

At the present market price of crapemyrtle we feel that our propagation and production program is an economically sound one. This is a good example of the way in which changing economic conditions can make a change in propagation and production methods not only possible, but necessary.

MODERATOR ZONDAG: Thank you, Lonnie. Our next paper is by Joe Cesarini and is entitled, "Rooting of *Betula alba* clones."¹

MODERATOR ZONDAG: Our next paper is on propagation of rhododendron cuttings and will be presented by Mike Medeiros.

¹ EDITOR'S NOTE Mr Cesarini discussed his methods of rooting selected clones of *Betula alba* and Roger Coggeshall spoke on propagating own-rooted lilacs

ALL YEAR PROPAGATION OF RHODODENDRONS BY CUTTINGS

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Most nurseries which propagate rhododendrons take the cuttings when a new flush of growth matures. In my area this is in early July and in September. Although these times generally produce the optimum rooting, it is possible to root rhododendrons very successfully at other times of the year.

If you propagate rhododendrons almost exclusively, as we do, after the fall crop is rooted you will have an empty cutting house. Starting another crop at this time spreads out the work load and keeps our facilities operating year round.

Before giving a month-by-month accounting of our cutting activity, I would like to describe our propagating structures and materials.

Our propagating house is a Quonset-type structure covered with polyethylene. It has a bench on either side with a path in the middle. Each bench is constructed to support three rows of flats. The bench is a pipe structure covered by a length of copper naphthenate-treated snow fence. This allows the bottom of the flats to be heated by a hot air poly duct which runs the length of each bench. The sides of the bench are enclosed with poly to keep the hot air under the flats.

A mist line is suspended over each bench where it will not

interfere with flat handling. Flora-Mist fogging nozzles supply the mist which is controlled by a balance screen.

Cedar flats measuring 14 x 20 x 3 inches hold the cuttings. They are treated with copper naphthenate before filling with the medium. The use of a flat to hold the cuttings is very important in our operation. It allows us to remove the flats as the cuttings root and replace them with newly-filled flats. If flats are not used and the bench is filled with medium, it would be necessary to transplant the cuttings when they are removed. With flats, transplanting can be done at another time. In our case, they will stay in this original flat until they are sold as rooted cuttings or transplanted directly into outdoor beds.

The use of individual containers also tends to prevent the spread of disease organism within the bench since there is no lateral flow of water between them. If a disease is detected in a flat, the flat can be removed without disturbing other flats.

Our rooting medium is vermiculite; it is sterile, lightweight, readily available and of a consistent quality from year to year. We use the insulation grade which has a larger particle size than the horticultural grade. Before placing it in the flats it is screened with a 1/8 inch square mesh screen to remove the fine particles. This gives a medium with a high air volume, thus eliminating any tendency toward soginess.

One of vermiculite's greatest advantages is that the cuttings can be left in the flat for as long as a year after rooting and it will still be easy to separate the cuttings without damaging the roots. This permits us to stick a cutting in July, let it root that summer, store it in a cool house and plant it in outdoor beds as late as November without having to make an intermediate transplanting.

Due to the high air volume of vermiculite, it does have the disadvantage of drying out rather quickly and requires more watering than other media.

Hormones are applied in liquid form using the quick-dip method. We prepare our own hormone solution consisting of 0.5% indolebutyric acid, 0.5% naphthaleneacetic acid and a trace of boron. To prepare this, the hormone powders are dissolved with Carbowax 400 and then mixed with an equal volume of water to make our basic solution. To this basic solution, we then add different amounts of water to vary the strength. This will range from 1/2 water, 1/2 basic solution for the harder cuttings to 1 part basic solution, 9 parts water for the most tender cuttings.

In preparing the cuttings we remove all but the top 4 leaves and cut off the outer 1/3 of these leaves. The cutting is then cut to a length of about 2-1/2 inches. Next, it is given two side wounds by either cutting or scraping, Then it is dipped in the hormone solution. Scaly-leaved cuttings are treated in the same

of harvesting and production of large numbers of rootstocks. It is a new technique and it is very exciting.

One of our Western Region members brought back some slides from their meetings in Hawaii to show us how they propagate some plants in Hawaii without any medium.

BRUCE BRIGGS: These are cuttings of a groundcover which is easy to root. They are laid 200 to 300 per pan without any medium and placed under the mist to root. Because there are so many in each pan you can't let the roots get too long or they tangle badly and are difficult to separate, but they do often take these right from the rooting bench out to the jobs and plant them barerooted.

MODERATOR CARVILLE: Thank you, Bruce. We have one more slide presentation and then we will adjourn. Bob Fitzgerald wants to show us some work he has been doing on overwintering plants in Massachusetts.

