

## QUESTION BOX

The Southern Region Question Box was moderated by Tom Couturier.

FRED GARRETT: We have heard recommendations of from 8 to 15 lbs lime/yd<sup>3</sup> for a 3:1 bark:sand mix. This is certainly a wide range. What crops are we growing?

BRYSON JAMES: Carl Whitcomb says pH is not important as long as we have the correct Ca and Mg levels. It is more important in the field as field soil contains aluminum that can be toxic in very acid soils. The 8 to 20-lb range is all right for all but the ericaceous plants. Two other factors that affect the rate are the quality of the lime and the quality of the water supply. We often do not identify either. The only way to know is keep records of growth and growth responses, then monitor with soil and tissue analysis.

CARL WHITCOMB: Our water contains 40 ppm Ca. During a 6-month growing season we add 110 in. water per 6-in. container. This gives an excess of 10 times the amount of Ca that would be provided if we put in 8 lb of lime. It would be necessary to add 20 ppm Mg to compensate for the amount provided in dolomite lime. Earlier tests we made showed no damage when lime was omitted simply because we failed to consider water quality. Geranium and gardenia performed best when lime was not added. A 1½:1, or 2:1, ratio of Ca:Mg is best. An imbalance usually shows up as a slight yellowing of older leaves, which then drop. This appears to be normal, making it easy to overlook this deficiency. Podocarpus and pittosporum show yellowing leaf margins with excess Ca to Mg. The Mg atom is always surrounded by water and doesn't attach to the mix as well as Ca. Adding dolomite further complicates the situation since Mg is much more soluble than Ca and the plant experiences a much different ratio than might be indicated by soil analysis. The particle size of the lime will definitely affect its solubility. The temperature in the container can dramatically change plant response to Ca and Mg imbalance.

GARY COBB: We looked at 9 species going from 0 to 10 lb/yd<sup>3</sup>. We found no difference in pH, but we did get a response to an increased rate on boxwood. I agree that the Ca:Mg ratio is much more important than pH. We had both juniper and azalea do well using a 6-lb rate. In the end other cultural factors are more important in producing quality plants.

BOB BOCK: Do we have or could we develop standards with which to compare tissue analyses?

BRYSON JAMES: About the best we can do is try to relate to good and bad plants, then compare the two test results. The range is so vast I would not attempt to write down a figure and say this is it.

JUDSON GERMANY: Is there any new development on a way to determine when to water?

GERALD SMITH: There is no way to tell a person when to water. Successful nurserymen knock out a few plants and look. Overwatering is usually a result of frequency and not total amount applied.

CHARLES PARKERSON: When it is hot, junipers seem to shut down so we can easily overwater.

GERALD SMITH: I certainly believe that I have seen over-compensating.

FRED MAY: Does the plant quit taking up water?

GERALD SMITH: It seems to slow down.

GARY COBB: We compared ½ in. of water with syringing 1 hr at mid-day using 1½ min total watering time to give a total of ¼ inch of water. Syringing gave better results.

JOHN MACHEN: Dennis, how do you root crape myrtle in gallons using hardwood cuttings?

DENNIS McCLOSKEY: We use a 90:10 bark:sand mix with 5 lb dolomite and 5 lb Micromax per cu. yd. We put three 3½ to 4-in. cuttings to the can. We do not use hormones and get 95% take. When we take the cuttings depends on the weather. Usually if we wait much past February, the wood is no longer dormant and take is poor.

JOHN MACHEN: What temperature do you think would be needed to harden the wood?

DENNIS McCLOSKEY: Probably 10 days with lows of 26° to 28°F.

STEVE HAMMOND: What is the best time to take cuttings of red-tipped photinia?

DENNIS McCLOSKEY: We are taking cuttings in late September or early October. We would like to take them in April and May but just cannot get it done. We are presently testing 5 concentrations of hormones. The formulations include Hormodin and Dip N' Grow.

JIM BERRY: We use 10,000 ppm IBA for photinia.

FRED MORRISON: What has been your experience with potting machines?

DENNIS McCLOSKEY: I think personally they are fine for greenhouse operations using a less-abrasive soil mix than most nurseries use. We had three but found they were high-maintenance items. The best we could do was 10,000/day/machine, using 10 to 12 people. We can do about 70,000 by hand. With the potting machine the total labor cost for filling, potting, and placing the plants was 4.4¢. When we do this by hand, total labor cost, as close as we can calculate, is 2.75¢.

JOHN HOPKINS: I would like to know how patented or trademarked material can be propagated and sold; that is, how are royalties paid and what are the restrictions?

JIM BERRY: We grow only one. With this particular plant, we have the right to propagate but not sell without the patent tag on each plant. We have some to market that have the tag on them. These we do not have the right to propagate without the patent holder's permission.

JOHN HOPKINS: How can we get a list of patented plants?

TOM COUTURIER: The American Association of Nurserymen, Washington, D.C., or the U.S. National Arboretum, Washington, D.C. should have this.

DICK HENLEY: A trademark has unlimited life but a patent expires in 17 years.

KERMIT MORRIS: We have had no problems with the legalities of using patented material. However, royalties can be high.

BOB BOCK: We have had trouble with some of our 2- and 3-gal azaleas. The stems get very brittle just below the surface and break off.

JIM BERRY: We have looked at cross-sections and believe that a pathogen is involved. The plant was probably inoculated early in the production cycle.

PETER VAN DER GEISSEN: *Cylindrocladium* could have been present in the stock plant.

DAVE SMITH: We are sticking shallow. The plants with this problem seem to have roots only at the top.

GARY TAYLOR: We have had the same problem but did not notice that roots were affected.

CHARLES PARKERSON: We stick in April, using several cuttings per container. We usually do not treat with hormone but may try. We put the cuttings in an unheated house and get rooting in the early summer.

TED GOREAU: What about the technique of holding cuttings in storage before sticking?



CHARLES PARKERSON: We have not had uniform rooting, possibly because we held cuttings too long.

GARY TAYLOR: We take cuttings from our stock plants in March.

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