

## WEDNESDAY EVENING, SEPTEMBER 3, 1975

### QUESTION BOX

MODERATORS: James O'Friel and Bruce Usrey.

MODERATOR O'FRIEL: Here is the first question. Why do you use only peat and perlite in rooting mixes? There are others just as good.

HOWARD BROWN: I think one of the reasons for using peat-perlite more and more is that they are fairly standard and lightweight, and they are fairly uniform throughout my experience. If you take compost or sand, you may get different grades of sand and some are not really clean. Peat-perlite mixes have proven to be fairly standard over a period of time.

MODERATOR O'FRIEL: Has anyone had a successful experience using Osmocote as a fertilizer in the rooting medium?

BARRIE COATE: I can't say that I have had good results, but the requirement of the IPPS to contribute a paper every few years brought forth a paper that told about a terrible success with Osmocote. We tried Osmocote at two different levels — that is, scattered on top and incorporated all through the mix; we tried also blood meal; and some directly on the bottom of the flat; and a control, of course. We used *Magnolia grandiflora* and *Rhamnus alaternus*. With all treatments we had equally poor rooting results with *Magnolia* and equally good results with *Rhamnus*. In other words, addition of Osmocote and blood meal did not show any beneficial results. Of course, there might have been other things involved that had more effect than the Osmocote.

VOICE: Could I disagree with the previous gentleman? We use Osmocote 14-14-14 in all our rooting media. And we get extremely good results. Maybe our rooting medium is different. We are using at least 50% sawdust in our rooting media. And we incorporate 5 pounds of Osmocote 14-14-14 per yard and we get 95% rooting. We grow general ornamental nursery stock.

BILL CURTIS: What kind of sawdust do you use?

VOICE: Any kind of sawdust.

BRUCE BRIGGS: One thing that you might consider is that in these two cases you are looking at two different environments and two different media. First of all, sawdust ties up the excess nitrogen so you don't get burning from it. In the South, where Barrie Coate is, the weather is warmer. Nitrogen release from the Osmocote may come quicker than it can be used up, before the roots are formed, and there may be burning from it. So there are two different conditions. In the Eastern Region, IPPS meeting, last year there was a paper on Osmocote. It had experimental data and there was an improvement in rooting with Osmocote. They were

working in a cool climate under cool conditions. I think what we need is the release of nitrogen just about the time the roots come out, but without a substantial increase. Going back further to work that was done 20 years ago by Art Myhre in Washington State on blueberries, he found a substantial rooting increase with fertilizer in the medium, but here again he was working under cool conditions.

VOICE: I would like to contribute something, irrespective of climate, on Osmocote. We have been working with the Osmocote people on some tests. Their own chemist claims from all the work he has done with it that there is no significant release of material, under almost any conditions, no matter how hot or cold, for at least a couple of weeks. Under cooler conditions, probably a couple of months is required; this is irrespective of the amount of water applied. This is the way the material acts. It is actually water vapor absorbed into the capsule that is significant. You can actually have the material in a bucket of water with no release of material for this length of time. So, for very fast rooting plants, it really couldn't be any significant aid; but if you want to leave the plants in the medium for a length of time afterwards, you can certainly give them a boost.

LES CLAY: I can add something to this. We have used Osmocote in most of our mixes for a while now. We have tried some with, some without, and we have noticed a significant increase in plant condition, a better root system, a much better looking plant. We use about 4 pounds of Osmocote per cubic yard in the medium.

BRUCE USREY: At our nursery we don't use any nitrogen in the rooting media. We don't want the plants to grow until they are rooted. A lot of times we root something but we may want to keep it for a couple of years in a flat, at least a year until we need it.

VOICE: I just want to tie this information together. First of all, in the greenhouse, working with sawdust in varying amounts but with the same amount of other nutrients, including Osmocote, we found that we had high salt level always, with higher amounts of peat. Mixes with very low peat, largely sawdust, we had a lower salt content all the time. With the same water practices, the same plants, and everything, we got different salt levels in the peat and peat-sawdust mixes, depending on the amount of peat. I think this might clear up some discrepancies in the description of the results which have been discussed here.

