

## Container Tree and Shrub Propagation and Production in Oklahoma

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Container tree and shrub propagation in Oklahoma is a broad topic, so I will describe several techniques we use that might be of interest, plus some general topics such as spacing and potting media.

### TREE PROPAGATION AND PRODUCTION

**Grafting.** We produce ash in no. 5 and no. 10 containers. We found that a barefoot liner for a no. 5 had too large a root system to fit in the container, so we had to look for an alternative.

The method we chose was to bench graft the ash in February using scion wood with a terminal bud. After grafting, the liner is potted in a bottomless 4-in. container and placed on a wire bench. The graft union is then covered with ground pine bark. Callusing takes place on the bench.

The liner is removed from the greenhouse in late April to early May and potted in a no. 2 container. The liner remains in this no. 2 container until late fall or early spring and is then shifted to a no. 5 container.

The no. 10 ash is different. A finished product of 1 1/4 in. with branching is required, so we grow these liners in the field for two years and then dig them bareroot and transplant to a no. 10 container where they are grown for one more year.

We use a similar method for producing a no. 5 ornamental pear and ornamental plum. We bench graft both these items starting in January. We use scion wood with a terminal bud for the pears. This type of wood is not available for the ornamental plum, so we staple a strip of paper around the scion when the graft is planted so the shoot will grow straight.

After the grafts are made, they are placed in bundles of 25 and hot callused in a waxed chicken box packed in shingle tow. This hot callusing takes 5 to 10 days.

When a good callus has formed at the union, the grafts are removed from the boxes and potted in 4-in. bottomless containers placed on a wire bench in a greenhouse and the graft union covered with ground pine bark.

The grafts are removed from the greenhouse in late April or early May and transplanted to a no. 2 container.

**Tissue Culture.** This is becoming a more important part of our production process. The plants we produce from tissue culture are: 'Heritage' birch, selected crab-apples, kwansan cherry, French lilacs, 'Autumn Blaze' and 'Red Sunset' maple. All these plants are purchased from Microplant Nurseries, Inc.<sup>1</sup> The Heritage birch and French lilacs are purchased as microcuttings and all others are rooted.

When the tissue culture plants are received in March, they are hardened off or rooted inside a plastic tent inside a greenhouse. The "tent" is placed over a wire

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<sup>1</sup> Microplant Nurseries, Inc., 13357 Portland Road N E, Gervais, Oregon, 97026, phone 503-792-3969

bench and the plants dibbled into 2-in. square bottomless containers. The rooted plantlets take about one week to harden off, then the tent is removed. The unrooted cultures take 10 to 14 days to root, before the tent is removed.

All cultivars except French lilacs and 'Heritage' birch are transplanted to a no. 2 container in late April to early May. Shade structures are used for all crabapples and maples.

The 'Heritage' birch and French lilacs remain in the propagation area. As they produce a flush of growth, the new growth is removed and re-stuck inside one of the tent structures. This allows us to build the numbers more cost effectively. These plants are transplanted to no. 2 containers the following spring.

**Seedling Production.** All trees that we can grow from seed we start in 4-in. bottomless containers placed in trays on a wire bench four to five inches above the ground. With the exception of the larger dogwoods and redbuds all other 4-in. seedlings are transplanted to no. 2 containers the following spring. The larger dogwood and redbud are transplanted to no. 5 containers.

## **DECIDUOUS SHRUB PROPAGATION AND PRODUCTION**

We produce shrubs in no. 2 and no. 5 containers. These are rooted from softwood cuttings stuck in bottomless containers on wire benches and transplanted to no. 2 containers the following spring. Some are lined out in the field to grow on and are then dug bareroot and planted in no. 5 containers.

## **EQUIPMENT**

Every container-tree nursery with overhead irrigation needs a mist blower. The second priority is a mechanized planting machine.

## **GROWING MEDIUM**

The mix we use consists of 40% hardwood bark and 60% pine bark. The pine bark is used fresh off the log; the hardwood is composted for six weeks, turned every 10 days. Seven pounds of 34-0-0 fertilizer is added to the hardwood to assist in the composting. We also add 20% ground pine to the hardwood at the time of composting.

The trace elements and other ingredients are added at the time of planting. To each cubic yard we add 1 lb Dursban, 1.5 lb magnesium oxide (58%); 1.5 lb 0-46-0; 2 lb iron sulphate (not black); 2 lb sulphur; 3 oz frit trace elements, #504 HF; 8 1/3 lb 24-5-8 High N from Sierra.

## **SPACING**

We use two widths center-to-center, 17 and 24 in. On both widths the trees are offset. However the trees on 17-in. centers are grown on a bed system with a 24-in. aisle. This coming year we plan to switch to a 20-in. bed system.

## **OVERWINTERING**

We move all our salable plants off of the main growing areas to a shipping area during the winter. In this location the plants are pushed can to can and covered with a layer of straw. Some items we overwinter inside stacked three deep.