

germination remove the seed coats by mechanical means, or soak seeds in concentrated H<sub>2</sub>SO<sub>4</sub> for one hour then wash thoroughly with tap water. This treatment can give 95 to 98% germination. It is also reported that soaking in 1000 ppm GA hastens germination. Occasionally plants are gathered from the woods, the tap roots cut back and replanted. The root pieces are then used for propagation. The roots should be dipped in Daconil to avoid decay. Florida red scales are major pests. It is hard to transplant coontie plants.

### ACKNOWLEDGEMENTS

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## PROPAGATION AT GREENBRIAR NURSERIES

BILL REESE

Greenbriar Nurseries, Inc.  
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Greenbriar Nurseries was started in 1974 and produces hardy, woody ornamentals on 21 acres in north central Florida. We produce all of our own liners and the procedures used in propagation as well as our costs and method of productivity are described as follows.

We get most of our cuttings from our landscape scheme as well as from our inventory of container material.

The trays we use are approximately 12 in. × 18 in. and we use a 40-cell insert made by Growing Systems. We get approximately 5-yr. use from the tray and 3-yr use from the insert.

Our soil is mixed for us locally and consists of 4 parts native peat, 3 parts composted pine bark, 3 parts Soilite (ex-

panded rock  $\frac{1}{8}$  in. max.) with 3 lbs dolomite per  $\text{yd}^3$  and  $\frac{3}{4}$  lb Micromax/ $\text{yd}^3$ .

We built a fumigation chamber approximately  $8 \times 16 \times 4$  ft and use methyl bromide at the rate of 4 1-lb cans per chamber per treatment. We apply Osmocote (18-6-12) 9-month formula as a top dressing prior to sticking cuttings.

The structures used at Greenbriar Nurseries include a shade house using 30% shade cloth, a poly-covered house, and a full sun area.

One of our more popular plants is "Texas sage", *Leucophyllum frutescens* (*L. texanum*). We take cuttings from plants growing in #3 containers. We take about 4 to 5-inch cuttings on moderately woody stock, which represents current years growth. The best time of year for taking sage cuttings is from June 1 to July 15. Our propagating crew works on cuttings in a shady location. We use the rooting compound, Dip n' Grow, at 0.25% strength, applied as a quick-dip. Dip n' Grow contains the rooting hormones, IBA and NAA. We move rooted liners to a lightly shaded area to harden off for a period of at least 45 days to 6 months until potting time. We apply a granular herbicide, OH-2 by Scotts,\* with an Echo backpack unit.

Now, for the rest of the story. At Greenbriar Nurseries we believe in 3 P's:

### PEOPLE-PRODUCTIVITY-PROFIT

We start with our people. We work closely with our county school system and use vocational agricultural students. Of our 12 full-time employees, 8 worked for us part-time as vo-ag students in high school. We also employ vocational students from our local junior college. Each year we use a University of Florida horticulture student from the University work experience program. Now, how do we take 12 full-time and 12 part-time people and make them highly productive?

Our productivity is measured daily on an individual basis. Each propagator has his own color tag, which is put in each tray he prepares. Daily cutting totals are kept and an average cutting per man-hour is figured. We set an individual goal of 300 units per man-hour. All totals are posted daily and recognition is given to all who exceed the 300 p.m.h. goal. Group rates are posted and recognition is given at our Friday employee lunch meeting. Weekly and monthly production goals are set and posted as well.

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\* Ornamental Herbicide 2 (2% oxyfluorfen, 1% pendimethali), O. M. Scott

We instill pride in our product by giving our propagators a great portion of credit for the quality of the plant material we are selling. Also, all of our full-time people, including our truck drivers, salesmen, and office help, will rotate into our propagating crew to keep up their identification with our product and to maintain a high proficiency of production. Propagation at Greenbriar Nurseries is not looked on as menial work but more as an opportunity to better the product and to insure the ability to make a profit. We have told our full-time employees that we must make a profit, and we want them to share in it also. We budget 2% of our gross sales for a profit-sharing pool. If we make profit — and so far we have — we distribute this, based on productivity of the various groups.

Now for the last P — Profit. Our propagation program is a big contributor to our overall profit. We keep our employees informed of this fact. Our costs of production for this year are as follows: For 500,000 cuttings, our labor costs were \$8,700, which includes taking of cuttings, preparing and sticking, filling trays with soil, and moving them to fumigation areas and to and from the mist area. It also includes maintenance labor for fertilization and herbicide application as well as supervision time. Our material costs were \$6,220 which includes soil, trays and inserts, chemicals, and fertilizers. Total direct costs were \$14,920 for 400,000 liners for a direct cost of \$0.037 per unit. Total indirect costs to propagation were approximately \$17,500 or a cost of \$0.043 per unit. This produces a total cost of \$0.08 per unit for each liner. We build a 10% loss factor into our final cost and the total cost per unit becomes \$0.09.

We feel people are the answer to productivity and profitability problems. We have had excellent results from sharing profits with our employees and making sure they feel they are an important part of the team.