BRUCE USREY: This is directed to Bruce Briggs and Bill Curtis. It is a question about *Acer palmatum* cultivars. Are the cutting-grown ones more susceptible to root rot in the Pacific Northwest than comparable grafted cultivars?

BILL CURTIS: We have had no problem with damping-off in the field. We couldn't see any difference.

BRUCE BRIGGS: A good nursery shouldn't have root-rot. But if you do have root-rot — then that is a big problem. We have not seen any difference between cutting-grown and grafted maples in this respect. Here again, maples are not bothered too much by root-rot problems. But don't water your maples too much; once you get them growing they will take a tremendous amount of water. It is when you first transplant them that you may have conditions causing infection. That is the critical time to keep the water down. In our fields, we never have root rot problems with maples. Our only problem with maples is verticillium wilt — the type which affects the top. It is not, in any way, connected with the root disease. One of our major problems in rooting maples is verticillium wilt.

BRUCE USREY: The cultivar I had in mind was 'Dissectum.' Once it is put in the homeowner's yard the trouble can start.

BRUCE BRIGGS: On 'Dissectum,' we have propagated it both ways, but we lost more grafts than rooted cuttings. You have to watch that first year for winter damage in the container. Apparently they seem to be tender until all the roots mature. Maybe up to two years.

VOICE: We are growing several cultivars of Japanese maples in the field which were rooted from May-stuck cuttings. Once planted in the field we can see no difference in the growth against those which were grafted. We feel that on their own roots they are just as good as anything produced by grafting. I think, too, that climatic conditions have a direct bearing on the results achieved with *A. palmatum*.

RAY BURDEN: We have grown large numbers of Japanese maple. The first year we put them in the field we lost about 2,000 in very well drained soil. We found that a lot of this agricultural land has been used to grow berries. Verticillium wilt is soil borne; it is in the soil. It does come through the roots and attacks up through to the top. Japanese maple does best in a neutral to slightly alkaline soil condition. Pete Vanderbaum, at Portland Camellia Nursery, used to grow thousands of maples and he would always put lime in the containers. We do the same thing with specimen Japanese maples in big bosses. Any specimen maples — if we plant them in heavy soil conditions where the pH is low — we place the plant on a mound of sterilized or fumigated soil. We use methyl bromide in a regular potting or planting mix with lime added and we never lose any of the Japanese maples. But if we plant them in heavy wet soil with a low pH, kiss them goodbye.

BRUCE USREY: The next question I have here — when is the

best time to cut magnolia 'St. Mary' and what is the best propagating technique?

BILL CURTIS: I have grown *Magnolia grandiflora* 'St. Mary' for a number of years. We always take cuttings around the first of November. We have used a rule of thumb that when the tip, the growing tip, hardens — that is the time to take them. If you put them in when the wood is too soft, many times you will lose the tip; you will get a plant with a "dog-leg". If you take cuttings when the shoot matures, you don't generally lose the tip. Now, a lot of people say if you use heel cuttings that is old-fashioned; but I found that *Magnolia grandiflora* cuttings, with a heel, root well if you take the cuttings off 2-year old plants in the field. You use these for cuttings 4 inches in length, up to about 6 or 8 inches. The plants with a heavy pith, to me anyhow, always root better when you use a heel. A plant with a stem like *Magnolia grandiflora* has more pith than wood, so that is one reason, I think, that we have better success with the heel cuttings on this plant. Another thing; we put the cuttings in deep flats and use straight sand, or sand and perlite. We leave them in the medium until we see the roots coming through the bottom of the flat. It takes about 120 days. If you can't get them out without injuring the roots tear the flat apart and throw it away because you must not injure the roots. The plants are set back and won't start growth quite as well. If they have a large root system we put some of them in 2 gallon cans from a 4" flat. We pot them all by hand into gallons and two-gallons, normally 5 or 6 hundred a year.

