

**PROPAGATION OF KALMIA LATIFOLIA  
FROM SEED AND CUTTINGS**

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There are several ways to propagate *Kalmia*: seed, layering, grafting, or cuttings can be used. Al Fordham, Dick Jaynes and others have told us about propagation from cuttings at previous meetings. As a matter of fact, Dr. Jaynes has given me a couple of plants of a pink flowering clone, which looks promising as far as rooting ability is concerned. I will discuss a method of propagation from seed, which I tried this year.

At one time we bought cut-back laurel plants, which were shipped in from the Carolinas. We gave this up after a few years, because we had a 15 to 20% loss in plants that never "broke," and there were always 20% or more culls in the ones that did break. Because of this we decided to start our own seeding program.

In Connecticut there is no problem collecting seed from the laurel, which is indigenous to our state. We collect the seed pods sometime in October, extract the seed and put it in a sealed jar, which we keep in the refrigerator for 1 yr. We normally sow the seed in November or December and seeds start to germinate within 3 weeks.

From then on it was an agonizing wait for the seedlings to develop true leaves, so they could be pricked off. After pricking off they would sit there and we would be lucky to have a transplant that was 3 inches high by the end of the first year.

This past season we tried a different method. Seeds were sown on October 2, 1973, in a medium consisting of 50% sphagnum peatmoss and 50% horticultural grade perlite. Germination started after 2½ weeks. The seedlings were then kept under fluorescent lights to provide a 16 hr day. The seedlings grew somewhat faster than usual, but, I was still not satisfied with the results. I decided to try an experiment with gibberellin and had our laboratory make up a solution of 200 ppm. We buy a 90% gibberellic acid (GA) and dissolve 222.2 mg of 90% GA in 1 liter of water to obtain 200 ppm. Water temperature should be approximately 20°C. (68°F), but the powder is first mixed with alcohol to get it into the solution. This solution was sprayed on the plants with an atomizer.

**Experiment 1.** One flat of seedlings was treated with 200 ppm GA on January 7, 1974; after 1 week we saw considerable internodal stretching. Not being sure how long the effect would last, we repeated the 200 ppm GA spray on February 4; the stretching was extensive following this second treatment.

Dr. Jaynes, who was interested in the experiment, tried the treatment on some of his seedlings. His approach was more scientific since he took measurements and grew control and treated plants in the same flat. The following are measurements of Dr. Jaynes' seedlings on March 13, 1974, 19 days after 1 treatment of 200 ppm GA applied February 22. Seed was sown December 1, 1973. Treatment blocks consisted of 36 seedlings (3 groups of 12). Average height of the untreated seedlings was 5.2 mm but the GA treated were 13.6 mm. This was a 2.6 fold increase in height.

The plants that were treated by me on January 7, with a repeat dose on February 4 were pricked off on February 10 into peat pots, containing a mix of 1/3 fine pine bark, 1/3 sphagnum peat, 1/6 sand and 1/6 perlite. We treated the transplants once again on March 14. The results were very gratifying in that a tremendous increase in size of the seedlings was obtained.

**Experiment 2.** Seeds were sown on January 7, 1974, after soaking with 200 ppm GA. Germination started after 2½ wks. No additional light was given, additional treatments with GA were given on February 4 and 24 and on March 14. This was excessive as the plants stretched too much.

**Experiment 3.** Seed sown in October and kept under 16 hr light until March, were transplanted on February 10, 1974 and given one treatment of 200 ppm GA on March 6. From all indications the results of this single treatment were as good as the previous 2 experiments.

All treated transplants were pinched on May 4 and 135 clippings were inserted in a medium of 60% sphagnum peat and 40% perlite. We used a hormone mixture consisting of 0.8% IBA in talc, 12½% Dichlone, and 50 ppm boric acid. The cuttings were rooted well in July and were potted in August. All our plants, treated and untreated, were taken out of the propagation house in May and put in shaded hoopouses without plastic. The shading consisted of either chrome-treated tobacco cloth or saran cloth. All plants, treated and untreated, are over-wintered the first year in a plastic hoopouse with a minimum temperature of approximately 35 to 40°F.

I am inclined to believe, that by giving the seedlings at least one, and possibly two, treatments of GA, we can eliminate the fluorescent lighting and obtain good results.

