CUTTINGS OF FOUR COMMON NEW ZEALAND NATIVE ORNAMENTALS

CLINTON J. SMYTHE
and
KRISTA D. SMYTHE

(formerly) *Department of Horticultural Science*
Massey University, Palmerston North

INTRODUCTION

There has been little work done on the influence of the time of year cuttings are taken on the rooting of cuttings of New Zealand native plants. Work of Butcher and Wood (1) on the rooting of cuttings of *Sophora microphylla* 'Earlygold', 'Goldie's Mantle', and 'Goldilocks' showed that certain times of the year were better for propagation purposes than others. After taking cuttings at three to four week intervals for a complete year they showed that approximately 100% rooting could be achieved with these three cultivars by taking semi-hardwood cuttings in June, July, or August (winter). This paper reports our studies on the effect of the time of year on the rooting of cuttings of four other common New Zealand native ornamental plants.

MATERIALS AND METHODS

Four species of native ornamental plants commonly grown in New Zealand were selected: *Cassinia albida*, *Corokia cotoneaster* 'Red Wonder', *Pittosporum tenuifolium* 'Sunburst', and *Pseudopanax lessonii* 'Goldsplash'.

Thirty tip cuttings of each of the four subjects were taken from plants growing in the Massey University grounds on March 21, 1989, and at two week intervals thereafter. Two separate stock plant areas were used alternately (except in the case of the *Corokia*) to ensure that a regular supply of cuttings was maintained. Cuttings were approximately 10cm (*Corokia* and *Pseudopanax*), 8cm (*Cassinia*), or 5cm (*Pittosporum*) in length and a basal cut was made just below a node.

Leaf area of the *Pseudopanax* cuttings was reduced to three leaves; the other three species had the lower third of their leaves removed. The purpose of this was to reduce water loss from the cuttings and to allow closer spacing in the propagation trays. The cuttings were then given a single basal wound, dipped in 0.8% IBA talc and direct stuck into a peat:pumice (1:1 v/v) medium in trays. The trays were placed under an enclosed mist tent with intermittent mist at five sec. every ten min. and 21 °C bottom heat

at the cutting base. The greenhouse temperature was maintained at a minimum of 22° C day and 15° C night.

Assessments were made when the majority of the cuttings were sufficiently rooted to be tubed up, as would occur under standard nursery practice. This was at six weeks from the time when the cuttings were taken for *Corokia* and 16 weeks for the other plants under study. The numbers of rooted cuttings were counted. The rooted cuttings were then graded by root ball size, this being determined by the distance between the tips of the longest roots.

RESULTS AND DISCUSSION

There is a period starting in October to November (depending on species) when rooting percentage drops to an unacceptably low level, this being maintained until the end of summer. Apart from *Corokia*, which showed very high rooting percentage throughout the March to September period, the species rooted best either in autumn (approximately April) or in winter (approximately July-August) with a depression in rooting in the May to June period (Table 1). The variation would have been due to complex interactions of seasonal growth and environmental factors.

The period of greatest root development coincided with that for best rooting percentage for *Pittosporum* and *Pseudopanax*. However, the best developed root systems were to be found on spring-rooted *Cassinia* and on autumn-rooted *Corokia*.

Table 1. Effect of time of year on rooting of cuttings of four New Zealand native plants¹

Month	Percent of cuttings rooted			
	<i>Corokia</i>	<i>Cassinia</i>	<i>Pittosporum</i>	<i>Pseudopanax</i>
January (summer)	26	11	3	35
February (summer)	57	25	13	41
March (autumn)	86	39	10	61
April (autumn)	98	84	38	55
May (autumn)	96	85	26	40
June (winter)	98	63	72	26
July (winter)	98	93	57	55
August (winter)	93	88	41	46
September (spring)	85	98	10	11
October (spring)	80	71	2	15
November (spring)	32	53	0	10
December (summer)	13	19	0	7

¹ Monthly mean from 30 cuttings per treatment taken at two-week intervals

LITERATURE CITED

- 1 Butcher, S M and M N Wood 1985 The vegetative propagation and development of *Sophora microphylla* Ait *Annual J. Royal NZ Inst. Hort* 13 52-54