EFFECT OF CUTTING SIZE ON ROOT FORMATION OF *ABELIA, LEUCODENDRON, BORONIA,* AND *METROSIDEROS*

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Selection of propagating material is one factor that influences the success of subsequent propagating techniques. Theoretically, the larger the cutting the sooner the plant will reach a saleable size, provided that the basic character of the future plant is not lost. Ease of root initiation is quite possibly influenced by the size of the cutting. The objective of this trial was to investigate the potential for using larger than normal cutting material.

Four test plants were selected that varied in growth habit and ultimate use. *Boronia heterophylla* and *Leucodendron* were selected as cut flower crops and *Abelia grandiflora* and *Metrosideros excelsa* were used to represent hedging plants.

Tip cuttings were harvested in mid-autumn when the wood was mature. The cuttings were prepared, dipped in "Seradix" containing 0.1% indolebutyric acid (IBA), then placed in peat:pumice (1:1, v/v), on bottom heat at 21 °C under fog. Cuttings of five sizes were used (2,8,14,18 and 27 cm), representing a range from those that were smaller than those usually taken, to those that were far larger than normal. Table 1 gives an indication of the effect of cutting length on rooting.

Table 1. Effect of cutting size on rooting of cuttings[1]

Cutting size (cm)	Percent of cuttings rooted			
	Abelia	*Leuco-dendron*	*Boronia*	*Metro-sideros*
2	90	50	60	30
8	100	30	30	80
14	100	70	10	70
18	100	40	10	90
27	100	60	10	10

[1] 20 cuttings per treatment

RESULTS AND DISCUSSION

The species indicating the clearest treatment effect was *Boronia*, which gave the best rooting percentage at the smallest cutting size with rooting decreasing steadily at larger sizes (Table 1). This was reflected, too, in the number of roots per cutting which was approximately 2.5 in the two smallest sizes, dropping to approximately 1 in cuttings larger than 8 cm. The best rooting regardless of cutting size was found in *Abelia* (90 to 100%). There was an indication for this species that the largest number of roots (approximately 6 per cutting) were produced by the 14 and 18 cm cuttings.

The *Metrosideros* and *Leucodendron* produced approximately 3 to 4 roots per rooted cutting across all treatments and no clear indication of the most desirable size of cutting for the latter species was evident. Intermediate cutting sizes were indicated as being best for the *Metrosideros* (Table 1).

A study is being made at present of the subsequent growth of the rooted cuttings. It should be noted that cutting size had no effect on the number of cuttings available per stock plant because tip cuttings only were used. This would not apply when propagating species from stem cuttings.