

QUESTION BOX

MODERATED BY RALPH SHUGERT AND BRUCE BRIGGS

RALPH SHUGERT: Question for Dick Bir or Peter del Tredici. What is aroma therapy?

DICK BIR: Aromas can affect you in different ways. They can make you more tranquil or excited or any of that sort of thing, and that is what it is all about. You buy little capsules or salts put them in hot water or incense burners and it is suppose to change your whole way of looking at the world. That is all I know.

RALPH SHUGERT: Question for Bill Barnes. How do you heat treat manzate? How do you treat fine seed with manzate? How much manzate per flat, per gallon, rates? How long is manzate good for?

BILL BARNES: You do not heat treat manzate. I would never heat treat manzate. I do not recall mentioning the heat treatment of manzate but did mention that you should avoid heat with the seedlings because damping-off fungus could move in and they do not like heat treatment — if you get above 90F they will stop growing. You want to use manzate because it has the heavy metallic ion manganese (not magnesium). This ion prevents the germination of spores — ferns, mosses, liverworts, and fungi—with broad spectrum capability. Compounds, such as benlate, are more specific to fungal spores. Heavy metal pesticides containing zinc, copper, and manganese have a much broader spectrum. Teaspoon per gallon and it is drenched into the soil before liverwort gets started.

RALPH SHUGERT: Question for Ralph Shugert. You stated that *Taxus xmedia* 'Hicksii' had a high rate of Taxol. What other *Taxus* cultivars are rated average to high?

RALPH SHUGERT: When we formed the alliance (*Taxus* growers), Ken Cockran who is the curator for the Secrest Arboretum and in charge of the Chadwick's *Taxus* collection collected samples from various cultivars of taxus and tested them. Bruce Vanicek also had some testing done from a different lab. Bruce, would you comment on your results?

BRUCE VANICEK: *Taxus xmedia* 'Dark Green Spreader', 'Hicksii', 'Nigra', and 'Taunton' are high in Taxol content. There appears to be a relationship between dark green color and higher Taxol content. All the faster growing types, such as *T. xmedia* 'Densiformis' and 'Brownii', are very low in Taxol. It takes a lot of taxus plant material to get any Taxol. One reason the drug companies like 'Hicksii' is because it is fairly uniform throughout the industry. Many of the other cultivars are mixed in the trade and misnamed.

RALPH SHUGERT: I would just like to caution everyone in the room that Taxol testing is much like soil testing. You can often get different results from different labs.

BRIAN MAYNARD: I think that production methods need to be looked at as they relate to Taxol production. In addition, stress (temperature and drought) needs to be examined as a stimulator of Taxol production.

RALPH SHUGERT: Question for Tom Kimmel. What is the hardiness (zone) of the Polish clematis cultivars and which are the hardiest? Does the U.S.D.A. require plants to be soil free? Pesticide dipped? Quarantined?

TOM KIMMEL: I am not sure but assume that they are hardy to Minneapolis because I sell them that far north. Poland has a climate similar to our midwest climate so on that basis I assume they are as hardy. Yes they are soil free. They are inspected in New York City which results in a 2- to 3-day delay. We do not give them any fungicide dip. There is no quarantine on the clematis. The name of the peach-colored cultivar is *Clematis montana* 'Freda'.

BRUCE BRIGGS: What herbicide works best for field-grown boxwood?

DICK BIR: What is used and is labeled for it is Casoron put on in the winter. Roundup Pro to knock it down and Surflan to keep it down. We are not seeing yellowing as long as we do not have nutrient deficiency problems.

RALPH SHUGERT: In containers we are using Rout at the label rate.

JOHN MARSHALL: We use Casoron successfully for several years on Japanese hollies, not boxwood, until one year when we got 4 inches of rain in the middle of the summer and cooked the roots. Be careful if you have large amounts of rain. We have a silty-loam soil.

VOICE: The best thing I have ever found is Goal and Surflan.

ED LOSELY: We have a problem with the older leaves of 'Green Velvet' showing a golden margin. Does anyone else have this problem and is it related to an herbicide?

GIACOMO MULÉ: We had that problem and sprayed it with micronutrients and solved the problem on that particular cultivar and believe it is a nutritional problem.

TED KIEFER: I had the gold margins from simazine applied in the spring. With simazine the leaves were variegated.

VOICE: From our experience it could be a boron deficiency, salt problem, or herbicide toxicity.

KEN ROE: We grow a lot of boxwood without herbicide and get the problem and I am led to believe that it is a micronutrient problem.

BRUCE BRIGGS: I have been unsuccessful in finding a herbicide to use on *Phlox paniculata* that will not cause phytotoxicity. Can anyone help?

BILL BARNES: I have used water soluble Treflan and pendimethalin combined on perennials after they have broken bud and grown out 3 to 4 inches but not before in the spring. Surflan is big trouble and should not be used.

BRUCE BRIGGS: What can we use to control liverwort? Where in the U.S. can we buy Mogeton a chemical used to control liverworts from Japan?

BRUCE BRIGGS: We presented a paper at the Southern Region meeting this year from the results of a large study. Cinnamic aldehyde gave good results.

RALPH SHUGERT: Just straight vinegar made from apples with no additives I saw on a tour.

BILL BARNES: Ronstar G, although it is not on the product label, will control liverworts.

MARK SUTCLIFFE: I was speaking to Charlotte Smith and she mentioned that they use buckwheat hulls 1/4 inch to 1/2 inch for control of liverworts.

BRUCE BRIGGS: If you have something in your area that can be used as a mulch it will give you control if the surface is allowed to dry out.

RALPH SHUGERT: Will male *Ilex opaca* pollinate *I. verticillata* or *I. verticillata* × *I. serrata* female forms? Will *I. xmeserveae* males pollinate any deciduous females? If not, is it timing of flowering or compatibility of pollen?

DAVE THOMPSON: I have heard that it may pollinate *I. decidua* but not *I. verticillata*.

RALPH SHUGERT: On Elwin Orton's hybrid hollies. How are the dwarf hollies (*Ilex crenata* 'Beehive' and 'Jersey Pinnacle') doing?

DAVE THOMPSON: 'Beehive' has done well for us and is hardy as indicated. With 'Jersey Pinnacle' I have had no experience.

VOICE: As with many *I. crenata* it really depends on climatic factors. You can see winter problems after a cold winter if you have had a dry summer.

GIACOMO MULÉ: We have overwintered 'Jersey Pinnacle' in a polyhut with no heat without problems.

RALPH SHUGERT: In Michigan we have tested them from material Dr. Orton sent and found them to be slower growing and we are not going to grow them.

BRUCE BRIGGS: I don't understand why but in the west we have great color on 'Jersey Pinnacle' but poor on 'Beehive' which is the opposite of your results.

RALPH SHUGERT: Question on flowering in *Kalmia*. Has anyone thought of treatments including extra light or shading (short days) to increase flowering?

DICK JAYNES: Yes it does have an effect. A lot of people think that *Kalmia* is a deep shade plant. It barely flowers in deep shade. It flowers best along the edge of woods. They need light to flower.

BRUCE BRIGGS: Does anyone know if the form of *Cornus canadensis* found in the east is different from the west?

BILL BARNES: The one that grows in the Rocky Mountains is the same as the one that grows here. I am not sure about the Cascade Mountains. Such a wide growing range would lead to ecotypes.