

I realize that these tests have been on a small scale, but I hope that they will be of some help to some of the members. By the same token, if anyone has any suggestions as to how our methods could be improved, I would be very happy to hear them and try them.

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MODERATOR HALWARD: We now have time for a short question period here. Has anyone any questions to ask Richard Hampton, Bill Cumming or David Paterson? If there are no questions, we will continue with the second half of our program this morning, which comes under the heading of "Hardwood Cuttings."

Our first speaker is Mr. Phillip Worth, Kankakee Nursery Company, Kankakee, Illinois, who will discuss "Growing Fall Stock Hardwood Cuttings." Mr. Worth

MR. PHILLIP W. WORTH (Kankakee Nursery Company, Kankakee, Illinois): This is nothing that can be called a new procedure or new method, but possibly some of the techniques that we have used may be of interest to you. There is nothing at all technical about the way we propagate plants from hardwood cuttings

As a matter of fact, it could all be summed up in four words, that is, we *take* them, we *saw* them, we *stick* them and we *dig* them

## GROWING FALL STOCK HARDWOOD CUTTINGS

PHILLIP W. WORTH  
*Kankakee Nursery Company*  
*Kankakee, Illinois*

The history of our procedure started as a result of the poor stands we had been getting by taking the cuttings and storing them over winter. We knew we had a soil that was, you might say, a natural rooting medium, being very sandy, light and well drained. About three years ago we stuck possibly around 10,000 cuttings of the more or less easily rooted common shrubs in the fall. This was done at a time when in our operation we had approximately two or three weeks in between additional evergreen diggings and before we were able to start digging deciduous material. In these two weeks we would usually have five or ten men standing around doing only fill-in jobs. We were very elated with our results this first year but still were a little pessimistic because we realized that the excellent results we obtained may happen this time and maybe never again. However, we again had very good results.

The next year we went into it a little more extensively, sticking three or four times as many cuttings, and again we had very good results. For us it is a labor saver. There is no need for costly storage. We take the cuttings, process them, and they go directly into the field. We were losing many of our cuttings handled overwinter because of the lack of mechanical refrigeration.

We generally take all one-year-old wood which is produced on mother block or cutting block plants reserved for this purpose. Although only experimental, we have tried applying a water soluble fertilizer to these stock plants in an effort to condition the cuttings for root-

ing. Incidentally, the majority of the time we leave the leaves right on the cuttings when they are made up on the band saw. We make the cuttings eight inches long for fall sticking, and only seven inches for those planted in the spring. One thing we have tried this year is taking these cuttings, particularly the lengthy ones, tying them in bundles and packing them in peat, in boxes, wetting them down and more or less sweating the leaves off before planting.

In planting we plant about 1½ inches apart in the row and have been doubling the rows around six inches with each set around 42-inches apart. We realize that we are losing a lot of space. However, the reason we have not done it differently was because the equipment we have is set up to take care of these wide rows and we didn't want to go to the expense of buying new equipment until we were sure that this was going to be a real practical thing. Actually, we are still experimenting. However, we do intend later on to put the cuttings in single rows on probably 18-inch centers. In planting, the cuttings are put about seven inches in the ground and covered by throwing dirt up with the cultivator.

We are also going to try leaving about an inch uncovered to see if it doesn't work just as well as burying them.

Some of the results we have obtained by this method of propagation are as follows: *Chaenomeles lagenaria rubra*, 65 percent, *Physocarpus opulifolius nanus*, 90 percent, *Spiraea bumalda* Anthony Waterer, 86 percent, *Spiraea thunbergii*, 23 percent, *Spiraea zabeliana*, 96 percent, and *Syringa rothomagensis*, 48 percent. Other plants we propagate include *Deutzia spp.*, *Hydrangea A.G.* and *P.G.*, *Ligustrum spp.*, *Philadelphus coronarius*, *Philadelphus virginialis*, *Prunus cistena*, *Prunus glandulosa*, and *Viburnum tomentosum*.

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MR. HOOGENDOORN: Have you tried any of the weigelas' or forsythias' in the fall from hardwoods?

MR. WORTH: No, we haven't tried weigela but we have been getting some excellent results with forsythia in the spring.

MR. MERTON CONGDON (North Collins, New York): Can you be just a little more specific about the dates when you take the cuttings from the stock plants?

MR. WORTH: Yes. In a normal year we start between the 15th of September, and probably finish around the tenth of October.

MR. FLEMER: How did you uncover the cuttings that were covered over in the fall?

MR. WORTH: We didn't. As you probably noticed, we used a tiller to prepare the bed and so naturally the soil was fluffed up. By the end of the winter, after the rains and snows, the ridge was packed and over an inch or an inch and a half of the cutting was exposed.

MR. MARTIN VAN HOF: How close to the tip of the cane do you come in making your cuttings?

MR. WORTH: We try to make all of our cuttings about the size of a lead pencil. To do this sometimes we have to go all the way to the tip of the cane.

MR. VAN HOF: In the latter part of September the wood is still green, doesn't it bend when you stick it in the ground?

MR. WORTH: Oh, no, they are not that soft.

MR. VERMULEN. Do you have any trouble with the cuttings heaving out of the ground during the winter?

MR. WORTH: This is a good question. They might heave out as much as one half of their length. We hire some schoolboys to put them back. They can put 100,000 cuttings back in the ground in a day.

MR. HOOGENDOORN Did you ever try putting on a mulch after you get them stuck?

MR. WORTH: No. I have thought a lot about it.

MR. LOUIS SAUR: Have you tried making your cuttings and putting them in different kinds of soil, other than the sandy loam you described?

MR. WORTH: No, I have never tried it on any different type of soil.

MODERATOR HALWARD: Thank you, Mr. Worth

The next speaker on the program needs no introduction. Those of you who were on the tour the other day saw him and what he has been and is doing. The next paper is on "*Magnolia and Viburnum* from Hardwood Cuttings," by J. Ravestein.

Mr. Ravestein then presented his talk on the "*Rooting of Magnolia and Viburnum* from Hardwood Cuttings." (Applause)

## ROOTING OF MAGNOLIA AND VIBURNUM FROM HARDWOOD CUTTINGS

J. RAVESTEIN  
*Gerard K. Klyn*  
*Mentor, Ohio*

We collect our magnolia cuttings from old plants which we have been using for a number of years to produce layers. We take the current season's growth which shoots up in the middle of our plant. The length of these cuttings doesn't matter and we cut them nearly any size. The longer these cuttings are the better, since through the years we have run our tests it has been shown that the stronger and longer the cuttings are, the better the percentage of survival you have, that is, if you have any at all.

The wood for our viburnum cuttings is taken from plants which have been budded the previous year. One such plant is *Viburnum carlesii*. Here also we prefer the longer cuttings. If I may go off the subject for a moment I would like to note that we have also in our tests the Japanese maples, Purple beeches, and the Cutleaf red maple.

We take our wood as soon as the dormant stage sets in, that is, in our part of the country, around the beginning of November. In some years we have to take the terminal leaves off. After cutting they are brought into the greenhouse where we have an average temperature of around 70° F. We keep them in the greenhouse for about two days before they are made up. As I stated before, our cuttings are quite