PIT STORAGE OF BALED LOBLOLLY SEEDLINGS

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In north Mississippi, a study comparing methods of storing baled loblolly seedlings indicated that storage in earth pits is as effective as the rack and cold storage methods recommended earlier.[1]

On January 30, 1959, three standard bales of 1,000 seedlings each were selected at random from a truckload of newly arrived 1 -0 nursery stock. One bale was placed on a rack in a moist cold-storage room with the temperature just above freezing, another on a rack in an unheated shed. The third- bale was buried in a well-drained sandy loam soil on a wooded 28-percent slope with a northern exposure. In the pit, the bale was placed between two layers of leaf litter and covered with about 8 inches of soil. The surface was raked smooth and covered with additional litter to minimize soil washing.

Two more lots of three bales each were similarly stored 2 and 3 weeks later. All bales were thoroughly watered just prior to storage, and those in the shed at 2 - to 3 -day intervals hereafter. Seedlings for each storage period were of the same seed source.

Seedlings from each bale were planted on February 27, following 1, 2, and 4 weeks of storage. The bales were then put back on the racks or in pits until March 13, when more seedlings were removed and planted after 3, 4, and 6 weeks of storage. Planting was on a droughty, eroded abandoned field with a southwest slope. Rainfall during the storage period was about normal but was deficient during each of the first 3 months after planting.

Outplantings for the two dates were on adjacent 36-plot layouts. Each was a completely randomized factorial experiment with four replications of all 9 storage method storage period combinations. The 15- by 15-foot treatment plots contained 25 seedlings planted at a 3- by 3-foot spacing. Seedling heights immediately after planting averaged 0.75 foot for both 900-tree installations.

Results

In October 1959, after the first growing season, survival ranged from 91 to 95 percent, height growth from 0.68 to 0.75 foot. No real differences in either growth or survival could be attributed to method of storage for either the February or March installations.

In both plantings the seedlings stored the shortest time had poorest survival, and in the March planting those stored the longest made the best growth. The differences were statistically significant, but probably were attributable to variation among the lots of seedlings rather than to duration of storage. In any event, the longer periods of storage clearly did not retard first-year performance of the stock.

These results indicate that, under the conditions of this study, baled loblolly seedlings can be stored safely by all three methods for at least 6 weeks. Storage in pits of welldrained, sandy earth appears practical where cold-storage space is limited or shelters with heating and watering facilities are unavailable. The method is cheap and the bales require no care during storage. Quantities for a large planting job can be stored by using farm equipment to prepare the pits and cover the bales.

1 Ursic, S. J. Bale storage effective for loblolly pine seedlings. Jour. Forestry 54: 815-816. 1956.

Soil temperatures during the southern planting season are low, relatively. constant, and seldom below freezing. (At an electrical soil-moisture unit installation within 100 feet of the pits, temperatures at 9, 15, and 21 inches below the soil surface ranged from 42 to 49° F. during the 6-week storage period.) The soils are generally moist and the humidity of the soil atmosphere is both higher and more constant than that above the surface. Poor aeration is a possible disadvantage of pit storage, but the seedlings remained green and fresh throughout the storage period.