

ing treatments for stimulating early and heavier budding in rhododendrons. Varieties which tend to bud early naturally were most responsive to these treatments. Not all varieties were responsive to phosphorus nor to growth regulator treatments under these conditions.

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MODERATOR NEWHOUSE: Thank you, Dr. Ticknor. We have had two excellent talks so far and the last one is to be given by Andrew Adams from Maryland.

USE OF CYCOCEL IN PREVENTING FALL LOW-TEMPERATURE DAMAGE TO AZALEAS

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For those of us who grow azaleas of the evergreen types, Kurume, Glenn Dale, Gable, Kaempferi and their hybrids, it is certainly discouraging every spring to find so many plants that are not saleable due to either bark split or bud damage. Most azalea damage, we have found over the years, occurs around the middle of October or the first part of November, after a long Indian summer with lush growing conditions — no frost, just warm rains. The growing season generally ends the first night with the temperature dropping to 23°F or so.

We have often said, and I know many of you folks have too, if we could only stop this growth the latter part of August or early September and be satisfied, instead of pushing our plants right up until the last good fall day. One method, which is time proven, of course, is to dig every plant around the middle of August and check its growth, but that went out with the depression when labor wages started skyrocketing.

In 1963, Dr. Neil Stuart of the U. S. Department of Agriculture at Beltsville, Md. was working with a chemical called Cycocel or CCC (2-chloroethyl trimethylammonium chloride) which he discovered increased bud formation in greenhouse azaleas. With Dr. Stuart's encouragement we experimented at Ten Oaks with some of this material containing 11.8% active ingredient. After several years of burning foliage, stunting plants, etc. we found that one gallon of the 11.8% material mixed with 30 gallons of water, plus 2 cups detergent (Joy) added for spreader-sticker applied as a spray until run-off, did a good job of slowing growth. We also found, through further experimentation, that one application is not sufficient to stop growth with our usual wet August. In the Maryland area we found we need three weekly sprayings, starting on August 9th, spraying again on August 16th and then a final one on August 25th. If there is continued good growing weather through September, then a fourth spraying on September 25th, or one month later seems beneficial.

In conclusion I would like to say we have tried both the B-9 and Phosfon growth regulators and have not had the results we have had with CCC. Cycocel tends to yellow the foliage and give it that hard look which is fine for the landscape nurseryman but not for the florist, so care must be taken to add a generous amount of iron. We add 3 pounds Rayplex Iron per 30 gallons with our Cycocel spray mix to help eliminate this problem. The cost for 10/12" and 12/15" azaleas runs 4½¢ per plant for the three applications. I might add that when a plant reaches four years of age in the field, or when it stops putting out late shoots, we no longer treat them. This material is a great aid to horticulture even though not a cure-all. We are still looking for a better chemical, but to date have found none.

MODERATOR NEWHOUSE: I'd like to call the three speakers to the front table so that they can answer questions.

DICK VANDERBILT: Bob Ticknor, what age plants were you working with?

BOB TICKNOR: Part of them were what Ted Van Veen calls his spring liner and part we propagated in December.

DICK VANDERBILT: And you evaluated them 2 years later?

BOB TICKNOR: Yes.

VOICE: Andy Adams, would you give that formula again please?

ANDY ADAMS: We used the commercial mix of Cycocel which is 11.8%, adding 1 gallon to 30 gallons of water with 2 cups of Joy and 3 pounds of Rayplex Iron, available from Geiger Chemical Co. I use a backpack Sola sprayer with an open end, unscrew the nozzle on the end, and spray until complete runoff. The sprayer is turned up to about half volume.

JOE CESARINI: Dr. Ticknor, what is the name of the yellow dwarf rhododendron you showed?

BOB TICKNOR: That was 'Doubloon' and would probably be classed as an H-3; this would put it out of your area except for maybe some of the real mild areas on Long Island. It was originated in the Portland area.

CASE HOOGENDOORN: Bob, what is the proper time to use B-Nine for bud setting?

BOB TICKNOR: The proper time to apply most of these chemicals is to make the first application when your first flush of growth, that is the leaves, are about half expanded, wait 10 days and then apply again. This year we got good results in the field with B-Nine. Previously, however, we did not obtain very good results; I'm not sure what was different about this year, but we're still working with it.

LESTER FREELAND: Martin Meyer, you mentioned using nitrogen and phosphorous. Have you used any combinations with potash?

MARTIN MEYER: I have used potassium in previous studies but these were done only with nitrogen and phosphorus, but potassium was added to the plants at a constant amount to all of them.

JIM WELLS: Bob, have you used Cycocel just to reduce the vigor of the plant without dwarfing it?

BOB TICKNOR: No, we haven't; we've used only two levels, 2 and 4 oz of the 11.8% material. We did, at one time, use a 1 oz rate but we didn't get the budding response we wanted and discontinued it.

CHARLEY HESS: Martin, in your paper you described the application of fertilizer in summer with effects on growth the subsequent season. Would fall applications be metabolized so that you would have the effect on growth as your summer application?

MARTIN MEYER: I would assume that with plants that grow in the spring from parts that are preformed, that if you apply fertilizer in the fall the parts should be completely preformed and entering, or in, the resting condition; otherwise you may induce a flush of growth. Probably the greater response to fertilizer would be on those plants capable of initiating more leaf primordia after the first flush of leaves grows out in the spring; it is on this group of plants that the nurserymen notices the most fertilizer response from summer applications.

CHARLEY HESS: What do you mean by a summer application?

MARTIN MEYER: In these experiments, they were applications after the flush of growth was made in taxus. The experiments were started about the first of July and carried into fall (about the middle of September) then about the middle of April, when the plants started growing, we began applying the fertilizer for the second summer application.

CHARLEY HESS: Then you wouldn't get the same growth if these were applied in November?

MARTIN MEYER: I wouldn't think so with taxus, because of the preformed condition.

JOHN MCGUIRE: What was the medium used in your containers?

MARTIN MEYER: It's a 1:1:1 v/v soil, peat, turface mixture.

JOHN MCGUIRE: Dr. Ticknor, did you use any banded applications of high phosphorous?

BOB TICKNOR: No, it was either broadcast or put in the planting hole.

JOHN MCGUIRE: The reason I asked is that in Rhode Island we only got response when we used a ton per acre in a band; with broadcast we got no response either.

BRUCE BRIGGS: Bob, did you observe any frost protection by using Ethrel on the rhododendrons?

BOB TICKNOR: There was no damage on any of the plants, treated or untreated, last winter.

JOHN NEWHOUSE: If there are no further questions, I want to thank our speakers for an excellent program this afternoon.