

39. Wollum, A.G. II, C.T. Youngberg and F.W. Chichester. 1968. Relation of previous timber stand age to nodulation of *Ceanothus velutinus*. *For Sci.* 14:114-118.

QUESTION BOX

The question box session was convened at 4:10 pm with Ralph Shugert and Bruce Briggs serving as moderators.

MODERATOR SHUGERT: Question for Gary Koller. Do you have blight problems with *Aesculus parviflora*? Have you propagated this plant?

GARY KOLLER: We have had no major problem with it. I have seen some leaf scorch in a few areas.

MICHAEL DIRR: It will propagate from root pieces, suckers and seeds.

JOE McDANIEL: *A. parviflora* is susceptible to leaf hopper damage and scorch will set in after an infestation.

RALPH SHUGERT: We can not grow it in Ohio. I think it has a heat problem.

MODERATOR SHUGERT: I have a very hardy *Tilia cordata* from a northern source. Where can I obtain rootstock of comparable hardiness?

DAVE BAKKER: From the federal experimental farm at Mordon, Manatoba.

MODERATOR SHUGERT: I have several superior selections of *Celtis occidentalis*. How can I profitably propagate them?

JOE McDANIEL: I have had success with chip budding in the summer.

MODERATOR BRIGGS: Is anyone using Roundup on nursery shade trees? If so, how often and will it harm established trees?

MIKE LEAN: We have used it at the rate of 1½ oz/gal and have had no problem on limbed-up stock of *Malus*, *Pyrus*, *Crataegus*, *Fraxinus* and *Acer rubrum*. Keep the pressure low with coarse drops for best results.

BEN DAVIS: We are using the same rate but are not taking any chances. We use a shield made from a piece of stove pipe to protect the plants.

MICHAEL SCOTT: It can be used to control suckers on crabapples without any problems.

FRANK GOUIN: Watch out with Roundup; there is a delayed reaction we have noticed on brush control. Early applications on suckers did not show up until the following year. With conifers, application after August gave us no injury.

MODERATOR BRIGGS: Does Surflan have a carryover into the next year? Does it have any effect on bud or graft take?

TOM PINNEY: We have had devastating results with its use on conifer seedling beds. It does not show up immediately and the herbicide appears to affect the root system. The problem is also related to Treflan. We are now looking at \$100,000 in damage.

PETER VERMEULEN: We have had some problems with the combination Surflan and Ronstar on containerized azaleas. We are not sure which is causing the problem.

BRUCE BRIGGS: In the west when young peach seedlings were treated they did not bud as well and were brittle.

MODERATOR SHUGERT: Is anyone propagating *Nyssa sylvatica*? If so, how is it done?

ELWIN ORTON: It propagates readily from seed. Give it 80 to 90 days at 4.5°C (40°F).

BRUCE MacDONALD: We have propagated it from cuttings. The plants were grown under plastic and growth started in May. Three node cuttings taken in June and treated with 0.8% IBA in talc rooted. The cuttings should be overwintered before potting.

MODERATOR SHUGERT: In mulching seedbeds in the northern states, hay or straw is often used. When should that mulch be removed and what steps follow after removing the mulch?

BERNARD FOURRIER: We watch the seeds for germination and either remove some mulch or loosen it up. We put shade back on if frost is forecast.

RALPH SHUGERT: In Nebraska we used a light mulch and just allowed the seeds to grow through it. The big danger with removing mulch is frost damage. I would rather smother a few seedlings than lose a whole crop.

HENRY KOCH: We cover all our seeds with composted sewage sludge. The sludge is composted with sawdust. The mulching is then carried out with a combination of shredded oak leaves and peat moss. This is loose enough for any seedling to grow through.

MODERATOR SHUGERT: Has anyone had any experience with pregerminating seeds and fluid drilling them?

DALE MARONEK: The University of Florida at Gainesville has conducted research on this subject, primarily with vegetable seeds.

MODERATOR SHUGERT: Will Bruce MacDonald please elaborate on jacketed cold storage versus direct cold storage?

BRUCE MacDONALD: Jacketed cold storage is really a box within a box. A stream of cold air is forced through the space between the two boxes. No cold air is forced into the storage box. Humidity is higher and the temperature is easier to control. This type of storage is very good with bareroot material. The only problem is jacketed cold storage units are much more costly to build; however, the operating costs are lower.

MODERATOR SHUGERT: Bruce MacDonald, you mentioned *Rosa laxa* as a rose rootstock, doesn't it sucker objectionally?

BRUCE MacDONALD: The advantages of *R. laxa* are threefold. It gives a uniform stand after seed germination, a good hypocotyl to bud on, and it lifts easily. It also does not sucker very much. It is not useful in areas with low soil pH.

MODERATOR SHUGERT: When dipping cuttings in acetone, is it diluted and how long are the cuttings held in the acetone?

BRUCE MacDONALD: We use it directly from the bottle. With soft cuttings it might be advisable to cut it in half. We use a quick-dip.

