Care of the Cuttings. The cuttings are misted once a day until rooted which varies between 1 to 3 weeks depending on the type of cutting and the time the cuttings are taken. The flats are watered once after about 2 weeks with 100 ppm of 20N-10P_2O_5-20K_2O general purpose Peters fertilizer.

Once an acceptable percentage of cuttings are rooted, the glass is lifted slightly for about 3 days, a little more for 3 more days, and then taken off. The flats are then shifted to a growing house until they have put on some new growth and potted for field planting.

Note. For whatever reason, we had a lot of trouble with leaf drop during the period preceding the rooting. After trying many alternatives, the addition of iron (Sequestrene 138 Fe) to the stock plants seemed to halt much of the leaf dropping problems. Also by adding iron to the rooting medium it is readily available for the first emerging roots while at the same time we are giving a foliar application of iron to the cuttings.

The elms seem to enjoy having a lot of iron. When the stock plants show a little iron deficiency they are re-treated with Sequestrene at 1 tsp gal^{-1}.

The rooting percentage varies with timing of cuttings, but 50% to 90% is typical.

Softwood Cutting Propagation of *Eucommia ulmoides*

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INTRODUCTION

The name *Eucommia* (*eu*, well and *kommi*, gum) is an illusion to the quality of the rubber contained in all parts. *Eucommia ulmoides* better known as hardy rubber tree is interesting because it is about the only rubber tree that grows and overwinters outdoors this far north. When leaves are torn gently across, the threads of rubber remain and can be easily seen. At the Royal Botanical Gardens in Hamilton two hardy rubber trees have been diligently guarding our east driveway entrance to our center since 1956.

The bark of *Eucommia* when first discovered in China around 1900 was being used in a medicinal tonic by the Chinese people. Today, rubber yields are found to be too low and difficult to extract compared to the great tropical rubber tree *Hevea brasiliensis*, thus eliminating it from commercial rubber production. In appearance the tree resembles a 40 ft elm showing off 3-in. long, glossy, alternate, sharply toothed, pest- and disease-free leaves. The plant is dioecious and exhibits no fall colour. *Eucommia ulmoides* is definitely a worthy candidate for street or lawn specimen plantings!

OBJECTIVE

To compare the success rate of rooting softwood cuttings of *E. ulmoides* taken at different time periods of the growing season using 5000 ppm IBA quick-dip solution.

A review of the literature shows very little work recorded on the propagation of *Eucommia*. Al Fordham talks about hardy rubber tree having a poor reputation for germinating, about 40% in 10 days after a 2-month cold period. Various horticulture encyclopedias mention that the plant can be propagated from seed or cuttings but give

no further statistics. Michael Dirr also mentions that seed production of *Eucommia* is possible after using 2 to 3 months of moist stratification, and that cuttings are 57% successful using choromonel-napthyl-acetamine when new growth is forming.

MATERIALS AND METHODS

One hundred cuttings were taken on two separate occasions (12 June and 27 June 1996) and stuck into plug trays each cell (1 1/2 in. wide × 6 in. deep) containing sand and screened peat moss (4 : 1, v/v). The trays were set under intermittent mist with bottom heat set at 75F and 45% shade cover.

Where possible each cutting included three nodes, a fresh cut just below the node, a wound ° in. long above the node to encourage root development and a 5-sec quick-dip into Stim Root 5000 (0.5 % indole-3-butyric acid). The cuttings were checked daily and pulled on 11 Sept. 1996 to be examined and potted.

RESULTS

The cuttings were grouped into three different categories by percentage that died, callused only, and rooted.

Table 1. Rooting of *Eucommia ulmoides* cuttings.

	Cuttings taken on	
Rooting category	12 June 1996	27 June 1996
Dead	14%	8%
Callused only (still green)	29%	52%
Rooted	57%	40%

DISCUSSION

The cuttings taken on the earlier date of 12 June rooted the best; 57% compared to 42% rooted on 27 June. The rooted cuttings of the earlier date seemed slightly better in quality and numbers of roots. Whether the (callused only) cuttings would root if left in the trays for a longer period of time is hard to say. Different strengths of IBA rooting hormone may make a difference; although preliminary findings from past experiences trying to root *Eucommia* at Royal Botanical Gardens refute this idea.

There is a possibility that increased rooting percentages could be attained by using other types of rooting hormones such as α-naphthaleneacetic acid (NAA) or indole-3-acetic acid (IAA). Higher percentages might also be acquired if the cuttings were taken earlier than 12 June. They would be very small only one or two nodes at most. *Eucommia ulmoides* is not used in our landscape setting and should be given some serious consideration.

LITERATURE CITED

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