

**PROPAGATION OF PHAEDRANTHUS BUCCINATORIUS
(BIGNONIA CHERERE),
BLOOD RED TRUMPET VINE**

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Phaedranthus buccinatorius (*Bignonia cherere*) is an evergreen vine that climbs by tendrils, with leaves of two oval or oblong leaflets, 2 to 4 inches long. Clusters of large 4 inch long trumpet-shaped flowers stand well out from the vine. The color of the flower is orange-red with a yellow throat, which turns bluish-red with age. The flowers appear in bursts throughout the year whenever the weather is warm.

Phaedranthus buccinatorius is a subtropical vine which withstands temperatures as low as 20° F. In the interior valleys of California it should be planted in a protected place. Along the south coast area of Santa Barbara county it is used extensively on high walls and along fences; it blooms most of the year with lots of bright color.

To propagate *Phaedranthus buccinatorius*, I used two types of cutting wood from outdoor and indoor grown mother stock plants. The outdoor mother plant has thick, dark, leathery leaves. The indoor mother plant has thin, tender leaves which are lighter in color, with tender stems. The young hardened wood below the tip was used — about 4 to 6 inches long with 2 to 3 nodes.

I separated the cuttings (outdoor and indoor) into three groups for hormone treatment — Jiffy Grow No. 2 (combination of 3-indolebutyric acid and naphthaleneacetic acid). One group was dipped in 1,000 ppm, another in 5,000 ppm, and another in 10,000 ppm. Each group was divided into 5 and 10 second dips, and dipped ½ inch of the base. The cuttings were then put into flats filled with a medium of vermiculite and Sponge Rok, 1:1. The flats were placed on a bench with bottom steam heat of 65 to 70° F. Watering was done by a 5-minute mist system with 3-second durations.

In the first group which is 1,000 ppm, with 5-second dip, the indoor cuttings callused in 12 days and the outdoor in 17 days. In 5 weeks roots started to appear on the outdoor, but the indoor took 6 weeks. In 7 weeks one cutting out of 75 of the indoor group had rooted, 49 callused, 25 had no callus, with two lost from leaf drop or other causes. The average number was two roots at 2½ inches long.

In the 5,000 ppm, callusing time for the indoor group for 5-second and 10-second dip was 12 days. For the outdoor it was 20 and 22 days. Rooting for both dips was 5 weeks. In 7 weeks the 5-second dip had one cutting rooted (indoor) — the outdoor had 11. In the 10-

second dip it was reversed. For 5-second dip, 51 cuttings had callused for indoor, and 36 for outdoor. In the 10-second dip it was reversed. Twenty had no calluses for indoor, and 26 for outdoor in the 5-second dip. In the 10-second dip, 18 had no callus for indoor and 19 for outdoor. Three were lost for the 5-second dip indoor and two lost for outdoor. For the 10-second dip, ten were lost for indoor and four for outdoor. The average number of roots for 5-second dip indoor was one at 1 inch, for outdoor it was two roots at 2 inches. For 10-second dip indoor, the average number of roots was 1½ at 2½ inches, for outdoor one root at 1 inch.

In the 10,000 ppm group callusing time for indoor and outdoor, 5-second and 10-second dip, was 17 days. Rooting time for 5-second dip indoor was six weeks, outdoor was four weeks. For 10-second dip indoor and outdoor it was five weeks. In seven weeks 5-second dip indoor had five rooted, outdoor had 12. The 10-second dip indoor had 7 and outdoor had 6. For 5-second dip indoor 48 had callused, outdoor had 25 callused. For 10-second dip 58 had callused for indoor, 37 for outdoor. Indoor 5-second dip had 22 no callus, 19 for outdoor. The 10-second dip indoor had ten no callus, outdoor had 16. There was no loss for indoor cuttings for both 5-second and 10-second dip; 24 were lost for 5-second dip outdoor and 16 for 10-second dip outdoor. The average number of roots for 5-second dip indoor was one at 2 inches, for outdoor it was two roots at 2½ inches. For 10-second dip indoor the average number was one at 3 inches, for outdoor it was two at 2 inches.

