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SOME TRIALS IN THE PROPAGATION OF *ACER SPECIES* BY CUTTINGS

TIMOTHY C. BROTZMAN

Brotzman's Nursery
Madison, Ohio 44057

The propagation of certain maples at Brotzman's Nursery began three years ago on a rather limited basis and remains so today. My initial efforts were stimulated by an interest in the genus and a desire to obtain some of the more uncommon and ornamentally desirable species Though by no means complete or absolute, I would like to share with you the results of my experiments.

Propagation facilities. The facility used is a 45 feet polyethylene covered hut with unheated ground beds 8 inches deep, filled with a propagation grade of silica sand. A 62% shade cloth covers the hut at all times. Inside summer temperatures and humidity can get very high, but neither seem to have an adverse effect on rooting.

Propagating procedures. Depending upon species and stage of growth, cuttings are taken from mature to semi-mature trees in late June through late July. Cuttings are of current season's wood, usually 4 to 8 inches long with the basal cut unrelated to node location. The bottom ⅓ to ½ of the leafier stems are stripped of leaves and the remaining leaves of such large leaved species as *A. macrophyllum, A. tegmentosum* and *A. cappadocium* are cropped back 50% Heavy cuttings are given two shallow wounds about 1 inch long, although most require a single wound. Following a 25% Choloromone-in-water quick dip, or an IBA in talc treatment, the cuttings are inserted in either the ground bed or 4-inch deep flats of fine sand and placed under intermittent mist. Once rooted, cuttings are weaned away from the mist to avoid saturation of the root zone.

Overwintering. During the winters of 1978-79 and 1979-1980, the unheated hut was protected only by an air inflated double polyethylene layer and the shade cloth. Though coldest bed and air temperatures are not known, freezing was not uncommon. Due to unsatisfactory overwintering of some *Acer* species and injury to cuttings of other plants, those in the bed during 1980-1981 will be given the additional protection of polyfoam blanket. Flats will be stored in a covered pit with thermal blankets laying directly over their tops.

Rooting performances. Table 1 indicates my experiences with rooting *Acer* cuttings. Complete data from some trials were not available and, for the 1980 season, rooting percentages were based on the firmness of the cuttings in the medium, not from visual inspection of roots.

Table 1. Rooting results of selected *Acer* species

Plant	Date taken	Quantity	Hormone treatment	Rooting medium	Percent rooted	Over-wintering success
A buergeranum	6/22/80	43	2% IBA	fine sand	60%	
A buergeranum	6/22/80	25	25% Choloro-mone	fine sand	36%	
cappadocicum 'Aureum'	6/22/80	27	2% IBA	fine sand	78%	
A cappadocicum 'Aureum'	6/22/80	19	25% Chloro-mone	fine sand	79%	
A capillipes	7/78	8	2%(?) IBA	silica sand	100%	100%
A capillipes	7/3/80	22	8% IBA	fine sand	68%	
A cissifolium	7/78	?	1%(?) IBA	silica sand	100%*	100%*
A griseum	6/27/79	75	1 5% IBA	fine sand	75%	50%*
A griseum #1	6/25/80	17	2% IBA	fine sand	41%	
A griseum #2	6/25/80	6	2% IBA	fine sand	17%	
A griseum #3	6/25/80	14	2% IBA	fine sand	64%	
A griseum #4	6/25/80	7	2% IBA	fine sand	71%	
A griseum #5	6/25/80	15	2% IBA	fine sand	80%	
A griseum #6	6/25/80	27	2% IBA	fine sand	70%	

Table 1. Rooting results of selected *Acer* species (continued)

Plant	Date taken	Quantity	Hormone treatment	Rooting medium	Percent rooted	Over-wintering success
A griseum	6/25/80	70	2% IBA	fine sand	66%	
A henryi	6/22/80	6	2% IBA	fine sand	100%	
A macrophyllum	6/22/80	?	2% IBA	fine sand	0%	
A macrophyllum	6/22/80	?	25% Chloro-mone	fine sand	0%	
A miyabei	6/22/80	44	2% IBA	fine sand	98%	
A miyabei	6/22/80	40	25% Chloro-mone	fine sand	95%	
A pseudo-sieboldianum	6/22/80	49	2% IBA	fine sand	61%	
A spicatum	7/78	?	2% IBA	silica sand	25%	0%
A spicatum	7/19/79	?	1 5% IBA	silica sand	0%	
(single node)						
A spicatum	7/3/80	24	8% IBA	silica sand	17%	
A tegmentosum	7/79	?	1.5% IBA	silica sand	75%*	100%*
A tegmentosum	7/3/80	183	8% IBA	silica sand	70%	
A triflorum	6/22/80	45	2% IBA	fine sand	58%	
A triflorum	6/22/80	12	25% Chloro-mone	fine sand	17%	

* Exact percentage not known — this is a close estimation

OBSERVATIONS AND CONCLUSIONS

Most rooted cuttings will not break dormancy before autumn leaf drop. However, those that do will overwinter much better than those that do not Perhaps by taking the cuttings earlier the use of supplemental lighting or gibberellic acid would enhance the initation of new growth

Root disturbance, especially in *A griseum*, before dormancy brakes, is disastrous. Delaying transplanting until new growth begins and keeping the roots from freezing should greatly reduce mortality. Direct sticking in pots might be an answer.

My trials included cuttings from 6 *A. griseum* selections and random field assortments. From the results, I conclude that clonal selections for rootability should be made.

Strength of hormone is important for quick, well-structured rooting, and needs to be increased as the season and the hardness of the wood develops. Chloromone, I had been told, works better than powders on green-stemmed cuttings with heavy lenticels. Though used here with no noticable positive results, I will pursue the use of Chloromone again in the future.

In most cases there has been a limited number of cuttings at my disposal, so I have not been able to test the importance of cutting length or number of nodes (usually 3-4) in my trials. One sample of single node *A. spicatum* cuttings, however, did not root at all, whereas multi-node cuttings did. Perhaps the successes enjoyed by many nurserymen with single node cuttings of *A. rubrum* cultivars are not possible with all *Acer* species.

I was very surprised by the good rooting of *A cappadocicum* 'Aureum' despite the fact that the cuttings were stuck fresh, with no special preparations. I though that such species with milky sap did not root easily. In the future, I will try to duplicate this success with *A. campestre, A. mono* and *A plantanoides.*

Cuttings must be weaned away from the mist as soon as they are rooted; good drainage around the new roots is important. In one case a raised flat of *A. griseum* cuttings sitting next to cuttings in the bench rooted much better, indicating the advantage of better medium porosity. I will also try various peat, styrofoam and sand mixtures in an effort to eliminate the excess weight of sand-filled flats

PROPAGATING PIERIS AND LEUCOTHOE

EDWARD LOSELY

Herman Losely & Son Nursery, Inc.
Perry, Ohio 44081

This presentation will restrict itself to those *Pieris* and *Leucothoe* species that are produced at our nursery. We propagate and grow *L. fontanesiana (L. catesbaei);* *L. fontanesiana* 'Girard's Rainbow, a form with mulit-colored leaves; and the related *L. axillaris,* a plant with smaller leaves, smaller stature, and more compact habit of growth. We propagate and grow our own selection of *Pieris japonica* and also *P. japonica* 'Variegata'. We tried and discarded several so-called pink selections of *P. japonica* as not hardy enought for field production in northeast Ohio.

All *Leucothoe* and *Pieris* are propagated from cuttings using a procedure developed by our propagator, John Ravenstein.