MODERATOR SHUGERT: What rates of Atrinal have been used most successfully on *Rhododendron* and *Ilex* for developing more compact plants?

BRUCE MacDONALD: For rhododendrons and azaleas 2%; hollies, 1%; and camellias, 0.1%. We have also tried it on fast growing liners like *Spiraea* and found 1% to be satisfactory. Higher levels cause damage.

MODERATOR BRIGGS: Is there any evidence that lighting to extend daylength during propagation is detrimental to rooting or subsequent growth?

SID WAXMAN: I have no evidence to show that it is detrimental.

LEN STOLTZ: You have to have extended lighting if you are rooting plants like chrysanthemum that are sensitive to daylength.

JIM WELLS: We root deciduous azaleas which are sensitive to daylength. Applying supplemental light to the cuttings during rooting does not appear to have any beneficial effects after rooting; however, we do add supplemental light to induce shoot growth.

MODERATOR BRIGGS: Should Japanese maples have extended light during and after rooting to induce growth?

JIM WELLS: We have found them to be sensitive to light after rooting. If you can induce them to bud break after rooting

their chances of survival are greater. The removal of leaves stimulates bud break.

BRUCE BRIGGS: Be careful on leaf removal. The proper timing is important.

MODERATOR BRIGGS: Has anyone used Atrinal on Exbury azaleas and what were the results?

JIM WELLS: We have tried it. It did cause them to break, however, it did not do a good job. We still like to mechanically prune.

MODERATOR BRIGGS: With regard to IBA, how long can powder preparations be stored, how should they be stored, and is there a simple test to check if effective?

GERALD KLINGAMAN: Paul Smeal found that powders 10 years old showed no difference.

JIM WELLS: I have some powders and liquids that I brought from England 32 years ago that are still effective.

BRENT McCOWN: Powders should be stored dry. A simple test would be to root young bean cuttings.

MODERATOR BRIGGS: Has anyone found an effective pre-treatment of cuttings to prevent transmission of crown gall to *Euonymus*?

WAYNE LOVELACE: We are using an antagonist called Norback-84 which I understand makes the plants immune for life. We have used it on our *Euonymus* cuttings and we have crown gall on the checks but none on the treated.

MODERATOR BRIGGS: How do you control algae in mist propagating beds?

BRUCE MacDONALD: Currently work in England on algae control is being conducted by Margaret Scott, Efford Experimental Horticulture Station, Lymington, Hampshire. Algofen has been tried. In the past dodine acetate has been used in mist nozzles. Possibly a weak solution of Gloquot or Sandquat could be tried. Caution should be used however because both chemicals are used on capillary beds to prevent rooting through.

MODERATOR BRIGGS: Is anyone working with growth retardants on perennials?

BILL CUNNINGHAM: Alar is used on chrysanthemum.

MODERATOR BRIGGS: I would like to know if anyone knows of an effective safe fumigant to use for sterilization of raised beds in the greenhouse?

DAVE BAKKER: Baycoven is one that I have been using.

BRUCE BRIGGS: Steam is also possible.

MODERATOR BRIGGS: How can I propagate *Mahonia* from cuttings?

CARL ORNDORFF: Stem cuttings taken about the time of the first heavy frost will root in about 5 weeks. If you let them go later they come to a stall (rooting in 3 to 4 months) while earlier cuttings show blackening of the base.

BRUCE BRIGGS: Leaf-bud cuttings also root.

BRUCE MacDONALD: We take terminal cuttings, remove the terminal flower buds, and root them directly in a 5-inch pot. Leaf-bud cuttings can also be rooted. We reduce the leaves to 2 to 3 leaflets and plant in flats without hormone. No hormone is used because we have found that it delays bud break the following year.

MODERATOR SHUGERT: Is anybody propagating mugo pine by cuttings?

VOICE: I followed up on the leaching work of Dr. Waxman and leached cuttings from seedlings with good results.

ARNOLD KLEHM: I have taken cuttings from new growth in June before the needles mature. The lower needles are stripped off and then placed in sand with IBA treatments. After rooting, the cuttings are left in the flats until the following spring.

BRUCE BRIGGS: Increased rooting may result from leaving the lower leaves on conifers.

FRANK GOUIN: There was a paper published recently in HortScience on this very subject.

MODERATOR SHUGERT: In the spring of 1979 the USDA released *Microbiota decussata*. Will someone comment on its merits and faults? Does it lend itself well to vegetative propagation?

HENRY KOCK: It roots with ease from cuttings.

DAVE BAKKER: It can be rooted in the winter like juniper. The color is lush green in summer, however, during the winter and early spring it has an off color.

MODERATOR SHUGERT: Can *Amelanchier laevis* be rooted?

CATHY FREELAND: Softwood cuttings taken in midsummer root well when placed under mist and treated with 1% auxin.

MODERATOR SHUGERT: Is anyone propagating *Populus tremuloides* or *P. tremula* 'Erecta' by cuttings?

DAVE BAKKER: They are being grafted on Lombardy poplar which helps the scion root.