

THE MYSTERIES OF RHODODENDRON PROPAGATION

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In a 1932 Van Veen Nursery record book there is a listing of 44 rhododendron cultivars, totaling 3,125 cuttings, which were set in an outside ground bed — the old fashioned hotbed type. The uniqueness here is one of the first installations of lead cable for electric bottom heat, and a rooting record of 78%. This percentage is a remarkable achievement for an age when rooting of rhododendrons was so little known. Hormones, fungicides and misting were yet to come.

Since that time the production of rhododendrons has accelerated to many millions each year. However, the overall percentage of rooting has improved relatively little, in spite of our more modern production methods and the research efforts employed over the years. Our rooting percentage at Van Veen Nursery today is seldom much better than 85%.

Briefly, I will review our present method of rhododendron propagation starting with a few cuttings taken as early as the first part of June. The bulk of the production starts around the first of July, however, and we take some cuttings as late as January. During the heat of the summer, one greenhouse is set aside to store the overflow of gathered cutting wood. Saran cloth is stretched across the top of the empty benches and the intermittent mist system is used to keep them turgid.

In the preparation of the cuttings one crew removes excess leaves and trims back those remaining. These are placed in plastic baskets and dipped in a Clorox solution (1:20) for five minutes. Then they are rinsed in fresh water and passed on to another crew who cuts and wounds the stems. The cuttings are then dipped in a hormone preparation, which may be a powder or a quick-dip solution of varying strengths depending upon the cultivar and time of year. We have stopped using Benlate both in solution and in a powder mix. There is reason to believe a rapid breakdown of the Benlate takes place when in contact with moisture, which then inhibits rooting.

Cuttings are stuck in open benches in glass greenhouses equipped with 72°F bottom heat and intermittent mist. The medium used is 60% peat and 40% coarse perlite. The houses are completely cleaned out once a year and fumigated with formaldehyde. As the cuttings are rooted they are transferred to growing-on greenhouses into a peat and bark mix. Overhead gas heaters are used here. Cuttings not sufficiently rooted are reset.

As alluded to in my opening remarks, the mysteries of rooting rhododendrons are still with us. While we know more, have new

chemicals, and enjoy elaborate testing facilities, in actuality we have not greatly improved the rooting percentage in the last 40 years.

In deference to ourselves we must admit there are a tremendous number of variables which may influence rooting. Conclusions of successes and failures under the many trials reported could very well be influenced by one or more other factors. I would like to briefly review some of these:

1. Condition of the stock plant. Is it healthy, or weakened by disease, insect damage, lack of fertilizer, or water stress?

2. Time of year cuttings are taken. There would be considerable variation in maturity by locality and seasonal weather conditions within a particular area. Is a cold period beneficial?

3. Amount and kind of fertilizer used on the mother plant — and then what is actually in the tissue, including trace elements?

4. The influence of herbicide residuals in the stock plant on rootability.

5. Maturity of the cutting, location on the plant, caliper, first or second growth, terminal or side shoot, presence of flower bud; juvenility.

6. Length of cutting, number of leaves left on, and type of wound.

7. Strengths and types of hormones and fungicides. Has it been properly mixed, or has there been a loss of potency through dilution?

8. Type of rooting medium. Is pH a factor?

9. Bottom heat temperature. How close a tolerance must be maintained for maximum rooting? What happens when heat is lost for a day or two?

10. The moisture requirements of the medium. How much mist should be used? Would the installation of fogging nozzles to maintain 100% humidity be better?

11. The benefits of sunlight or darkness. Is the amount of greenhouse shading a factor?

12. How beneficial is the use of sawdust in the rooting medium? Is it advantageous to use an antidessicant to maintain quality of soft cuttings? Why does storage in a plastic bag seem to speed up rooting? To maintain moisture in heated beds they must be soaked periodically. The cold drench reduces temperatures and this must have some effect on the rooting.

When we know the answers to all of these mysteries we will have learned our lesson well. As propagators we can then pursue new problem areas as yet unthought of. Our work will never end.