

point hitch. On the platform a boom is attached which covers three beds. We spray a Diazanon-Tedion mixture if we suspect aphids and red spider are present. In June we start pruning the junipers heavily for the first time. In August we go through the beds again for a light pinching to secure good, dense, two-year liners of the 10 to 18 inch sizes. In winter we do our digging with a heavy, undercut, type digger, the sort which is extensively used in forestry nurseries. It is a blade which is moved by the power take-off and the plants are lifted out of the soil by bent-up steel bars.

Plants so propagated are excellent for putting in large containers for growing as specimen trees.

MODERATOR MAIRE: Thank you, Walter. Now Mr. Lloyd Smith of Pitt Meadows, B. C. will speak to us on container production of large trees. Mr. Smith:

### CONTAINER PRODUCTION OF LARGE TREES

LLOYD SMITH

*Pitt Meadows, British Columbia*

In this discussion of large trees, we shall be referring to trees of two-inch caliper and larger. Smaller trees are easily handled bare-root in the dormant season and we are all familiar with container-grown trees in sizes from 5 to 15 gallon. The successful moving of very large trees, either bare-root or balled and burlaped, during the dormant season, has been done for many years, so that we are not entering a new field. The increasing demand for large trees available for landscape development at all seasons of the year, prompted me to include large container-grown trees in my operation.

Perhaps, "Establishing Large Trees In Containers," would be a better title, as most of our large trees are field-grown first. However, as nursery stock planted in containers and grown for one or more seasons qualifies as "container-grown", our title may still be applicable.

Our containers are constructed from one-inch rough cedar lumber, metal-banded collapsible boxes. Loose bottoms drop in and are supported by cleats fastened to the bottom of the side pieces, and by the taper of the box. We find one-inch lumber adequate for boxes up to 36 inches in diameter. For larger boxes we use two-inch lumber. For a few very large trees we have used four-inch decking. Collapsible boxes are easily stored and quickly assembled as used. Special tools for tightening the bands are readily available.

Containers must be large enough for good root development. The rule-of-thumb we have been using is a one-foot diameter container for each inch diameter of tree.

|                    |         |
|--------------------|---------|
| 2" — 2½" cal. tree | 24" box |
| 2½" — 3" cal. tree | 30" box |
| 3" — 3½" cal. tree | 36" box |

The planting medium we use is a U. C. type soil mix; 50% sand and 50% peat. The fertilizer incorporated in this mix is formula I (C), which supplies phosphate and potash with a moderate amount of nitrogen. This has given us excellent root development but does require supplemental feeding.

Trees planted in containers during the winter months—or early spring—are fed after good root action has commenced, or about the time new leaves are forming. We feed a balanced dry fertilizer and water it in. Soil mixes and fertilizer formulas are taken from the University of California Manual 23, "U. C. System For Producing Healthy Container Grown Plants". (Available for \$1.00 from Agricultural Publications, Univ. of California, Berkeley).

A lighter mix would have some advantages. We have been thinking of using bark, and intend to work with it next spring.

Insect pests on container trees have been easily controlled with the use of granular Di-Syston applied in the early spring. Due to the limited root area, less material need be used than would normally be required for the same sized tree in the field.

Watering large trees in containers is one of the greatest problems. We found sprinklers unsatisfactory and have done it all by hand. Large, boxed trees use a lot of water on a hot, windy day. Our schedule is to water heavily by hand every day during hot weather, skip a day on some material during cooler weather, then twice a week later in the fall when the trees are becoming dormant, then occasionally, during the winter as the weather indicates. An automatic system of tubes with individual spray heads for every box, calibrated to the size of the box would certainly reduce the cost of hand labour, but I doubt would do as good a job as a skilled "water girl".

Containers up to 24-inch in diameter are moved and loaded by two men; larger ones, up to 36-inch diameter, we lift with the front-end loader of an ordinary farm tractor. Larger boxes require heavy equipment for moving and loading.

The successful production of good container trees requires careful attention to a number of factors.

- (a) Use only healthy trees with a good root system—trees that have been carefully grown and root pruned during their development — or — container-grown trees that have been regularly moved upward in container sizes to avoid cramped or girdled roots.
- (b) Always use adequate container size for proper root development.
- (c) Provide careful watering at all times so that the tree never dries out or even suffers from lack of water.

- (d) Grow the tree in the container for one growing season, or a minimum of three months, before moving it onto a job.
- (e) Never grow a tree more than two years, or two growing seasons, before moving it to a larger container.

There is no limit to the size of a tree that can be boxed and moved; limitations are with equipment, restrictions with overhead wires, or the willingness for someone to pay the cost. Trees up to five- and six-inch caliper present no great problem in boxing and delivering on the site.