This pink clone which Dr. Jaynes developed in No. 223. We took 135 cuttings of this clone on July 31, 1974 and divided them into 3 groups in order to treat them with 3 hormone preparations of 0.8, 1 and 2% IBA in talc with 12½% Diclone and 50 ppm boric acid added to each. Cuttings were inserted in a medium of 60% sphagnum peat and 40% coarse horticultural perlite and kept under intermittent mist. They were lifted on October 30 and out of

the 135 cuttings, we rooted 126 for a take of 96%. I wrote Dr. Jaynes and he indicated that this clone has been his most reliable rooter for several years, usually rooting 80 to 100%. Dr. Jaynes has tentatively decided on 'Pink Surprise' as a name for this clone.

We also received young plants of 2 clones from Dick Jaynes identified as 'No. X 120 PLT 18 Red bud' and 'No. 137 Red bud.' We took cuttings from these plants on the same date as clone No. 223, same treatments and lifted on the same date. Results were as follows: No. 120-PLT 18 - 140, inserted July 30, 1974, lifted on October 30 — 51 rooted, 89 not rooted. No. 137-143 inserted July 30, lifted on October 30 — 33 rooted, 110 not rooted.

The unrooted cuttings were completely healthy. I realize now that we were hasty in lifting the cuttings, for previous studies indicate that if rooting occurs — it takes 3 to 5 months.

## REFERENCES

- Fordham, A.J. 1966. Hard-to-root woody plants. *Proc. Int. Plant Prop. Soc.* 16:190-193.
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- Eichelser, J.E. 1972. Propagation of *Kalmia latifolia*. *Proc. Int. Plant Prop. Soc.* 22:190-192.
- Jaynes, R.A. 1971. Selection and propagation of improved *Kalmia latifolia* cultivars. *Proc. Int. Plant Prop. Soc.* 21:366-373.

CHARLIE HEUSER: Thank you, Arie, for a very interesting paper. We do have a little time and will entertain questions for any of the speakers on this morning's program.

RAY VAN DER AVOIRD: I would like to ask Dr. Swanson how long he had his *J. scopulorum* in the peat and sand medium and, since he indicated they were 100% callused, does he think they would have rooted if he had left them longer?

DR. SWANSON: They were in the medium for 60 days. My rooting medium was rather wet but I think that if it had been a little drier and they were left a little longer, they might have rooted.

JIM WELLS: I'd like to ask Francis Gouin about his use of Offshoot-O; he skipped over that rather hurriedly in his talk.

FRANCIS GOUIN: At 3% we burn off all the foliage; we use 1% or no more than 1½% and get very good results. Make sure you put it on early in the morning because, even at 1%, we had quite a bit of tipburn. Don't use Offshoot-O for the first pinching; we use shears because of the uneven breaking you get immediately after rooting. For the later pinchings you can use Offshoot-O and have beautiful results.

PETER ORUM: I'd like to ask the same speaker, what is the difference between Osmocote and any other fertilizer?

FRANCIS GOUIN: This is a special formulation of Osmocote which gives you very slow release for the first 45 days, less than 3% is released during this time. In older formulations of Osmocote, most release occurs prior to 45 days but you will not have rooting then and the material would be lost by leaching. By the end of the 45 days you should have some rooting and the fertilizer released by this new formulation will be picked up by the rooting cuttings, insuring a rapid establishment of the new plants.

CHARLIE PARKERSON: I'd like to ask Dr. Hoitink how he economically applied drenches of materials such as Truban? It takes us a long time to do this with a sprayer that will agitate the material and keep it in suspension.

DR. HOITINK: First of all, the secret to applying drenches is to use the emulsifiable concentrate designated EC on the label. These EC formulations have wetting agents which keep the material in suspension. One large grower who has irrigation lines which are separate from his drinking water lines puts the material directly into his irrigation water. The big secret is to buy and use the emulsifiable concentrate formulations.

CHARLIE HEUSER: We are out of time so all other questions will have to go into the Question Box. I want to thank all of the speakers who participated in this part of this mornings program.

### **Wednesday Afternoon, December 4, 1974**

The afternoon session convened at 1:35 p.m. in the El Grande Ballroom. Mr. William Flemer III served as moderator.