

Our next speaker today is Bob Whalley. Many of you know Bob. He has had quite a background in plant propagation at the Whalley Nursery here in the Portland area. They, of course, propagate literally everything under the sun out there but Bob today is going to talk to us about rhododendrons and how they are handled at the Van Veen Nursery. Bob Whalley:

SANITATION IN RHODODENDRON PROPAGATION

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Sanitation. Where does it begin? When should it stop? I feel it is essential to consider the journey of one cutting from a stock plant to a landscape planting. See if its attitude is that sanitation should be hospital conditions or garbage heap. Should present conditions at your nursery be compromised?

My name is 'Nova Zembla'. Genus *Rhododendron*. Because of my growth habit, my hardiness factor, and my red flower color, I am an exploited variety. It seems I grow well in many locations in the Eastern and Midwest regions of the U.S.A. because of my flower bud survival rate. I propagate comparatively easy and my color is demanded as a highlight for gardens and landscapes in the spring. Northwest nurseries grow me into a semi-mature shrub in 3 years. Then I am shipped in cool fruit or beef carrying refrigerator trucks to Eastern cities — but I am getting ahead of my journey —

In breezy fields of the Willamette Valley I grow lush and bushy. Then July arrives and I get trimmed — reduced — thinned — plucked from field plants. Any larger stock plants are humiliated by being stripped of their newly grown cover. These plants are struggling anyway because usually they are imported from afar and planted in any space available. With the best of intentions they are planted close together to be moved later. Most humans, being limited to seeing only a few things to do each day seem to forget that each stock plant relishes plenty of space for expansion and good air circulation. My growth is very specialized and each branch a limb of beauty — to be admired.

My efforts in growth are appreciated by a few of the garden pests unless a seasonal insecticide spray is applied. Aphids can cause some very mottled looking and stunted growth and leaves. Many times this can cause the same effect as a late frost. There are a few airborne fungi that can move into the neighborhood and give my stems and foliage some problems. *Botrytis* and *Phytophthora cactorum* are the two most commonly recognized. So when the new

summer growths are harvested I begin life anew in a healthy or weakened state. Studies are being conducted to determine what levels of nutrients should be stored in my leaves before I am separated from my mother plant. If I am given all the proper conditions of growing, then my chances of rooting are very good. Even the cleanliness of the clippers that cuts me from the stock plant should be cleaned daily. Tools should be soaked for 5 minutes or more in a solution of 50:1 diluted LF-10 after the pitch and gummy residue accumulated from new growths has been cleaned off — clippers along with knives, scissors and any tools that are used in the processing of my fellow cuttings. I usually am harvested during day by being cut and stored in sacks. I should be kept cool and moist as soon as possible after separation from my parent plant. If plastic bags are used, it is critical to keep them out of the sunshine because the heat builds up in them very quickly. After the bags are emptied, they should be hosed off, inside and out. Burlap sacks should be soaked in a 50:1 concentration of LF-10 each time after they are used.

I and my companions are brought into one house that is used to store us until the following day. We are dumped onto empty rooting beds that have had saran shade cloth stretched tight over them. We are bathed with a flooding stream of water and the shade cloth allows the excess water to drain so we will not lie in a puddle of water over night. This house is used for all cuttings to be stock piled so we will not be bringing any of our problems to the other rooting houses. The next morning I am awakened by a man with a basket who collects us and carries us to a table in the preparation area. Extra leaves are pulled off; remaining leaves are cut so about 66% of my leaf surfaces are left. Then a bath in a combination of Benlate, Dithane M-45 and Malathion is given to us. We set out on frames that are covered with saran shade cloth and we are allowed to dry — at least until the excess moisture is gone. While I am drying I have a chance to look around and see that the trimmings from that day are bagged and the floors are kept as clean as possible. At the end of the day I can hear sweepings and the whole area being picked up and put in order. I hear “tales” that cutting preparation areas can be overlooked for cleanliness, floors unswept and stems and leaves scattered around the edges, tables unwashed, tubs of solutions left uncovered, tools dropped onto dirty surfaces after they have been dipped in LF-10, and sacks and boxes allowed to accumulate, piled or stacked which collect dust plus all the scattered trimmings that can hide under them. This area is as critical as the next. The whole chain of cleanliness can be broken if one step of processing is neglected.

