

CONTAINERS USED FOR TREE GENETICS AND BREEDING

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ADVANTAGES OF CONTAINERS

The use of containers permits:

- optimal yields from scarce and expensive seed;
- easy, error-free application of statistical designs;
- precise labelling and identification of up to several hundreds of seedlots and many thousands of seedlings from sowing to field planting (Fig. 1);
- provision of uniform and optimal cultural environments for both root and shoot;
- ease of plant replacement, rearrangement or rejection (Fig. 2);
- stock portability with no root disturbance and minimal top damage;
- rapid seedling growth with consequent reduction in time to reach specified size for field planting;
- ease of storage, e.g., in a refrigerated room to maintain dormancy;
- economy, accuracy and effectiveness in field establishment of complex test plantations and seedling seed orchards.



Figure 1. Precise labelling of many seedlots is made easier by the use of containers.

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DISADVANTAGES OF CONTAINERS

- root penetration from cell to cell in paperpots and peat pots when grown too long;
- container breakdown, and inflexibility with number and arrangement in paperpots;
- in certain soils paperpots maintain their integrity long after planting, and this may result in root deformation;
- smooth-walled, round plastic containers induce unsatisfactory root systems;
- styrofoam containers permit root penetration and make it difficult to extract the plant from the container;
- precautions must be taken to prevent rodent damage to overwintering stock.

CONTAINER PREFERENCE

The containers routinely used at Petawawa are sharply ridged with good basal drainage that induces good air-pruning of the root ends. They range from sets of five cavities to single 15-cm square plastic pots. The size used depends on the species, the duration of culture in the containers, the required size of plant and the purpose for which it is grown. Spencer-Lemaire "Rootainers" suit most purposes very well in the raising of stock for progeny tests and for seedling seed orchards. Larger single pots are preferred for growing root stock plants for grafting.



Figure 2. Transferring plugs to ensure complete stocking.