

# WATER CONTENT AND COST OF STRATIFIED SEED RELATED

LeRoy Jones  
Eastern Tree Seed Laboratory <sup>1</sup>  
Macon, Ga.

It is sometimes necessary to buy stratified seed that has not been weighed before stratification. What should the stratified seed cost per pound when the price per pound of dry seed is known?

$$\text{Weight of seed before stratification} = \text{weight of stratified seed lot}$$

$$\times \frac{\text{Moisture content of seed prior to stratification} + 1.00}{\text{moisture content of stratified seed} + 1.00}$$

## Water Content of Stratified Seed

Much of the weight of stratified seed consists of water absorbed during stratification. The Eastern Tree Seed Laboratory has determined the moisture content of 28 loblolly and 31 slash pine seed lots after standard 30-day wet-moss stratification. At the 5 percent level of confidence, the average moisture content, as determined by the oven-dry weight method, was 29.34 ± 0.71 and 38.58 ± 1.86 percent for loblolly pine and slash pine, respectively. Moisture content percentages were 26.50 to 33.85 for loblolly and 33.13 to 53.46 for slash. Comparison of stratified slash pine seed lots with low (below 70 percent) and high (above 70 percent) germination showed that the moisture content of seed with low germination ability was higher. A statistical analysis of the data showed one standard deviation from the mean to be 1.86 for loblolly and 5.07 for slash.

If moisture content prior to stratification is not known, a value of 8 percent is used. This is approximately the moisture content of seed after extraction, and seed much wetter will not keep. If the moisture content of a sample lot of stratified seed cannot be determined, use average moisture content (for example, 29.34 percent for loblolly).

Assume a seed lot weighs 256 pounds after stratification, has a moisture content of 29.67 percent after stratification, and had a moisture content of 8 percent before stratification. The weight of the seed before stratification is then determined as follows:

The significance of this formula can best be

$$256 \text{ lb.} \times \frac{0.08 + 1}{0.2967 + 1} \text{ or } 256 \text{ lb.} \times \frac{1.08}{1.2967} = 213.2 \text{ lb.}$$

illustrated by comparing costs of the seedlot before and after stratification. If the standard price of seed is \$4.50 per pound and an adjustment was not made on the stratified seed, the cost would be \$1,152; if adjusted, it would be \$959.40. The difference is \$192.60!

## Development and Application of Formula

To calculate the weight of seed before stratification from its stratified weight, we have developed the formula:

### Summary

A buyer purchasing stratified loblolly or slash pine seed should request a price adjustment if the original weight of the seedlot is not known. The charges for stratification and treating with repellents can be added to the original seed cost.

<sup>1</sup> Operated in cooperation with Region 8 and the Southeastern Forest Experiment Station. U.S. Forest Service; Georgia Forestry Commission; and Georgia Forest Research Council.