One thing about *Magnolia grandiflora*; they like a stiff bottom heat. We have used as high as 80°F temperature on *Magnolia grandiflora*. But when you use that much heat, you have to pour the water on them; we saturate them every day. With stiff bottom heat you won't have any problems with rooting. We make about a 2-inch wound on one side only. We found that about a 6 or 8 inch cutting is the most desirable because you can get more in a flat, but we have a lot of cuttings a foot long. If you want to come by the nursery we have 5 or 6 hundred in gallon cans now. You can see what the growth is this year.

BRUCE USREY: Do you have a recommendation on the hormone?

BILL CURTIS: We use Hormodin No. 3. We never cut the leaves. We take some leaves off the cutting and leave about 5 or 6; but we never cut the leaves back.

BRUCE USREY: Do magnolias do best in an acid or an alkaline environment?

VOICE: Well, we know that most magnolias do grow very well at a pH of around 6.5. I think if you got much lower than 6.0

you might be in trouble. But I know they grow very well at 6.5 to neutral to slightly alkaline — up to 7.0 and 7.5. Anywhere in that range. I don't feel that they are fussy plants. We grow 8 to 10 thousand a year.

BRUCE USREY: Has anyone evaluated the effect of Ban-Rot in comparison with Benlate as a fungicide treatment on cuttings at time of hormone treatment?

VOICE: Ban-Rot and Benlate are not inter-substitutable. Benlate itself covers one range of pathogens — *Rhizoctonia*, *Fusarium*, and *Verticillium*. Terrazole and Truban are for *Phytophthora* and *Pythium* problems. The advantage of Ban-Rot is that it combines Terrazole with a chemical that gets *Rhizoctonia*. You cannot precisely compare the two.

VOICE: Benlate is completely ineffective for the geranium diseases, as far as I am concerned. Ban-Rot gives you complete control of *Pythium* and all of the other usual disorders associated with rooting geraniums.

VOICE: I have tried Benlate on a few things; it doesn't seem to be very effective. I use Captan on ferns and it doesn't seem to disrupt the fern. I don't find Benlate very effective at all.

BRUCE USREY: Today someone mentioned that Benlate was not good for azaleas, that it inhibited rooting. Please elaborate; did you mean for hardy evergreen, deciduous, or forcing azaleas? Also was it used as a dip, soak, or spray? Does anyone have an answer?

LARRY CARVILLE: We are using Benlate as an additive to a dry-rooting compound. We mix it with Hormex No. 8. We dip our deciduous Exbury azaleas in this. We find that the use of Benlate in the rooting compound does delay somewhat the formation of roots. I don't mean inhibit in the sense that they do not root but it does delay them. It is only a quick-dip dry formulation; 5% Benlate added to Hormex No. 8 rooting compound.

BRUCE USREY: Has anybody tried open-bench grafting of *Juniperus* 'Ames' or 'Wintergreen'? We use a cover tent and have a lot of problems with disease on these cultivars; we have been trying to get more air circulation, more light to them. They seem to dry out before the graft takes. I wonder if anyone has used open bench grafting of junipers in their greenhouse?

RAY BURDEN: We personally don't graft them, but West Oregon Nursery grafts a great many conifers. The grafting is open bench. They graft low and put a layer of sawdust and peat over the union; they are grafted in open air with bottom heat under and seem to have very good success. We graft the scion and unrooted stock, then stick them in the bench. The understock roots and the graft takes at the same time — the way we do it.

BRUCE USREY: We open the rooting frame quite a bit but we

still have a lot of disease problems. The next question is to Bob Boddy. Have you had any success with spring cuttings of Mahonias? We want to accelerate the growth of rooted cuttings by getting them rooted early in the growing season and have had promising results with trial blocks taken just as the first part of growth is finishing its April and May cycle. So the question is — have you had any success with spring cuttings of Mahonia?

BOB BODDY: No.

