

## RHODODENDRON MYTHOLOGY

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In the 25 years that I have been in the business of growing hybrid rhododendrons I have been exposed to many expert opinions both in person and through programs and publications—such as those of the Plant Propagators' Society. I have appreciated these ideas as they have been useful in expanding my knowledge and often enabling me to produce a better product. Two years ago I left the nursery I had been associated with for most of my life to start my own nursery which is called "Plant Systems". I would like to share some revelations I have had, regarding one hybrid rhododendron, 'Nova Zembla', during these 2 years and how these experiences compare with the myths to which I have been exposed.

I do not wish to imply in any way that the experiences that others have had were not valid because I am sure they were. I would also like to suggest that what worked for me may not work for another person or for another plant.

To give a little background regarding the crop environment, the plants were potted into ½ bushel baskets in a medium composed of 70% ground bark, 15% coarse sand and 15% peat. They were subject to constant feed through the whole growing season. Soil and leaf samples were taken every 3 weeks during active growth in order to keep the nutrition at a near optimum level at all times. Irrigation was supplied as needed, 1 ½ inches of water being given each watering. There was no manipulation of day length or night temperatures.

**Multiple Vegetative Bud Breaks.** For years I had understood that if the rhododendrons were not given a "rest", that the number of vegetative breaks would be few. My experience is that the rhododendron will probably grow continuously for several years with generous breaks. In the middle of this past growing season I found that the common number of breaks was 3 to 7 and some were as high as 10 to 12. This was not following a rest but after 2 months of growing; so I suspect that multiple breaks are more a function of nutrition, temperature, moisture and humidity.

**Continuous Growth.** Rhododendrons normally grow in flushes rather than continuous growth, as azaleas, but under the near optimum conditions this past spring I observed our rhododendrons cycling into continuous growth instead of flushes.

**Close Packing.** I was assured that my crop was spaced much too close (the baskets were touching but not nested). Experience showed that the interior plants were superior to the edge plants. Again I would

like to stress that this may not be true at all under different conditions or other cultivars.

**Nutrition.** All the nutrition these plants received, from me, was in the inorganic form. Some would suggest that if you don't use this or that organic form of feed the plant will not do well. I used ammonium nitrate, potassium nitrate, diammonium phosphate, magnesium chloride, and iron. All were applied through the electronic injector.

**Soluble Salt Levels.** It is generally agreed that rhododendrons are a "low feed" crop; I would agree in principle, but I would like to cite some extremes I have experienced. You must use caution in taking one person's raw data and using it in your own situation. This past summer I sent identical samples to two different laboratories and found nearly a 300% difference in the reporting of two elements. If you hear figures, check them with your laboratory and under your conditions before committing a crop.

This past year I had some *Rhododendron* 'Nova Zembla' plants growing in poly bags in pure peat. I was starting to get some foliage burn, indicating high salts and, therefore, sent in soil samples and found the approximate soluble salts to be : 8,000 (ECA 3.6). This is a level far above that which I would have believed the plants could survive, but they did, once I applied 4 feet of water. There has been little recognition of the fact that soils vary greatly in nutrient retention; what might be an optimum level in pure peat would certainly kill a plant in Lake County, Ohio, soil. Any laboratory should relate their soil report data to the exchange capacity of that medium.

**Phosphon Persistence.** Most of us growing rhododendrons have played with growth retardants during the past few years. One of the materials that has often been mentioned is Phosphon. It has been suggested that once the plant has been transplanted that, as new roots penetrate the new soil, plant growth will return to normal. This is not true, at least for me, and any person buying a Phosphon-treated plant may find the dwarfing persisting for a number of years. This may not be bad but I prefer less persistent chemicals for growth regulation.

**Night Temperatures.** The greenhouse industry mentions night temperatures as separate from day temperatures in the culture of most of their crops. It is seldom mentioned in the nursery industry. I have found that the rhododendron is much more responsive to 65° F minimum night temperature than it is to night lighting and temperature control requires much less fuss and expense than light control. I am not knocking night lighting because I use it too, but when it comes to growth stimulation don't overlook the effect of night temperatures.

**Root Rot Disease.** Stress has been put on root rot (water mold) disease control in nursery crops. It was probably first recognized in connection with rhododendrons but it affects many nursery crops. We

have been having this problem for as long as there have been nurseries but it became less of a problem since the much better drainage of field soils was putting the disease organisms at a disadvantage. As soon as we shifted to container growing and set containers on black plastic the organisms at last had the free moisture they needed to survive and spread. The shortness of the soil column in a pot tends to cause a wet zone at the bottom, which large or multiple pot holes will not correct. Use a well drained mix and never let free water stand around the base of a pot — even during irrigation. This is a much better root rot control than all the chemicals.

**Budding Rhododendrons.** There has been a lot published about how to encourage bloom bud formation on rhododendron plants; I suppose the surest method is wait until it is 7 years old! Little is known *about the budding mechanism and not much more is known about why* certain things work—sometimes. I would like to know a lot more about why the plant forms a vegetative bloom, or a bloom bud, and when this determination is made. I find that many of the techniques that growers have used in the past either don't work all the time or are very dangerous in regard to the possibility of root injury. If you injure the roots this becomes the path into the plant that the root rots take. The throttling of plant growth should be possible with chemical growth regulators rather than the usual method of water withdrawal. This would maximize food production while allowing cell size regulation.

**Plant Breeder.** The plant breeder in the future will be the one responsible for at least a portion of production cost reduction for the grower. At the present time I screen rhododendron varieties that show potential to see if they will respond to accelerated growing methods. If they do not meet the growth criteria the plants will be rejected no matter how well they may look as an adult. This approach is common in the pot-mum industry and is coming to the nursery business.

It seems as though the more we learn the more there is to know. There are still many things about plant functions that we do not understand and it looks like the future of the Plant Propagators' Society will be an exciting one.

**CASE HOOGENDOORN:** Dick, I have been admiring the plant you have on display and it's beautiful, but isn't the bud set on that new growth rather soft and immature?

**DICK BOSLEY:** Yes, but the buds are still forming. As sometimes happens in our area we had 50° F nights during the first two weeks of August which caused buds to set. For the next three weeks or so, we had night temperatures of 60° to 70° F and new growth occurred; when that growth matured, buds set on it. The buds will not be damaged since the temperature in the houses is never allowed to fall below 35° F during the winter. I believe it is important

to supply a plant to the market without either leaf or bud damage.

MODERATOR PINNEY: Thank you very much, Dick. You always give an interesting talk and the name of your organization, "Plant Systems", indicates that you have thought through the entire operation pretty thoroughly before putting it into practice. Dick has aptly indicated that we cannot take a piece of information out of context and apply it haphazardly to our own system.

Our next speaker is Mr. Fleming from the Horticultural Research Institute of Ontario, and he is going to tell us about Baycovin, which is a new experimental material for sterilizing propagating media.