

LITERATURE CITED

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MODERATOR KESTER: Our next speaker is going to talk about rooting hardwood cuttings of a specific plant, the red smoke tree. He is Lee Rosenkranz of Doty and Doerner, Portland, Oregon. Lee:

EXPERIMENTS IN ROOTING HARDWOOD CUTTINGS OF RHUS COTINUS 'ROYAL PURPLE' — RED SMOKE TREE

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Initial work on rooting cuttings of *Rhus cotinus* 'Royal Purple', (red smoke tree), was started in the summer of 1965 with an attempt at rooting softwood cuttings taken at several intervals. This resulted in a complete failure, and a decision was made to look into the prospects of hardwood cuttings.

In the past all smoke trees had been propagated by grafting, but a shortage of understocks, and the tendency toward weak graft unions, prompted a consideration of rooting of cuttings.

In January, 1966, the first cuttings were stuck in pure sand in a heated greenhouse with a bench temperature of 70° to 72°F. One hundred cuttings were put in a regular cutting bench, and another 100 were placed under intermittent mist. All were terminal cuttings. Most cuttings leafed out, but those in the regular bench failed even to callus. Those under the mist lasted longer, and a few rooted, but the roots decayed before they were ready to dig.

In December, 1966, a cutting bed was built in an unheated poly house which used the heated greenhouse for its south wall. The bed was on the ground against the north wall of the greenhouse, and was equipped with bottom heat. The cable was under five inches of fine sand. Depending on the outside temperature, the bed remained between 60° and 72°F. Terminal cuttings were made 8 inches long, and half of them were wounded. The cuttings were treated with Hormodin #1 or #3, or Jiffy Grow, diluted 1 to 10 with water; an untreated check was included. A few sub-terminal cuttings were used to fill out the counts. Four batches of cuttings were stuck at two-week

intervals, starting on December 6. The rooted cuttings were dug 12 weeks later.

The results were:

1. Cuttings rooted nearly 100% in the two December groups while the second two taken in January, ran 50% and 20% each.
2. Wounding seemed to have little effect on the rooting.
3. Jiffy Grow produced a slightly better root formation than Hormodin.
4. Wood from any part of the current year's growth rooted as well as the terminal wood. This included cuttings up to one-half inch in diameter.
5. Rooted cuttings placed in gallon cans kept in the heated greenhouse sustained a 30% loss, which was largely due to a weak root system.

In 1967 the same procedure was followed except that only Jiffy Grow was used. Again, the results were much the same, and pointed conclusively to the taking of cuttings as soon as the stock goes dormant. The plants this year were canned and put in a cool poly house. This resulted in a 60% loss, although most of these, again, were the ones with weak roots.

In 1968 conditions prevented putting in cuttings before mid-December. Two small batches of cuttings were put in a week apart in the same bed as before, and a third, larger group of cuttings was put in a new bed on the east side of the greenhouse in an unheated poly house. Cuttings were used from all parts of the current year's growth, and treated with Jiffy Grow. None of the cuttings were wounded.

Between Christmas and New Year's Day a storm hit. No more cuttings were taken until late January. The cable in the new bed failed during the hardest freeze, and could not be repaired. The cuttings froze in place. The cuttings taken in late January were a complete failure. From a total of nearly 2000 cuttings only 150 survived and these were from cuttings taken in mid-December.

MODERATOR KESTER: Thank you, Lee. Now Rudy Wagner will discuss some of his experiments in propagating fruit tree rootstocks by hardwood cuttings.

ROOTING HARDWOOD CUTTINGS OF FRUIT ROOTSTOCKS

GOTTLOB (RUDY) WAGNER

C & O Nursery

Wenatchee, Washington

Propagation by hardwood cuttings is known to be the least expensive and easiest way of reproducing plants vegetatively. The cuttings are easy to prepare and no special equipment is needed during the callusing and rooting period. Hardwood cuttings are made usually from one-year-old dormant wood.