BRUCE USREY: This is to Larry Carville and Bob Ticknor. Have you had any experience with hardwood cuttings of *Viburnum carlesii*, *macrocephalum*, or *carlcephalum*?

LARRY CARVILLE: We handle all our viburnum cuttings as softwood cuttings, taken in June, and stuck outside in the sand under mist beds. We pull them in late fall, when they have ripened up and rooted well and store them dry, in polyethylene bags in the cooler at 35°F. We plant them out in the field the following spring. We have not made hardwood cuttings of those viburnum species.

RALPH SHUGERT: Appending Larry's comments, concerning three of the species he mentioned; we take them very soft, use a very light hormone treatment and intermittent mist. Now *V. carlcephalum* in Ohio does not over-winter well. We treat it the same as we do the *Syringa* cultivars on their own roots. We leave them in the mist beds with, of course, the water off. They winter there under poly, but with no heat. Then they are lifted the following spring. The same comment on *V. carcephalum* as Bill Curtis said regarding magnolias. If we damage the root then we are in lots of trouble. We then take bare root liners but we do not run them through a pot but go out in the field through a planting machine. The French lilacs are carried a second year in the beds, and then you have got a nice 9-12 mail order grade — two years in the mist bed.

BRUCE USREY: Next question has to do with germinating modin No. 3?

VOICE: It is 8000 ppm or 0.8% indolebutyric acid (IBA).

BRUCE USREY: Next question has to do with germinating *Mahonia aquifolium* seed. We pick a lot of it in southern California when it is half green and half blue or purple. Then we soak it and clean it. I think we have picked a hundred pounds this year but if we get a couple of thousand plants we will be doing good. So I am looking for someone who has had a little better success at it than I have.

BRUCE BRIGGS: Apparently you have a problem in the southern states that we don't have here, but you are not the only one in the California area that has this problem. I know some

members of this group have asked me about it. We find no problem at all. As soon as the seed is ripe, we pick it and clean it and immediately sow it in boxes. We sow it right away. Along about February or March, when the weather turns warm it germinates — no problem at all. So it must be in the southern states you are not getting sufficient cold stratification or your seeds have some other problem. I am not sure what it is, but apparently you have a problem in your area that is not typical here in the north.

VOICE: What temperature do you use for Mahonia seed stratification?

BRUCE BRIGGS: We take our outdoor winter temperature. We do clean the seed, take off the pulp, and immediately store it in shallow boxes. We put them outside — freezing is OK — through the winter, and by February the seedlings really come up. There is no problem at all under our conditions.

**Friday Morning, September 5, 1975**

**DIRECT CANNING OF ROOTED CUTTINGS  
INTO ONE GALLON CONTAINERS**

BARRY A. EISENBERG

*California Polytechnic State University  
San Luis Obispo, California 93401*

**Abstract.** *Buxus japonica*. *Raphiolepis indica* 'Rosea'. *Trachelospermum jasminoides*. *Viburnum tinus* and *Weigela florida* were used to determine if rooted cuttings could be directly potted into one-gallon containers. Direct potting of rooted cuttings offers a grower a production operation that could reduce labor and materials costs. Direct potting of rooted cuttings was successful with four of the five species used in this study and demonstrated that a grower may be able to achieve an equal or better quality one-gallon container plant by direct potting. The condition of the root system at time of transplanting, the soil mix and conditions used to reduce desiccation are the primary concerns a grower will need to evaluate for his specific growing conditions. The type of root system, either fibrous, stiffly branched or wirey, appears to be a root characteristic that lends itself to determining if a plant can be directly potted.

Much of the work involving direct canning of rooted cuttings has been done with deciduous plants. Worth (11) reported that direct canning of *Spiraea* and *Syringa* cuttings saves the labor equivalent to 8 or 10 persons.

Hill (5) observed that some *Salix*, *Prunus*, and *Pittosporum* species initiated growth earlier when canned directly in one-gallon containers than when placed in ground beds. In addition, he noted that direct canned cuttings had twice the growth of ground bed cuttings, which he attributed to less root disturbance during the growing period.