EDITOR'S NOTE: Bob Fitzgerald showed slides of a winter storage method used inside Quonset structures. Sheets of polyethylene 1-1/2 mil thick were stretched over plants and tucked in around plants laying on their side in Quonset structures. An attempt was made to approach the 1 to 1 ratio discussed by Frank Gouin. Some damage occurred to plants near the perimeter of the Quonset structure and in the second year insulation was used on the outside edges of the plants under the poly with no damage resulting. Temperature graphs showed the temperature beneath the poly remained fairly constant although very cold and fluctuating air temperatures occurred both outside and inside the Quonset structure.

MODERATOR CARVILLE: With this presentation we will adjourn the meeting and hope to see all of you in Tulsa, Oklahoma, next year.

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way except that the leaves are not cut. Benlate is applied to the newly stuck cuttings and the application is repeated about every 6 weeks.

Production consists primarily of the hardier cultivars such as 'Catawbiense Album', 'C. Boursault', 'C. Grandiflorum', 'Roseum Elegans', 'English Roseum', 'Nova Zembla', 'America' 'Ignatious Sargent' and 'Peter J. Mezitt'.

Now I would like to run through the 12 months, starting with January, to tell you which months we have found it possible to take cuttings successfully.

January and February are good months for taking cuttings. At this time of year we use a hormone concentration of 1/2 basic solution and 1/2 water. This same concentration is used on all cuttings taken after the first frost.

We have found this is a good time to take 'Peter J. Mezitt' cuttings. As soon as they root, they will put on a flush of growth. Rooting them at this time of year eliminates the dormancy problem sometimes associated with the fall rooting of this cultivar. When March arrives, it becomes more difficult to root rhododendrons successfully. At this time of year all of the rhododendrons are ready to grow and the sunnier days will force growth in the warm greenhouse. Cuttings taken in March will need more room in the flats to accommodate the new foliage if overcrowding is to be avoided.

After March, no more outdoor cuttings will be taken until the new spring growth matures in early July.

July cuttings are treated with our basic hormone solution diluted with water from 50 to 80%. The concentration depends upon the maturity of the cutting and the particular cultivar being treated.

After we have made the cuttings from this first flush of growth, we wait until the next flush matures before starting cuttings again. This is sometime in September.

October, November and December cuttings are treated as described previously for the months of January and February.

Cutting material may be taken from either liner beds, permanent mother blocks or from field stock. By properly selecting cuttings from liner beds you can promote desired branching in the plants. However, if you take cuttings from this source it will be necessary to leave the plants in the bed one more growing season to develop the necessary size for lining out.

Although we make cuttings many times during the year, we generally do not take them from any one plant more than once in that year. Removing repeated flushes of growth from a rhododendron can be harmful to the plant.

In conclusion, it is possible to root rhododendrons successfully over an extended period of time and doing so may allow you to use your labor and facilities more efficiently.

MODERATOR ZONDAG: One paper has been added to our program this afternoon and is entitled, "Observations on the Rooting of Rhododendrons", by Arie Radder.

OBSERVATIONS ON THE ROOTING OF RHODENDRONS

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At Imperial Nurseries we have switched from field growing of rhododendrons to 100% container growing. In our Connecticut winter climate we have to protect the containers; this is done by placing them in plastic hoop houses where we stack them together in November and leave them under plastic protection until the end of March.

About the third week of March we start to remove the plants from the hoop houses and space them on black plastic in the growing area so that we can put some good growth on them without any further spacing during the season. At the same time we will shape up all the plants to obtain compact, full rhododendrons. In the past we threw the clippings on the compost heap, but I noticed that there was a considerable amount of nice propagating wood among the clippings so we decided to try to root them. We had space open in our propagating houses and on April 4, 1973 we placed cuttings of four cultivars of rhododendrons in our cutting benches. The rooting medium consisted of 60% Canadian peatmoss and 40% coarse horticultural grade perlite.

On April 10, 1973 we stuck 2500 'Nova Zembla', 2200 'Catawbiense Boursault', 500 'Catawbiense Album' and 150 'Roseum Elegans'. The cuttings were treated with 2% IBA in talc with 12-1/2% Dichlone active and 50 ppm boric acid added. Additional dates and treatments were as follows:

- 4/10/73 Immediately after insertion all material was drenched with a solution of 8 oz Dexon and 6 oz Benlate per 100 gal of water.
- 4/20/73 Cuttings were sprayed with Dithane M 45, 2lb/100 gal.
- 5/8/73 Repeat of Dexon and Benlate drench.
- 5/15/73 Repeated Dithane spray.