

In very dry weather the four and ten-minute cyclers allow desiccation of the foliage. Humidifiers, such as the Defensor units with automatic controls, have not been tested but should be superior to nozzles operated by timers.

An antitranspirant wax applied to the foliage did not lengthen the life of cuttings.

1/ Some of the work described herein was done in cooperation with Professor C.O. Box, Mississippi State University, while the author was employed by the Mississippi Forestry Commission.

MODERATOR O'ROURKE: We will next have Hans Hess, who you all know, and who has spoken before on grafting. He will give us his method of grafting pine. Mr. Hess.

PINES BY GRAFTING

Hans Hess
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The Program Chairman very kindly allotted me ten minutes to talk on the grafting of Pines. I believe this is about eight minutes more than is necessary to cover this method of production which is rapidly growing extinct.

A few more years experience with mist propagation and some new additions in the field of root inducers and inhibitors and all of us old grafters are going to be without a trade.

There is only one reason for producing Pine Selections by grafting; up to this time no better or cheaper method has been found. What are some of the Pines reproduced by grafting? All of the selections of White Pine, the fastigiata, the pendulous, the globe and dwarf form, the various selections of Scotch Pine and also Swiss Stone Pine. This last Pine can be grown from seed, however, it is a very slow process and the variation in the seedlings is considerable.

The various Pine Selections that are being grafted today are either sports which are quite common among seedlings or the result of witches brooms. For the most part these many types of Pines are not actually new, they have been known for many years but are just now again becoming popular.

The successful grafting of Pines is dependent on several factors. Most important is the selection of a compatible root stock, two needle for two needle varieties, and five needle stocks for five needle scions. Second in importance is a scion which is vigorous and the base wood of which does not exceed two years in age. Older scion wood can be used but the percentage of take generally decreases using this older wood which has less vitality.

A rootstock which has been potted the spring before the grafting season is far better than a fall potted stock. The next factor in order of importance is temperature. Pines are fond of cool temperatures and a range between 60 and 70 degrees in the grafting case generally gives the best results. We have found that a little ventilation of the grafting case during sudden warm spells is preferable to shading, which reduces light intensity.

A side graft has been our most successful method, although a veneer type can also be used. Finished grafts are placed upright in the bench the union covered with sand which is watered lightly to exclude air pockets. A plastic cover is put over the bench during daylight hours and removed at night. The plastic cover is entirely removed when the scions begin to grow, this we find causes the least amount of shock to the newly healed graft. The root stock is reduced by some 50% when the plastic cover is removed and the balance removed as new growth on the scion begins to mature.

Nurserymen graft Pines to reproduce the many types now of such keen interest. Foresters graft Pines to reproduce good seed bearing types, observed in stands of forest plantings. These grafts help increase good seed bearing trees since they begin producing seed much earlier than would a seedling.

A recent article in a Forestry Magazine showed a forester obtaining his scion wood from trees forty feet or taller with the aid of a riffle. This would not be a profitable method for the nurseryman but I can see the advantage to the forester in saving all those steps.

In conclusion, for successful grafting of Pines, spring pot your rootstock, be sure you use compatible scions and stocks, keep your grafts on the cool side and use the most vigorous scion wood available.

Thank you.

MODERATOR O'ROURKE: Mr. Wells, would you prefer to give your paper now or hold it until Friday evening?

MR. JAMES WELLS: As you wish, Steve. It is actually a resume of Mr. Spaan's work which Roy mentioned earlier.

MODERATOR O'ROURKE: Suppose we have your paper now, because it ties right in with the others you have just heard. (Mr. Wells presented the following paper prepared by Mr. John Spaan.)

GRAFTING PINES OUT-OF-DOORS

By John Spaan
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