

QUESTION BOX

The Question Box Session was convened at 9:00 a.m. with Joerg Leiss and Bruce Briggs serving as moderators.

MODERATOR LEISS: We have yellow nutsedge and are not in a position to move our nursery. I understand that Roundup will only burn off the tops and set the nuts into dormancy for one or more seasons. I've also read that Besagran applied when new growth is 4 to 6 in. tall will kill both top growth and nutlets. Can anyone comment on these herbicides?

PHILIP CARPENTER: Roundup is not an effective control. Besagran is an effective control but it has no woody ornamental clearances on the label. I cannot recommend it on that basis.

MODERATOR LEISS: Question for Philip Carpenter on the fumigation of liner beds. The labels on most brands of methyl bromide list application rates between 1 and 4 lb/100 sq. ft. In light sandy soils at what rate can we expect control of wild chrysanthemum and yellow nutsedge. Also at the higher rates, do we chance eliminating beneficial soil fungi and organisms?

PHILIP CARPENTER: You should have a real concern about what you will be doing to the soil mycorrhizal fungi. Growers should always check the growth of their seedlings after fumigation. Soil fumigation will not be effective for nutsedge control because nutlets can be found down 3 and 4 ft in the soil. Soil fumigation is generally only effective from 6 to 8 in. maximum. With wild chrysanthemum, fumigation will be fairly effective because the rhizomes are found in the top few inches of the soil.

HENRY CLARK: For 2 years we fumigated our soil and we had to come back into that soil and inoculate with nonfumigated soil.

MODERATOR LEISS: Can someone comment on the use and effectiveness of the fumigant, Basamid?

PHILIP CARPENTER: The soil needs to be moist and also warm.

JOERG LEISS: Ralph Shugert recommends 300 lb/acre and temperature of 50°F. For seed beds, September is best and with liners—spring (April), is best. He also recommended following the instructions which are very detailed. (Editor's note: Basamid is not registered for use in the U.S.)

MODERATOR LEISS: Are there fungal problems associated with the use of thermal blankets? What preventative treatments are being used?

DICK BIR: Yes, there are fungal problems. In our area container growers use whatever is labeled for *Botrytis* and they feel comfortable using it. In our area generally Benlate is used. Just spray the containers down, let them dry and cover.

CLAYTON FULLER: We have few fungal problems but are on a Ziram spray program. If your plants are clean when they go under

you do not have much of a problem. You can run into a lot of problems if you don't wait till the leaves have dropped before tipping and covering.

MODERATOR LEISS: A question for Peter Vermeulen. Your paper on container configuration showed interesting data on temperatures in round vs. hexagonal pots but did not tell us whether there were differences in cold damage. Did the plants in hexagonal containers survive the cold better? If so, please give some typical numbers. Also, since the temperatures seemed to be so close in the two situations, do you feel that some factor other than temperature might account for survival, instead?

PETER VERMEULEN: We did not notice any difference in root survival. The research failed to show the temperature differential that we had originally observed when it was repeated.

MODERATOR BRIGGS: Question for Michael Dodge. Please list *Bruckenthalia*, *Erica carnea*, and *Calluna vulgaris* in terms of cold hardiness from hardiest to least hardy.

MICHAEL DODGE: *Phyllodoce* spp., *Erica carnea*, *E. tetralix*, *Calluna vulgaris*, *E. × darleyensis*, *E. × williamsii*, *E. cinerea*, *Bruckenthalia*, *E. ciliaris*, *Daboecia cantabrica*.

MODERATOR BRIGGS: What cover crops are best to renew soil after B&B.

TOM VANICEK: We use buckwheat and harrow it in 2 or 3 times in the summer. Sorghum is also a possibility. We over-winter with rye or, if we have young plants, oats are planted.

MICHAEL DODGE: For the summer we use Sudan grass. It is good for shading out summer perennial weeds.

PETER VERMEULEN: Be sure to use summer oats for fall planting so they will die during the winter.

BRUCE BRIGGS: In the west we have found that if you use a lot of herbicides that oats may be difficult to establish.

MODERATOR BRIGGS: How do you prune *Kalmia* to get them more compact?

JIM CROSS: One good time to prune is at the end of the winter if they are container-grown. In the summer after the buds have set is another good time.

WAYNE MEZITT: We prune after they finish flowering. It is always best to prune when young to induce branching close to the ground.

MODERATOR BRIGGS: How do you prevent damage on azaleas from Surflan?

BRUCE BRIGGS: We had reduced growth problems with it on some azaleas. It appears to depend on the cultivar.

MODERATOR BRIGGS: Does anyone have a comment on the compacting of coarse sand around cuttings by hammering rather than just watering the cuttings into the medium.

JIM CROSS: We just water the cuttings into the medium. With

sharp sand it may be O.K. to hammer the cuttings into the medium, but with round sand it could be a problem.

MODERATOR BRIGGS: Does anybody use an atomizing fogger and how well does it work?

JIM CROSS: For a propagator with only one propagating house it presents a problem because flexibility is reduced. However, the little sonic types that cost under \$100 could be tried if you section off part of a greenhouse.

CAMERON SMITH: Harold Pellett is using ultrasonic humidifiers in tents with good results.

MODERATOR BRIGGS: Can heather be propagated by micropropagation.

BRUCE BRIGGS: Yes, we have done them. However, they are very easy to root, so why use micropropagation.

MODERATOR BRIGGS: Do *Picea* and *Pinus* grafts heal better when covered with wax or buried in moist peat?

JIM WELLS: I think waxing is the best method.

BILL VANDERKRUK: We do not wax but bury the unions in a mixture of peat and perlite.

