

EFFECT OF LATERAL WOUNDING IN GROWTH-REGULATOR-TREATED ARCTOSTAPHYLOS CUTTINGS

WALTER A. WISURA

Rancho Santa Ana Botanic Garden
Claremont, California 91711

Abstract. In a comparative study of laterally wounded and non-wounded cuttings of three species of *Arctostaphylos* Adans (Ericaceae) under mist house conditions, it has been found that in two hairy species, *A. andersonii* Gray and *A. tomentosa* (Pursh) Lindl var *tomentosiformis* (Adams) Munz, lateral wounding increases root formation to a very high degree. This is less so in *A. manzanita* Parry.

Normally true species are propagated by seeds. However, it is a well known fact that many of the species of *Arctostaphylos*, when propagated by seed, behave in an erratic fashion. It appears desirable then, to propagate them vegetatively. The majority of *Arctostaphylos*, species and cultivars alike, do not have any rooting problems when propagated by cuttings. There are, however a few species, notably the hairy ones and some of the larger upright species, which seem to require special treatment.

MATERIALS AND METHODS

As with most other evergreens, the cuttings should be at the "semi-hard" stage of development, a stage in Southern California usually reached by August/September. *Arctostaphylos andersonii* Gray, *A. manzanita* Parry, and *A. tomentosa* (Pursh.) Lindl. var. *tomentosiformis* (Adams) Munz, which responded poorly to previous efforts to root them in a conventional manner were chosen for the trial. On August 16, 1979 semi-hard tips 7 to 10 cm in length were cut in the usual way; half of the cuttings were laterally wounded from the base up for about 1 cm. They were then divided into equal parts and dipped into commercially available rooting powders and set into clay trays in a medium consisting of half vermiculite and half perlite. They were placed into the mist house with intermittent mist of 6 sec. every 12 min. The bench was heated by electrical cables to 25°C (77°F).

A. andersonii and *A. manzanita* were lifted on October 16, but *A. tomentosa* var. *tomentosiformis* remained on the bench until November 27. The rooted cuttings were classified and divided into four categories according to the quality of the roots:

- vg = very good; 6 (or more) primary roots emerging from the cutting
- g = good: 4 to 5 primary roots emerging from the cutting
- f = fair: 2 to 3 primary roots emerging from the cutting
- p = poor: 1 primary roots emerging from the cutting

The length of the roots was not recorded, but varied greatly. The majority of the primary roots showed, additionally, a fair

number of secondary and smaller roots.

RESULTS AND DISCUSSION

In the hairy species, *A. andersonii* and *A. tomentosa* var. *tomentosiformis*, the difference in rooting between laterally wounded and conventional cuttings is striking, less so in *A. manzanita*. In the case of *A. manzanita*, where a larger spectrum of rooting hormone could be explored, a marked decline in the percentage of cuttings rooted can be observed, when the level of IBA concentration is greater than 1 percent.

Since the number of cuttings involved in this trial was too small for proper statistical evaluation, the figures may not be conclusive, but nevertheless are indicative enough to show a trend. It appears that the lateral wounding of otherwise difficult-to-root species in the genus *Arctostaphylos* is beneficial.

Table 1. The effect of type of hormone and lateral wounding on rooting percentage and root quality of *Arctostaphylos* cuttings

Hormone	Type of cuttings	Percent rooted	Root quality (see above)			
<i>Arctostaphylos andersonii</i>						
Rootone F	not wounded	0				
Rootone F	wounded	100	2vg	5g	3f	
Hormodin 2	not wounded	10			1f	
Hormodin 2	wounded	100	8vg	1g	1f	
Hormex 8	not wounded	0				
Hormex 8	wounded	90	6vg	3g		
<i>Arctostaphylos manzanita</i>						
Rootone F	not wounded	90			3f	6p
Rootone F	wounded	80	4vg	4g		
Hormodin 2	not wounded	10				1p
Hormodin 2	wounded	70			2f	5p
Hormex 8	not wounded	40			2f	2p
Hormex 8	wounded	60		3g	1f	2p
Hormex 16	not wounded	30				3p
Hormex 16	wounded	40	1vg			3p
<i>Arctostaphylos tomentosa</i> var. <i>tomentosiformis</i>						
Rootone F	not wounded	10				1p
Rootone F	wounded	60	1vg	3g	1f	1p
Hormodin 2	not wounded	0				
Hormodin 2	wounded	60	1vg	2g	1f	2p

¹ 10 cuttings per treatment