The last group was experimental — to determine if dipping 30 seconds at 10,000 ppm would burn the cuttings. The results were better than expected. For indoor callusing time was 12 days, 22 days for outdoor. Indoor rooting took 5 weeks and 6 weeks for outdoor. Both indoor and outdoor had only one rooted, but 61 had callused for indoor. There were no losses. For indoor there were two rooted at 3 inches long.

In this experiment, 1,000 ppm and 5,000 ppm, outdoor grown cuttings in 5-second dip, started vigorous top growth in about one week. In the 7th week 1,000 ppm had three 12-inch long runners while 5,000 ppm had three 10-inch long runners. Top growth on both groups did not seem to have any effect on the rooting.

Propagating *Phaedranthus buccinatorius* usually takes at least three months. I have found from past experience that as long as the cutting callused, roots followed. Leaf droppings should be removed as soon as possible to avoid fungus problems. The average cutting has two to four roots and they are unusually long and brittle. Care should be taken when removing them from the rooting medium to avoid breaking of roots.

In approximately 10 to 12 weeks most of the seven-week callused and non-callused cuttings will root. I have found that 60 to 75% of

Table 1. Effect of source of cutting material and IBA treatment on callusing and rooting of *Phaedranthus buccinatorius*.

IBA Concentration and Dip Time	Callusing Time in Days		Rooting in Weeks		Rooted in 7 Weeks		Callused in 7 Weeks		No Callus in 7 Weeks		Loss		Average Number of Roots		Average Root Length in Inches	
	IN	OUT ²	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1,000 ppm 5 sec.	12	17	6	5	1	14	49	35	25	24	0	2	1	2	2	2.5
5,000 ppm 5 sec.	12	20	5	5	1	11	51	36	20	26	3	2	1	2	1	2
5,000 ppm 10 sec.	12	22	5	5	11	1	36	51	18	19	10	4	1.5	1	2.5	1
10,000 ppm 5 sec.	17	17	6	4	5	12	48	25	22	19	0	24	1	2	2	2.5
10,000 ppm 10 sec.	17	17	5	5	7	6	58	37	10	16	0	16	1	2	3	2
10,000 ppm 30 sec.	12	22	5	6	1	1	61	6	3	3	0	0	2	1	3	2

75 Cuttings used in each treatment

¹In — Indoor-grown cuttings

²Out — Outdoor-grown cuttings

our *Phaedranthus buccinatorius* cuttings root, and feel that this is a good percentage.

These results are summarized in Table 1.

DAVID ADAMS: We have with us now, Dr. Robert Warner from the University of Hawaii. Dr. Warner lived in California for a number of years before he went to Hawaii, but he is now a resident in the Hawaiian Islands for I believe, eleven years. He's been working in quite a wide range of crops, macadamia, bananas, citrus rootstocks, and various nutritional problems. He is also in charge of the instructional arboretum which he tells me will be on the tour for the Western Region Meeting next year. He has some slides showing many of the things we can expect to see next year on the Hawaiian trip. Today he will talk to us about propagation of certain tropical plants. Dr. Warner:

PROPAGATION OF TROPICAL CROP PLANTS¹

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PLANTATION FIELD CROPS

SUGARCANE, *Saccharum officinarum* L., is a member of the grass family and, except when breeding for new varieties, is propagated vegetatively. Cane sections about 22" long with 4 nodes are cut by hand or mechanically from mature plants, soaked in a fungicide and placed horizontally in furrows and covered lightly with soil. Shoots and roots are produced at the nodes. In Hawaii the plant crop (the first after planting) matures in about 22 to 24 months. The cane is cured by withholding water and nitrogen during the last 3 to 6 months.

When ready for harvest, the field is burned to reduce the amount of dead leaves and trash. The stalks are bulldozed into windrows, loaded onto trucks and transported to the mill for grinding. The irrigation furrows are reestablished and the ratoon crops grow from

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