

# Repellent-Coated Pine Seed Can Be Stored

By J. P. BARNETT and B. F. McLEMORE

*Southern Forest Experiment Station, U.S. Forest Service*

Southern pine seeds coated with repellents can be stored for at least a year, even after stratification, without losing viability or becoming dormant. Moreover, the full effectiveness of the repellent coatings is retained.

These findings were obtained in a study at Alexandria, Louisiana, with seed of longleaf, slash, loblolly, and shortleaf pines. They will be helpful to landowners who direct-seed because it is often necessary to store stratified, repellent-coated seed for several weeks when bad weather delays operations. Occasionally, treated seed must be stored a full year.

## The Study

A single seed lot was used for each species in all phases of the study. Each lot was divided into sublots to compare the effects of storage at 25 degrees and 34 degrees Fahrenheit; to determine the need for drying stratified seed before storage; to learn if dried, repellent-coated seed could be re-stratified after storage; and to evaluate the potency of endrin in repellent coatings after storage. Repellent coatings

were either Arasan-75 and endrin or Arasan 42-S and endrin. The moisture content of seeds varied from 8 percent for dried seeds to 35 percent for undried stratified seeds. Germination tests were made on samples stored 45, 90, 180 and 360 days.

## Results

Seeds of all species germinated remarkably well after one year. The only serious deterioration occurred when moist seeds were stored at 34 degrees. At 25 degrees high viability was retained regardless of seed moisture content, repellent coating, or stratification.

Storage affected dormancy more than germinability. Unstratified loblolly and shortleaf seeds were most dormant, and stratification greatly hastened their germination. Upon drying, stratified seeds of these species became slightly dormant again, and their dormancy increased during the year of storage. Dormancy of stratified seeds did not increase when they were stored moist.

The slash seed lot was relatively non-

dormant and stratification was ineffective in speeding germination. Storage did not increase dormancy of slash or longleaf seeds.

## Recommendations

The study indicates that the seed user has two choices: he may dry the seeds and store them at 34 degrees, or leave them moist and store them at 25 degrees. However, when large quantities of seed and therefore large quantities of money are involved, a margin of safety is needed. We therefore recommend the following for storing seed one year:

1. Repellent-coated, stratified loblolly and shortleaf seed should be stored at 25 degrees without drying. Re-stratification is unnecessary. Drying would provide safer storage but would necessitate re-stratification, which is risky with large quantities of repellent-coated seed.
2. Stratified but uncoated loblolly and shortleaf seeds should be dried to 10 percent moisture and stored at 25 degrees. They should be re-stratified after storage.
3. Stratified slash seed, whether coated or uncoated, should be dried to 10 percent moisture and stored at 25 degrees. Re-stratification is unnecessary.
4. Unstratified, repellent-coated slash and longleaf seed should be stored at 10 percent moisture and 25 degrees. Moisture is absorbed during the treating process, so even though the seeds have not been stratified they require drying.

Weaker seeds may not store as well as the ones used in this study, but we believe all lots may be stored up to 90 days at 25 degrees without being dried or re-stratified. Seeds with more than 25 percent moisture content should not be stored at extremely low temperatures because they may be more subject to damage at 0 degrees, for example, than at 25 degrees.

There was no deterioration of endrin during storage, and Arasan is known to be stable. Thus landowners can sow stored seeds without renewing the repellent coating.

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