

PYRACANTHA FROM CUTTINGS

E. STROOMBECK

Warner Nursery, Willoughby, Ohio

Like Roger mentioned, the propagation of *Pyracantha* from cuttings isn't a very difficult proposition. At first I raised my eyebrows a little when he asked me to give a short talk on this subject. On second thought, I realized that while the rooting process itself is simple, we usually get into differences of opinion and some trouble when we get to the point where we have to decide what we are going to do with our rooted cuttings in order to get first-class transplants and later on liners. Last year we decided that a propagators work is not restricted only to the rooting of shrubs and evergreens in the greenhouse, but definitely includes the proper care and handling of the plants during their first year, so I thought that I would put the emphasis of this short talk on the care of the plants following rooting.

Now, in short, let's go over the rooting procedure itself. We root our pyracanthas by the end of September. During the beginning of August we take our cuttings from field plants. We prefer ripe rather than hard wood, but you can take the cuttings in July, when they are still rather soft, through December. It depends on the kind of operation one has.

We make our cuttings about 5 to 6 inches long and strip the leaves and needles about half way up the cutting. This causes plenty of injury along the stem, which proves to be beneficial in the rooting process, especially if you use hormone powder. To root pyracantha, it is not necessary to use hormone powder, but we use Hormodin No. 2. In this way we get plenty of short, sturdy roots located on the base of the stem and this has its advantages when we handled the rooted cuttings later on in the transplanting operation. If we don't use powder, we usually see fewer roots which are distributed all along the stem. They are also usually longer and more tender.

The rooting medium consist of a mixture of Dutch peat and sharp sand but I know some propagators have excellent results by using only sharp sand. In this last case, we have to watch the time of transplanting. If you leave them too long in the sand, the roots usually turn bad and they die off in the sand. With light shading, a constant temperature of 65 and up, plus high humidity, we get good rooting in three weeks.

Now we get to the point where we have to decide what we are going to do with the rooted cutting and this in turn depends on what kind of an operation we have and what kind of plant we wish to grow. We have to keep in mind two qualities of pyracantha. In the first place, it naturally makes long, thin roots that don't branch out easily and in connection with this, it wilts very easily and doesn't seem to recover from the transplanting shock. This applies also to liners when they are transplanted in the spring. These two points are the reason pyracantha causes us trouble when we plant in the spring, or out in the field rows, especially if we have dry weather. So the question is: Are we going to have some dirt stick to the roots after the roots branch out?

The way a lot of propagators solve this problem is to pot their rooted cuttings directly into fairly large size pots, three's or four's, and after they are potted, plunge them into a frame and leave them there for a year. This

way isn't satisfactory to us in the nursery. In the first place, we don't have the space available, and in the second place, it proved that although the pyracantha make a nice tight ball, the top isn't satisfactory.

Our procedure is as follows. After they are rooted we pot our cuttings up individually in small pots, two to two and a half inches in size. The timing for lifting the cuttings is important. The shorter the roots, the easier they handle in these small pots. If you wait a little too long the roots get long and brittle and get damaged easily in the transplanting operation. Losses, then, are high.

As a potting medium we use Michigan peat. I know a lot of you propagators are familiar with it. It is a fine textured peat moss with the pH around 5. With us, it proved to be very satisfactory for all kinds of evergreens, including rhododendrons, magnolia, and hollies, and its advantage is that you don't have to go through extra mixing operations by adding sand, humus or other material.

After the rooted cuttings are potted, we put them into flats and bring them into the greenhouse where the same conditions prevail, as in the original house. Here they adjust themselves to the conditions and start new growth in three to four weeks. In the meantime the top starts. This is about October or the beginning of November. In the northern part of Ohio we usually have 3 or 4 nice days of Indian summer during which we put the plants in the frames. We keep the special greenhouse conditions up to the last day for the simple reason we keep bringing in potted plants and flatted cuttings all of the time. Before we bring them out we spray the plants, in the case of pyracantha, with a light mixture of Wiltpruf and this proves to be very beneficial. This adjusts the cuttings to the sudden changes in temperature experienced during Indian summer. Even on cold nights, with our treatment, the tops don't get damaged. The pots are plunged in Michigan peat again. On top of it, we place a layer of one and one half inches of Dutch tree peat. Under this layer the root growth goes on slowly nearly all winter.

We cover with sash and if you get real cold weather after the plunging, we cover the plants. In the spring we take the sashes off as soon as possible, usually by the beginning of April. Then during April we give one application of fertilizer. We use 15-30-15 for that purpose. We cut off the top of the plants around May 20th and we are ready for the bedding operation. In the meantime we have given the cuttings a light application of Wiltpruf. We have quite an extensive bedding operation. Our beds are about five-feet wide, so they are suited for all kinds of mechanical operations with tractors, sprayers, trailers, etc.

We shovel the paths out, because in these beds our soil is quite heavy. We gravel the paths. The beds have plenty of overhead irrigation all summer long. On top of the bed we use 6 to 8 inches of straight Michigan peat.