When we are sufficiently dry our stems are cut with a diagonal cut and the side is wounded with an inch slash so my cambium is

exposed. The open cut is dusted with Hormodin No. 3, which has been boosted to about 1.5% IBA, and Benlate has been added to the powder. Two rounded teaspoons of 50% IBA are added to one 8 oz. can of Hormodin No. 3 and one oz. of Benlate is also added. This is mixed with a beater in a bowl or churned for five minutes in a plastic bag. Some of my cousins are susceptible to being burned at such a high rate of IBA so they will be dipped in Hormodin No. 3 with just Benlate added. After my stem is powdered I am dropped into a cardboard box that is lined with a burlap sack that has been soaked in LF-10 (50:1). I am stored in a cool room and await the end of the day when I will be dumped on top of the bed I will develop my roots in. Here I stay for the night. The next day I am "stuck" along with thousands of my companions into the bed of peat moss (60%) and perlite (40%) medium. If my sense of smell is acute enough I detect that some preparation of cleaning the greenhouse I am in has taken place before I arrived. Actually if I could smell the formaldehyde that was used as a contact sterilant I doubt if I could survive. The humans in charge applied a gallon of formaldehyde to a house about 15 by 70 feet. The house had been thoroughly washed and soaked with water prior to the application. Application was with a siphon on a hose bib — dilution rate 15:1. The house had been closed for 48 hours and then opened and the mist system turned on since this is the best method of getting formaldehyde to evaporate. After a week the humans could no longer smell any trace of the chemical so they painted the wooden side boards with copper naphthenate (8% diluted with paint thinner) and then the medium was mixed on a clean black top pavement surface and placed in the beds. The medium was leveled and the edges pressed but not packed or pounded firm. I really prefer developing my callus and root system in a comparatively loose medium so I have maximum drainage and air is allowed to flow through the medium. As I am telling you this, I am wondering if all the tools (shovels and smoothing boards) were cleaned that handled the medium. Hmmm. Soil dust or BHC is lightly dusted over the surface of the bed and watered in. Paths are sprayed with 200:1 rate of LF-10.

So I sit in the greenhouse bed day after day developing my callus, bathing in the overhead mist system, and eventually my roots become sufficiently large after 6 to 8 weeks. I have heard that there is a system that sterilizes the water that is pumped through the mist system. The growing house I will be going into has had its ground beds treated with methyl bromide (1 lb. per 100 sq. ft.) during the warm summer days. New peat moss is added, the beds leveled and anyone is reprimanded for stepping in the beds until they are empty again. I get to rest my roots in a bed of peat moss and enjoy a few months of rest. Occasionally I am given enough water to encourage my roots to extend and look for some nutrients

that have been added to the peat moss. Three pounds of dolomite (fine grind) and superphosphate (also fine) plus 3 oz of fritted trace elements are added to 50 sq. feet of bed space or about one cubic yard of peat. February 15th begins the growing process. I am being fed custom mixes of "foliage feed". Actually I feel that very little food is absorbed through my leaves. The bulk of the water soluble food is washed down into my root system. Every two weeks I am fed until I am sent out into the world to grow into a year-old liner, or a two, three or four year landscape specimen. Each time I am moved the soil conditions should be evaluated by a soil test before I arrive and then adjusted as levels of nutrients and trace elements are indicated as being too low or too high. Lath houses and fields should be prepared for cleanliness prior to my moving into them. Soil sterilants should be used to clean up soil and airborne disease problems but used with discretion so that the same material is not indiscriminately used year after year.

My conclusion is that I, as *Rhododendron* 'Nova Zembla', along with all my brothers, sisters, cousins and far-flung relatives do so much better with the proper clean attitudes expressed around us at each stage of my growth and development. Yes, a kind word, a positive thought verbalized in my direction will encourage me to mature and bloom. I respect, thrive, and survive so much better under the best sanitary conditions all along the various stages of my development and growth.

DAVID ADAMS: Our next speaker today is Richard Smith from the Rod McLellan Company, South San Francisco. This company, as you may know, handles cut flowers and orchids; and Richard tells me they are also selling fertilizers and prepackaged soil. This is an item that I have noticed around the country that more and more companies, large and small, are getting into — handling of prepackaged soil. Even my own parents, who just have a very small place, find that they make quite a bit each year just packaging up their soil mix and selling it to the local gardeners. Richard runs the Rod McLellan propagation laboratory and, of course, they do a great deal with orchids. Today he will speak to us on orchards and orchids propagation. Richard Smith: