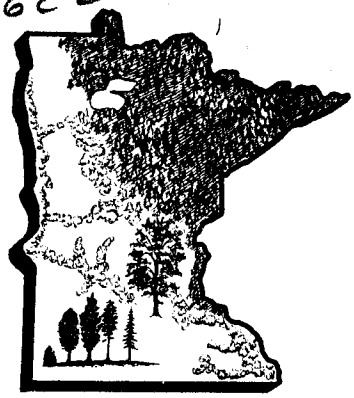

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PROPAGATION OF AMERICAN BASSWOOD BY CUTTINGS

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American basswood (Tilia americana L.) is a vigorous sprouter, yet little is known about artificial reproduction of this species by vegetative means. This paper reports results of exploratory studies on the rooting of cuttings. Minnesota Forestry Notes No. 85 reports the results of air-layering tests.

The study was divided into two phases: (1) to explore the possibility of rooting dormant wood cuttings; and (2) to test the rooting ability of softwood (new growth) cuttings.

Dormant cuttings were collected in December of 1958. All cuttings were from 1958 growth and were cut to a length of five inches. The cuttings received the following treatments:

1. Basal end dipped in "Rootone" powder and stored in cold room at 40° F. for 11 to 15 weeks in moist sphagnum.
2. Basal end dipped in "Rootone" powder. Stored in cold room at 40° F. for 9 to 13 weeks in moist sphagnum; and then at a temperature of about 63° F. for two weeks in moist sphagnum prior to planting.
3. Stored in outdoor coldframe until planted (control.)

The cuttings were planted March 21-23, 1959, in coarse sharp sand of a greenhouse rooting bench and kept well watered. Results are summarized in the following table:

TABLE 1

Source of Cuttings	Treatment Number	Number of Cuttings	Number Rooted 5/30/59	Number Rooted 7/22/59	% Rooted
4-6 year	1	174	0	1	0.6
stump	2	176	0	0	0.0
sprouts	3	136	0	7	5.1
2 year old	1	586	0	8	1.4
stump	2	574	2	13	2.3
sprouts	3	423	0	1	0.2
Tops of	1	270	0	0	0.0
75-110 yr.	2	275	0	0	0.0
old trees	3	197	0	0	0.0
Total	-	2811	2	30	1.1

Within three weeks after planting, buds began to open and shoot elongation was noted; however, most of the cuttings died without callousing or rooting. It was concluded that the rooting of dormant wood cuttings by the treatments used is not a practical method of propagating basswood.

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Softwood cuttings were made at two week intervals beginning June 12 and ending August 24, 1959. The materials were collected from the same three year old stump sprouts throughout the study and received the following treatments:

1. Leaf not removed but surface area reduced by trimming; basal end dipped in "Rootone".
2. Leaf not removed but surface area reduced by trimming; basal end not treated.
3. Leaf removed; basal end dipped in "Rootone".
4. Leaf removed; basal end not treated.

Each periodic collection of cuttings was treated and planted in a greenhouse rooting bench immediately after collection. Each group was lifted and checked for root formation approximately 13 weeks after planting.

The results (Table II) indicate that: (1) in all cases where the leaf was removed, no roots were produced; (2)"Rootone" apparently had no effect on rooting ability of softwood cuttings; (3) there is a definite relationship between date of collection and rooting ability, late spring or early summer being the best; and (4) some indication of diversity in rootability among clones is suggested.

TABLE II
Rooting of Softwood Cuttings*

Clone Number	Total Cuttings Per Date of Collection	Treatments	No. Rooted after 13 weeks (Classified by date of collection & planting) 6/12	6/26	7/14	Total Rooted	% Rooted
I	12	1	3	4	1	17	47.2
		2	3	6	0		
II	13	1	6	1	0	16	41.0
		2	5	4	0		
III	12	1	3	1	0	8	22.1
		2	3	1	0		
IV	13	1	2	5	0	16	41.0
		2	4	5	0		
Total	50		29	27	1	57	
% Rooted			58%	54%	2%		

*Results of treatments 3 and 4 were all negative and were not tabulated; similarly, cuttings in treatments 1 and 2 for all clones showed no rooting after July 14 and are not included in the table.

Results of these studies indicate that the rooting of dormant basswood cuttings is not a promising method, whereas rooting of softwood cuttings made in late spring or early summer offers a feasible method of propagation.

Figure 1. Potted dormant season cuttings. Photo Sept. 2, 1959.

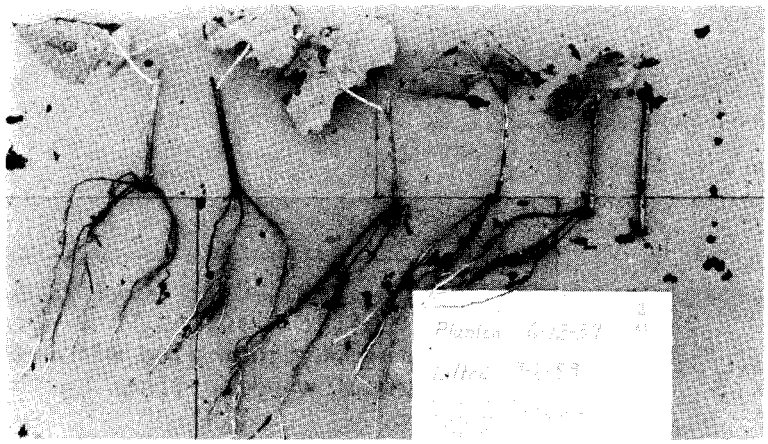

Figure 2. Rooted softwood cuttings after 13 weeks in a greenhouse rooting bench. Photo Sept. 2, 1959

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