

## GRAFTING LATEX DIPPED SCIONS

JAMES L. MCCONNELL  
*Francis Marion Seed Orchard 1*  
*Moncks Corner, S.C.*

The Francis Marion Seed Orchard is to supply genetically superior pine seed to the National Forests of the Coastal Plain and piedmont region of North Carolina, South Carolina, and Georgia. When completely established, the orchard will contain some 13,000 loblolly, shortleaf, and longleaf ramets. Each year between 6,000 and 7,000 individual grafts are made.

Previously, the grafting of loblolly and shortleaf pine had been done by the conventional pot-graft method. In the fall (usually December) 1-1 and 1-0 rootstock were lifted with a potting tool and

placed in 8-inch metal nursery pots. Grafting was done in February, March, and April using polyethylene bags to keep the scions from drying out following grafting. In addition, a kraft paper bag was used to provide shade. After grafting, the potted grafts were placed in a screen house (55 percent shade) where they remained until field planting time in early summer.

In using this method a problem developed, causing us to seek a better method of grafting. All too often, in the coastal section of South Carolina, where the seed orchard is located, springtime temperatures rise while the humidity remains high. Consequently, the grafted ramets in their polyethylenebags develop bad mold conditions. If not

<sup>1</sup> The Seed Orchard is one of five operated by Region 8 through appropriate National Forest Supervisors offices.



Figure 1.—Dipping the prepared scions in latex solution and placing them on a drying rack.

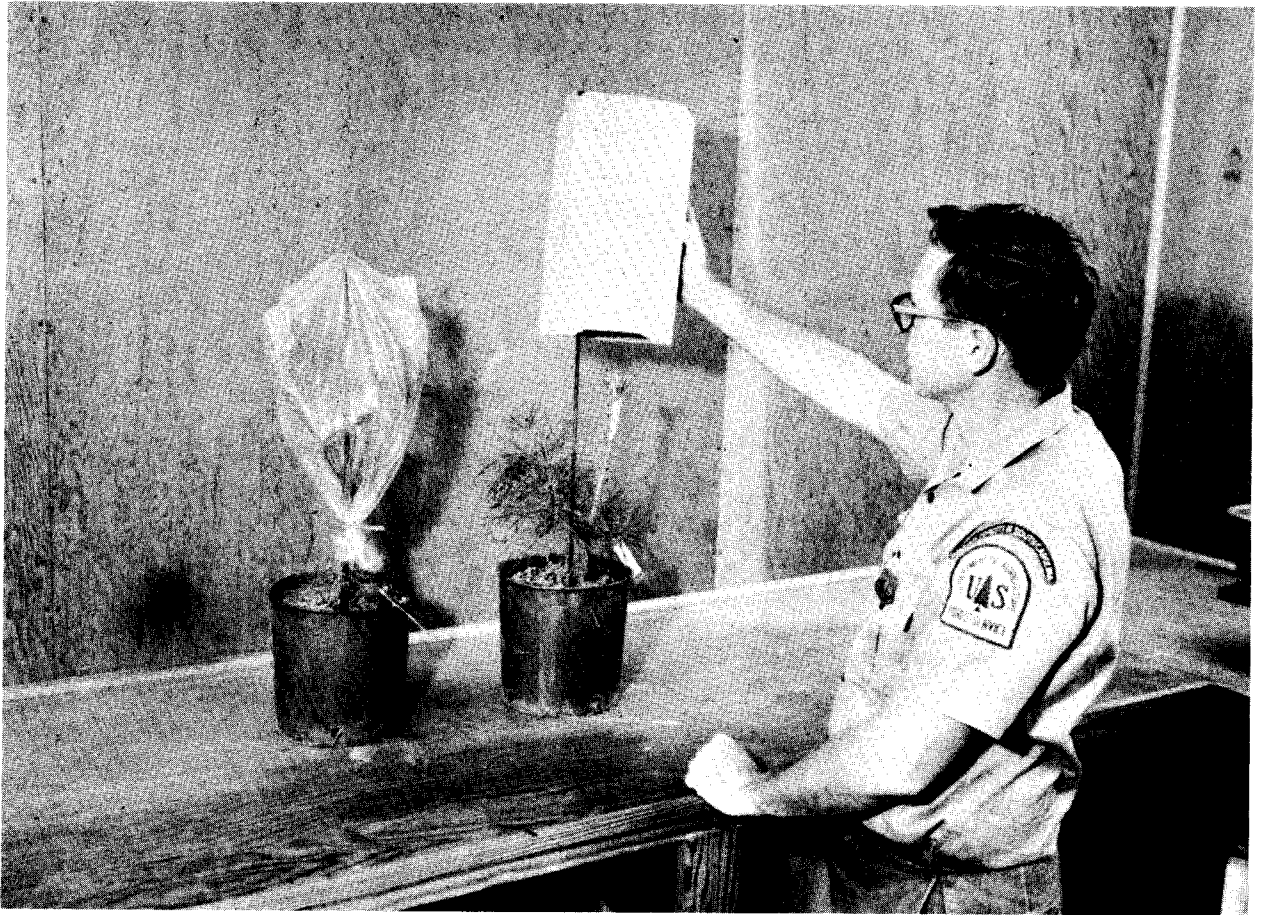


Figure 2.—*Left*: Conventional graft with polyethylene bag covering. An additional kraft paper bag will also be used; *right*: completed latex graft. The kraft paper bag will be the only covering.

corrected almost immediately, the mold causes the new growth on the scion section of the grafted plant to turn black and die. We found that the moldy condition could be corrected by removing the polyethylene and kraft bags for a few hours each day, exposing the grafted scion to the air and sun. But this also subjected the scion to excessive drying conditions. With 5,000 to 7,000 grafted plants in the screen shed, this care proved to be an overwhelming job. Each year several hundred grafted trees were lost because of mold.

For several years, we had studied the feasibility of grafting by utilizing liquid latex as an antidesiccant (fig. 1). Scions from several sources and species were dipped in a 33 percent (one part latex in two parts water) solution of latex (Geon 652, a B. F. Goodrich product). No spreader-sticker was

used. After the solution dried on the scions, they were grafted in a conventional manner, usually a top-left graft. Before dipping, we clipped the scions on the twig end to the approximate length of the wedge cut. All needles were removed except for one or two rows around the bud. Needles were clipped about  $\frac{1}{4}$  inch longer than the bud. The scion was held securely in place with a grafting rubber, and the graft area painted with the latex solution using a small paint brush. Use of the latex eliminated the need for the polyethylene bag. A kraft paper bag, cut at the corners, was used for shade (fig. 2). We tried eliminating the kraft bag, too, but found it was needed. The grafts needed no further attention until growth started. The kraft bag was then taken off. This seems to be the main advantage of using latex in grafting. Care of the plant after grafting is

most important and eliminating the critical timing of bag removal is a big saving in both time and money.

Since we started using latex, we have had no further trouble with mold. Our grafting survival has been as good or better than it was using the polyethylene bag in grafting. Grafting production for the grafters has increased because the scions are ready to graft when the grafter receives them and they are easier to handle. Production varies from 100 to 200 grafts per day of grafting.

We also use the latex solution to spray the potted grafts at outplanting time. The latex, acting as an antidesiccant, keeps the plants from drying out during transplanting. Very few sprayed grafted trees have been lost because of shock of outplanting in the orchard.

#### Literature Cited

- Hitt, R. G.  
1964. Studies on forest tree improvement in Wisconsin.  
Wis. Conserv. Dep. Misc. Res. Rep. 9 (Forestry).