

of the area so that dust particles and vapors can be drawn out and away from the user much like the fume hoods found in many laboratories.

- Slugs are especially fond of small seedlings and many chemicals and treatments harsh enough to eliminate the slugs might be enough to eliminate the seedlings as well. Granulated garlic powder offers a quick slug proof barrier and can be applied directly onto the seedlings. Slugs can not stand the smell of garlic and will quickly leave the area. Caution, do not use garlic salt, that is not a good product to apply to seedlings.
- Cleaning seed is an arduous task that can be speeded up by using a cement mixer with appropriate abrasive such as lava rock or golf balls. The recipe is simple, 1 bucket of fruit to be cleaned, two or more buckets of water and four to five stones or golf balls. Turn machine on and let it run until the pulp is macerated, usually 1/2 to 1 h. Drain, flush with clear water several times. The clean seed should be in the bottom of your container with the pulp and pieces floating off. This works best if the pulp has been allowed to ferment and breakdown prior to being put into the machine.

Winter Propagation of *Ulmus* 'Regal'

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Though elms can be propagated from softwood in the summer time or from shoot cuttings taken from pieces of roots stuck in flats in the winter months, we have found that taking "micro cuttings" from canned stock plants forced in a heated plastic house in the middle of the winter to be more reliable and economical.

Preparation of the Stock Plants. The canned stock plants are put in a plastic house in early December. On 1 Jan. the furnace is turned on and the temperature set at about 50 to 60F. On 15 Jan. the stock plants are trimmed on top lightly and re-canned if necessary. These are elms that are 1 to 5 years old. Then they are topdressed with 3-4 month Nutricote 14N-14P₂O₅-14K₂O at medium rate. On 30 Jan. each can is given Sequestrene 138 Fe at 1 tsp gal⁻¹ and the temperature is raised to 65F.

Preparation and Treatment of the Cuttings. February 15th, the first cuttings are about ready to be harvested. We take the tips from the slower-growing side shoots; they are the best. We remove the lower leaves being careful not to tear the base of the cuttings to reduce rotting. If possible we leave a node at the base. The cuttings are then dipped in a solution of Dip 'n Grow for 5 sec. They are stuck in flats in Fafard #2 and drenched with 1 1/2 tsp of Banrot and 1 tsp of Sequestrene gal⁻¹. The flats are covered with a sheet of glass and put on a light shelf unit. We used cool white tubes with a light intensity between 500 and 750 fc. The temperature of the medium is about 70F.

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-10P₂O₅-20K₂O 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