During June, after planting is over, we give one application of a dry fertilizer. We use Vigoro for this purpose and open up the irrigation line right after it is applied. Then by the end of June we go to the special job of digging around each plant individually with a trowel to cut the roots, raise the plant and push it down again. This seems to be a very complicated operation, however, the peat beds are soft and a couple of high school boys can easily do around 5,000 plants a day.

We use a dark day for this purpose because the tops will wilt very easily and if you get the sun coming out on a dark day we will open up the irrigation lines. Right after this operation we give an application of liquid fertilizer, usually Rapidgro, and repeat this same operation again in August at least once, and if we have the time, twice. I think you should do it at least twice. The last time is especially important, because in that way your plant will harden up well and you get an excellent liner. This was the point I wished to make in this short talk this afternoon.

We had difficulty this year on account of our crowded program and didn't have time to go around twice. I didn't know I was going to give a talk and I think the exhibited plants had only been dug around once during the summertime. We have plenty of top growth and a nice ball, which can be handled for all kinds of operation, for planting in the fall or springtime, fall selling and packing in wire crates, or which is getting to be more and more popular, planting and growing on in cans. (Applause)

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MR. JACK VERMEULEN (Weller Nurseries, Holland, Michigan): Don't you find these plants grow only in peat? They are very hard to transplant in any other kind of soil. Years ago, when we imported our trees from Holland they came in these peat balls which we could set out in the soil in America. We had a lot of loss.

MR. STROOMBEEK: We don't seem to have trouble. We get fairly good growth in rather heavy soil. Once the root system has originally developed well, it remains a good root system no matter what soil you plant it in later on.

MR. JACK BLAUW (Koster's Nursery, Bridgeton, N. J.): It seems to me it is a rather expensive way to grow *Pyracantha*. If you take them out of a two and a quarter, or a two and a half inch pot and plunge them in a tin can, you can leave them there two years. After the first year you have them just as big or bigger than those grown in Michigan peat. Of course, Michigan peat may be very cheap here, but in New Jersey it is expensive. The way we have to grow them those plants would cost us around \$1.50.

MR. STROOMBEEK: We are located a little closer to the source of peat. We use it very extensively for all our bedding and planting operations.

MR. CARL GRANT WILSON: Do you use quite a bit of sawdust for mulching?

MR. STROOMBEEK: We cover the beds with sawdust in the early fall.

MR. WILSON: What precautions do you take to prevent nitrogen deficiency?

MR. STROOMBEEK: When we have planted for two years we give an early application of nitrogen fertilizer in the spring, usually in April.

MR. WILSON: Nitrate or sulphate?

MR. STROOMBEEK: We use a combination fertilizer with nitrogen in it.

MR. WILSON: You haven't produced any formulation of how much is needed?

MR. STROOMBEEK: No.

MODERATOR COGGESHALL: Thank you very much, Mr. Stroombeek. This concludes the afternoon portion of this meeting. The Exhibitor-Speaker portion will be continued tonight at 8:00 p.m.

The session recessed at 4:45 o'clock and reconvened at 8:00 p.m.

MODERATOR COGGESHALL: The first speaker this evening is Mr. Logan Monroe, Kingswood Nurseries, Mentor, Ohio. Mr. Monroe is to speak to us on the propagation of Forsythia Spring Glory and Lynwood Gold from cuttings. Mr. Monroe!

PROPAGATION OF FORSYTHIA SPRING GLORY AND LYNWOOD GOLD FROM CUTTINGS

LOGAN MONROE

Kingswood Nurseries, Mentor, Ohio

Forsythia has gained a place of importance in the nursery business mainly because of its early bloom and also because of its brilliant color. It is actually about the first really noticeable deciduous shrub to bloom in the spring, coming in April about the same time as the daffodils.

There were two original species of *Forsythia* - *suspensa* and *viridissima*. *F. suspensa* is the low form which droops, the ends of the branches touching the ground and normally taking root. *F. viridissima* is just the opposite, a very tall upright form and a strong grower.

Years ago the nurserymen wanted an intermediate variety so they crossed these two and came up with *Forsythia intermedia*. It is from this species that most of the varieties that we know today have come, particularly the two that I would like to talk about tonight — Spring Glory and Lynwood Gold.

Spring Glory is a light lemon yellow and was selected because of its prolific bloom and its habit of growth. It has a rather bay-shaped form and has a definite intermediate tip. Lynwood Gold is a deep golden yellow. It has recently been introduced from Ireland and is actually more prolific, as far as, bloom than Spring Glory. Both varieties can be propagated fairly easily if a few of the simple rules of propagation are observed.

We use softwood cuttings almost entirely and we have propagated them in two different structures. We propagate them in a concrete block frame covered with sash and the sash in turn covered with unbleached muslin on a framework. We also have been able to propagate them successfully in our greenhouse. Now this latter method I won't cover too extensively. I will be speaking mainly of propagation in a frame.

I would like to tell you first of all, though, how we were able to use a greenhouse for propagating softwood cuttings in the middle of the summer.

We shade it heavily with a shading compound and normally we use Kemtone, a household paint, which is relatively inexpensive. Also, the major