

SPECIAL PROBLEMS IN GROWING SEED ORCHARD SEEDLINGS

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The South's third forest has been born!! The forest geneticist may be the father and the seed orchard manager the mother but the forest nurseryman is certainly the midwife and a very important member of the team. Now that we have the new infant in hand we must make sure it grows into a strong, true child, adolescent and adult.

This seed orchard seed is a special child and special care must be taken in growing the seed orchard seedlings.

Phil Wakeley said, several years ago, "In the last analysis, many of what appear to be planting problems really originate in the nursery, and that many of what appear to be nursery problems are really traceable to seed treatment".

What are some of the special problems in growing seed orchard seedlings?

Seed	<u>Growing Seedlings</u>
More seedlots	Faster Growth
Smaller seed lots	Larger Seedlings
Seed size	Irrigation and Fertilization
Quality of the seed	Root pruning
	Insect and disease control
<u>Sowing Seed</u>	<u>Lifting and Storage</u>
Mixed lots or by clone	Maintaining identity
Labeling	Labeling seedlings
Buffer strips within a seed bed	Packaging
Seedling density	
<u>Personnel</u>	<u>Costs</u>
Training	More or less

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REPORT ON WORKSHOP SESSION I d.

A lively discussion resulted in both workshop sessions. Some of the major points brought out in the workshop sessions are listed below:

At least one company, Weyerhaeuser, collects seed by clone, sows the nursery beds by clone, lifts seedlings by clone and plants the seedlings in the field by clone. This practice is being used operationally, in order to extract from each orchard clone its potential for performing in the field without interference from more or less vigorous families. Research studies indicate that by submitting seedlings to competition from within the family only, a net increase in volume of wood produced from all families will be realized.

Generally, seed orchard seed is larger than wild collected seed. Size does vary by clone. Sizing bulk collected seed orchards seed may result in a clonal separation.

Speed of germination in the seed bed is very clonal.

The quality of seed collected from young seed orchards is usually low.

Several organizations extracted seed from seed orchard cones twice. The germination of the second extraction is usually 10 to 20% lower than the first extraction. Enough seed is gathered from the second extraction to more than pay for the process.

Most nurserymen plant for a density of 25 to 30 seedlings per square foot in the nursery beds with seed orchard seed. Obtaining the desired density has been difficult because of the quality of seed orchard seed lots. Seed tests from the Eastern Tree Seed Lab in Macon has shown that the full seed germination of seed orchard seed is high. Relating the germination percent to bed germination and survival has been difficult. As more and more seed orchard seed is used in the nurseries this problem should become less difficult.

Personnel management in the nursery has become more complex with the increased use of seed orchard material. The quality of nursery workers must go up.

It was suggested that seed orchard seed be collected and sown by clone and then mixed as the seedlings are lifted and sent to the field for planting.

WEYERHAEUSER COMPANY CREDIT CARD /SYMBOL SYSTEM

This system of documenting the sowing of seed and thence tracking of seedlings through the plantation affords one an opportunity to accurately identify a clone throughout the time from seed production to final harvest in the plantation.

The system is comprised of a colored symbol (example: Red Circle) and a "credit card" style identification card, containing data pertaining to the clone. The symbol is associated with a clone number and will always remain the same for that clone. This same symbol, however, may be used again in later years for other clones.

The credit card should contain the clone number, a description of the symbol associated with that clone (example:Red Circle), and any other information that the nurseryman considers important, relative to that clone. This card, along with the proper symbol can be inserted into a waterproof bag, attached to a wire or stake, and placed at the beginning and end of the seedlot in the nursery bed. At lifting time, this information would be carried to the grading and packing area and serve as an identifier for packing. A rubber stamp displaying the symbol and the clone number can then be used to affix this information to the bag or wrapper of each bundle of seedlings from this clone. Inventories can be recorded in the seedling storage area, using this same symbol. As orders are received for these clones, they can be shipped accordingly. Field "Setting Reports" can then be made, reflecting where on the setting each clone was used. This information may then be kept as a permanent record of clones that were used in the plantation establishment, with performance being recorded accordingly, if desired.