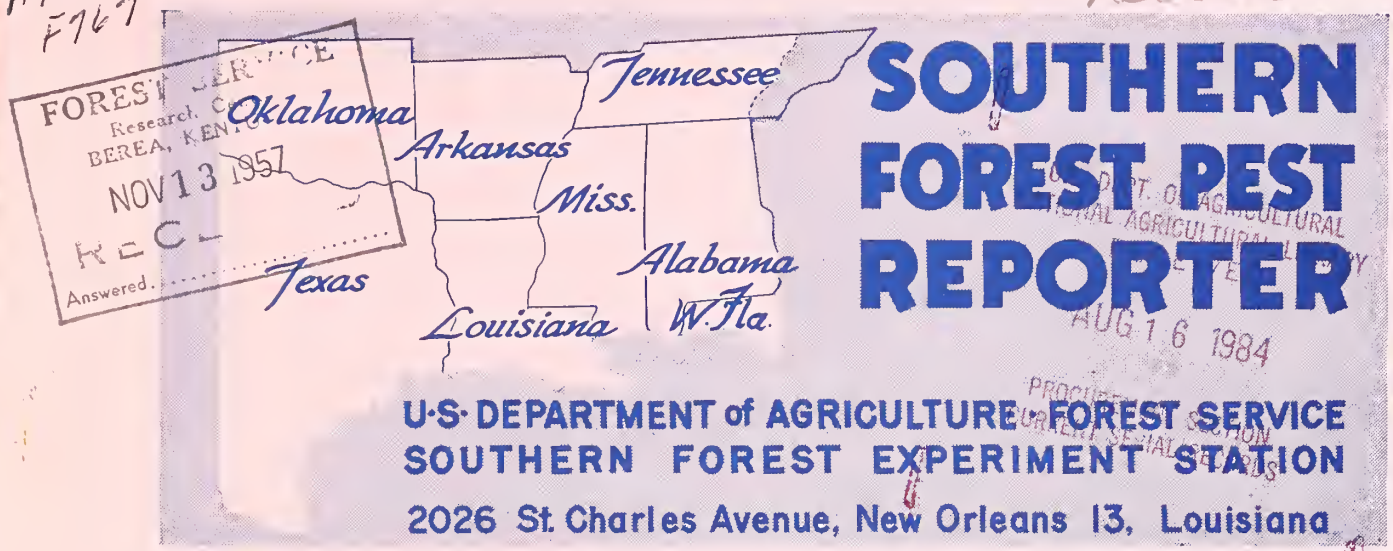

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This issue of the REPORTER summarizes latest information on measures that may be used to avoid losses from reproduction weevils in newly established pine plantations and natural reproduction. Weevil damage is sometimes very severe in areas planted soon after a pine stand is removed by cutting or wildfire. The weevils are attracted to the vicinity of freshly cut stumps or killed trees and then destroy pine seedlings by feeding on their bark and cambium. They breed in the roots of the pine stumps. In the studies reported below, about one-third of the weevils examined were the pales weevil, *Hylobius pales* Hbst. The rest were the so-called pitch-eating weevil, *Pachylobius picivorus* Germ.

PINE REPRODUCTION WEEVILS: PRELIMINARY RESULTS FROM 1955-1957 STUDIES

Robert C. Thatcher

Studies conducted at the East Texas Research Center[1] since August 1955 have suggested practical ways of avoiding damage to pine seedlings by reproduction weevils.

As a result of research on the pales weevil in the Northeastern States some years ago, it has become standard practice in that region to delay pine planting for 2 or 3 years after cutting. In the South, such a delay is undesirable because hardwoods rapidly take over and make the successful planting of pines difficult or impossible.

Rapid deterioration of stumps and roots in the South suggested that their period of attractiveness for weevils might be rather limited. To test this theory, pine plots were cut in January, April, July, and October, and planted the following winter. Two years' results show that in east Texas only minor losses may be expected when at least nine months

[1] Maintained at Nacogdoches, Texas, by the Southern Forest Experiment Station, in cooperation with Stephen F. Austin College.

are allowed to elapse between cutting and planting. When cuts were made in April or earlier, weevils destroyed less than one percent of seedlings planted the following winter. Cuts made in July or August (six months before planting) resulted in moderate losses for loblolly pines--17 percent in 1956 and 6 percent in 1957. On later cuts (October and January) the losses were heavy both years--34 to 58 percent. Similar results were obtained with slash and shortleaf pines, although mortality was somewhat lower for the latter.

This indicates that areas where pines have been cut earlier than the previous May or June may be safely planted in December. Where cutting has occurred more recently--particularly in September or later--heavy losses may be expected.

Pines that seed in naturally are also damaged by weevils, but generally not until they are about a year old. Of some 20,000 seedlings that germinated in the test areas, less than 3 percent were killed by weevils during their first year. One-year-old natural seedlings, however, suffered the same pattern of damage as planted seedlings.

These findings suggest that if regeneration cuts are made concurrently with seedfall, the reproduction should escape with only limited damage during the first year from seed. By the time the seedlings are in their second season, the area should no longer be attractive to the weevils. But where fairly heavy cuts are made in areas supporting one- or two-year-old seedlings, appreciable damage should be anticipated. It may be worth delaying the cut for an additional year to allow the seedlings to reach a size less susceptible to damage.

In some places, the risk of unwanted vegetation taking over the site is so great that it is desirable to plant the area immediately after the old stand is cut. Such planting can be done if the tops of the seedlings are dipped in a chemical that will kill weevils.

In the Texas tests, dipping the tops of planting stock in a 1.0 percent water suspension of BHC reduced the number of attacks by 62 percent and reduced seedling mortality 92 percent. An emulsion of 1.0 percent aldrin in water reduced attacks 34 percent and seedling mortality 88 percent.

In using these chemicals as top dips care should be taken to prevent excessive amounts from draining to the root system. Either chemical may cause severe growth reduction if applied directly on roots. Neither caused any damage when applied only to above-ground parts of seedlings.

Both aldrin and BHC are poisons, and must be handled as such. Seedlings should be treated outdoors. Planting crews should wear rubber gloves while handling treated seedlings, and should wash thoroughly before smoking or eating.