

Oak Propagation from Start to Finish

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INTRODUCTION

Possibility Place Nursery was started in 1978 at which time we started to grow native and typical horticultural plant material. Five years later (1982) I decided to eliminate almost all typical nursery stock and concentrate on native woody plants of which oaks would comprise a large percentage of the trees (eight species). I realized the current growing methods would not work. Fortunately a gentleman in Oklahoma named Carl Whitcomb devised a system of growing bottomless containers to grow bags. I have taken much of Carl's system and modified it to our needs.

SEED PROPAGATION

Seed Collection. I collect nine oak species within 150 to 200 miles of the nursery. The trees that are collected from have typical characteristics of that species. First I check for weevils by cutting 5 to 10 of them open. If they are weevil infested I do not collect them. If the seed is good, I get my rake and shovel and start in.

Seed Storage. Oak seed is immediately processed by putting them in moistened soilless mix of peat and pine bark. The flats are then stacked on pallets in the shade outside until threat of serious frost. They are then moved into an unheated insulated seed house and stacked against the wall. Stacking of the flats reduces varmint damage (mice, rats, squirrels, and blue jays). I also use poison, such as Decon, but I prefer mouse and rat traps as well as "stickum" traps.

Greenhouse Propagation. In the first week in March or when the boiler decides to work, the seed flats are brought out of storage. The flats are placed on bottom-heated benches made of hardware cloth. Heat is set at 70F. Ten to sixteen days later the oak acorns germinate. I like to transplant before they get their first leaves. The acorns are then transplanted into bottomless containers with soilless mix. The mix is peat, perlite, and pine bark (1 : 1 : 3, by volume) with fertilizers Osmocote 18N-6P₂O₅-12K₂O with Micro Max added. Irrigation is by a mist system. We tried other systems and always had difficulty in getting good water distribution.

Culling which is very important in the production of uniform plants begins with seed germination. Any seedling that does not look like the norm is eliminated. It is cheaper to cull now than to cull in the field.

Container Growing. In early June, depending on the weather, we move the bottomless-container seedlings to mechanical air-pruning 1-gal containers. The same soilless mix and fertilizers are used as in the greenhouse. The containers are spaced 6 to 8 in. apart to allow the plants room to grow. They are also placed on plastic which helps to control weeds and prevents roots from growing into the gravel. I do use the herbicide Treflan at the recommended rates on the containers. Irrigation is supplied overhead on an as-needed basis. Culling is again paramount and 20% to 30% of the bottomless containers are discarded at this stage.

Field Growing. Our growing fields are tilled before use and checked for fertility, then fertilizer is applied according to the recommendations. The field is plowed in the fall and then chiseled plowed and disked in the spring. Lastly irrigation lines are put in for drip irrigation. Once the field is ready, root bags are installed. We have used root bags since their inception and have gone through seven different fabrics trying to get the best one—now I believe we are very close to the right fabric. We began using 22-in. bags, but have changed to 18-in. bags. Our market is 1.5- to 2.5-in. caliper trees and 18-in. bags provide a generous medium volume for good growth. The trees are field planted in September. They are immediately watered and then watered on an as-needed basis until the first week in October. We cull again before the trees go to the field. Usually 20% of the trees never leave the 1-gal containers.

Harvest. Trees are ready to be harvested at 1.5-in. caliper 5 years after they are planted in the field. Harvesting is done with a skid steer and Hawk bucket. We place the trees and shrubs on pallets before loading them on to wagons in the field. The plants are then brought to the holding yard. The best trees are those loaded on somebody's truck and I have the money in hand.

CONCLUSION

The objective in growing oaks is to have a tree that not only survives but flourishes in the customer's yard. This can be accomplished only if we work diligently on our growing methods and just as diligently if not more on education of the public on selection, placement, and care of their trees. The consumer must have success with oaks or the oaks will never become a popular tree in our landscape.

JOHN WILD: Are you doing work with mycorrhizal fungi?

CONNOR SHAW: No we are not.

DEB MCCOWN: What conditions are you culling for?

CONNOR SHAW: Our background is forestry and we are looking for the best growth but we prefer diameter over height. We are looking for the norm and eliminate runts as soon as they become apparent.

CLAYTON FULLER: You are potting your oak in a round hole in a round container. Have you looked at the roots after a number of years to see how they are growing.

CONNOR SHAW: The reason we went to this fabric was that it was made to allow the roots to penetrate it but cuts down on the diameter of the roots that go through it. Other fabrics we tried did allow some circling of the roots. Therefore, you obtain good penetration into the surrounding soil.