GEORGE OKI: I agree. The cost to wax far exceeds the cost of just plunging in peat and perlite.

MODERATOR BRIGGS: Question for Jim Wells. What is the potting compost you use for your bulbs?

JIM WELLS: Make sure it is well drained. I use a light sandy soil that I sterilize with Vapam and mix 7 parts of it with 4 parts of grit, and one part of Promix. This year I changed because last year I obtained excess top growth. Now I mix equal parts of grit and sandy soil. The bulbs do not grow well in a very rich mixture. If you find that they are not growing as vigorously as you would like give them a little 20:20:20 after they flower.

MODERATOR LEISS: Question for Jim Wells? Are the majority of your bulbs hardy enough for outdoor culture in USDA Zone 5?

JIM WELLS: They are fundamentally hardy except for a few types. However, the very early blooming habit will force you to grow indoors.

MODERATOR LEISS: Question for Jim Wells? How do you germinate your narcissus seeds?

JIM WELLS: Just soak them in water and stand back.

MODERATOR LEISS: Question for Mike Dirr. Has there been any work done with K-IBA on *Juniperus procumbens* 'Nana'?

MIKE DIRR: Yes, it works very well. You can buy K-IBA from Research Organics Inc., Cleveland, Ohio.

MODERATOR LEISS: Question for Mike Dirr. Is there any significant damage done by ethanol to the cuttings of any species that would dictate a switch to a water based (K-salt) solution for that species? What species are affected?

MIKE DIRR: It is very dependent on species and time of year. I don't think anyone has assembled a list of those that are. I know that miniature roses are among the most sensitive.

MODERATOR BRIGGS: Question for Jeremy Wells. Did you change the size, grade, and age of the plant material you are selling? Have you changed the type of retail outlet you are selling to or through?

JIM WELLS: Yes to both questions. He analyzed the market and found that there was a market not being served; and that is what has turned his business around.

MODERATOR BRIGGS: What is the effect of fertilizers on mycorrhizae?

LARRY KUHNS: Nitrogen, is not going to have much effect on the infection, but phosphorus will. High levels of fertilizer inhibit infection.

MODERATOR BRIGGS: Would fall incorporation of mycorrhizal inoculum into seed beds be effective for spring germinating seeds?

LARRY KUHNS: Infection is best in the spring when growth is starting.

MODERATOR BRIGGS: How does one root Douglas fir cuttings?

BRUCE BRIGGS: It is being rooted in the west. There are two or three things to remember: 1) take cuttings after they have gone through a cold period (January), 2) use a well drained mix, and 3) don't let them get too warm.

MODERATOR BRIGGS: *Prunus* × *cistena* and *P. triloba* 'Multiplex' cuttings are reported best taken early. How early is early and should the tip be left in?

BRUCE BRIGGS: Take the growing tip when soft and include an actively growing tip.

MODERATOR BRIGGS: What causes a cutting to callus heavily, but not root?

BRUCE BRIGGS: We have found several causes. The hormones are usually too strong or the rooting environment is too hot and that stresses the cuttings.

MIKE DIRR: Too low a hormone can also cause callus with a plant such as *Photinia*. I have heard from some southern growers that too much water can cause excess callus.

BRUCE BRIGGS: With *Photinia*, excess moisture improves rooting.

MODERATOR BRIGGS: Do fungicides applied before or after the cutting is stuck adversely affect rooting?

BRUCE BRIGGS: I know that Terrachlor has been bad.

JIM WELLS: Benlate in the rooting powder will eliminate callus formation but allow rooting to occur.

MODERATOR BRIGGS: Why do cuttings decay? What are the

most common causes?

PETER VERMEULEN: The water-oxygen relationship is an important factor. Therefore, a well drained medium is important. A sterile medium is another important factor.

BRUCE BRIGGS: Too soft cuttings is another cause. Also, it may be important to let the cuttings dry overnight in the mist bench.

MODERATOR LEISS: What is the best way to asexually propagate *Platanus* cultivars during December and January?

JOERG LEISS: We have always made them from hardwood cuttings. If you have a greenhouse, they will be callused in 8 to 10 days.

MODERATOR LEISS: Question for John McGuire? Do juniper cuttings in April require bottom heat?

JOHN MCGUIRE: We run the temperature around 65 to 69°F, in a deep coarse sand bed with bottom heat outside.

MODERATOR LEISS: Burkwood and compact European viburnums often decay from the bottom up to the medium surface. Compact European cranberry viburnum will then often make roots in the air. Why and what can be done?

JOERG LEISS: It could be related to excess water in the medium or too high a hormone level.

MODERATOR LEISS: What is the name of the bamboo that becomes variegated in winter? How cold hardy is it?

DICK LIGHTY: It is a type of Japanese running bamboo, and it is hardy to New York City.

MODERATOR LEISS: What is the correct time of the year and method to divide bamboos?

DICK LIGHTY: In the spring before they begin growth is very effective.

MODERATOR LEISS: Question for Mark Richey. Did you change your medium from sand to perlite and, if so, why?

MARK RICHEY: It was to improve our air to water ratio. All the sand pits stopped grading their sand and it contained a higher amount of fine material.

MODERATOR LEISS: Can anyone give details on the rooting of hemlock cuttings?

HARRISON FLINT: Some time in the spring, April, proved best in a study we did in Vermont. Clonal differences are probably present.

DICK BIR: I disagree, Harrison. In our study, January was the best with April and May the worst. It picks up again in July and August. Hormodin No. 3 was as good as anything.

BRUCE BRIGGS: I think that one of you has colder temperatures and your wood is in different stages. Be sure and shade and don't let the sun burn the foliage or they will not root.