FLORIDA OLIVE COUNCIL, LAA
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Olive Propagation

The olive (Olea europaea) can be propagated using several methods. These methods include propagation from seedling, rooted stem cutting, rooted hardwood cutting, rooted truncheon, rooted ovuli and suckers.

Propagation of Olives by Seedling

Many cultivated olives will grow from the seed or pit of the olive under the right conditions. However, We have been asked if the pit of an olive in a jar of brined olives can be grown. The answer is *no*; the pit has been killed by the brine.

Growing an olive from fresh olives is usually a frustrating experience as very few germinate; but a tree dropping thousands of olives over hundreds of years will produce seedlings. However, trees grown from seeds have some interesting characteristics.

The taproot goes straight down so the tree is very drought resistant. That also means that it cannot take advantage of surface irrigation so typically grows slowly and produces fruit much later than trees grown by other means. It can also attain great height depending on the variety. That is a bad trait in trees grown in orchards where dwarf trees are preferred for easy picking.

Oddly, the tree and fruit from which grow from the seed will not always resemble the tree it came from. Olive pollen can drift for hundreds of miles and olives easily hybridize with other varieties. To get an exact replica of an olive tree, you must use cuttings or truncheons.

Propagation of Olives by Rooted Stem Cutting

Mist propagation of cuttings is one of the best ways to propagate many olive cultivars. Being a subtropical plant, the roots and shoots of olive trees grow rapidly during late spring and early summer when soil moisture is relatively high, soil temperatures are warm (above 70°F. and air temperatures are not excessively hot (85-95°F.).

Towards the end of this rapid growth (late June, early July) is the prime time to take cuttings. Wood should be collected from vigorously growing trees, and kept cool until propagated.

Pre-trim the cuttings and place in plastic bags with moist sawdust, and process the material as cuttings as soon as possible. It is possible to keep the wood for several days under refrigeration without any problems. Semi-hardwood cuttings are selected from healthy branches, cutting pieces about 1/4 to 1/2 inch in diameter, and 4 to 6 inches long, with the lower leaves removed, and 2 to 4 sets of leaves remaining.

Some propagators will "wound" the lower portion of the stem, making slight cuts with a sharp object, and then use either a hormone powder or concentrated chemical dip to help induce rooting. Some experience suggests quick dips of 3,000 ppm indole butyric acid (IBA) have worked well for many of the olive oil cultivars, such as: *Lucca*, *Frantoio*, *Moraiolo*, *Mission* and *Piqual*.

For hard to propagate cultivars, hormone powders such as Root Tone #40 should be chosen. Experience suggests tip cuttings can be rooted, but only propagate those when material is very limited and precious, as often, the wood is not mature enough to root. Some cultivars are just difficult to root, such as *Sevillano*. A successful rooting rate of 20% would be high for this cultivar, while many of the others are as high as 90%.

Sterile rooting media should be used in standard nursery flats. A common propagation mix is 90% perlite and 10% peat moss. Standard nursery flats can often hold up to 70 cuttings without much difficulty. Some propagators like to place cuttings in trays that keep root systems separate, as they find that subsequent transplanting is easier and less transplant shock means these trees grow more rapidly when placed in one gallon containers.

Intermittent mist and bottom heat are critical for success in rooting olive tree cuttings. The "artificial leaf" controller for a pressurized misting system is very effective. The controller consists of a rectangular piece of fine metal mesh on a counterbalanced metallic lever that rises as it dries,

activating a mercury switch that energizes an electric solenoid to turn on the misting system valve. When wetted, the screen becomes heavy, traveling down, causing the mercury switch to shut off, closing the solenoid, stopping the mist.

The entire cycle usually lasts about 5 seconds, occurring as frequently as every 3 minutes under hot conditions, or as infrequently as once every few hours during cooler conditions.

Many propagators believe this to be the best system available. For small systems electric heating cables buried beneath a thin (one inch) layer of gravel controlled by an adjustable thermostat is quite effective. Bottom heat of 75 degrees F. is usually very helpful in getting the cuttings to root rapidly.

The cuttings should be placed in a shaded area in a greenhouse or propagating structure, and not exposed to direct intense sunlight, as this often causes desiccation. Air temperature up to 90°F. is acceptable. Temperatures below 70°F. often result in slow or poor rooting.

Under normal conditions, rooting becomes obvious after about 45 days, but may continue for up to six months or longer (since olive trees can live for hundreds of years, they are in no hurry!) When several healthy white roots are present, you can transplant into bigger containers. If the young rootings are going to be kept in a greenhouse, some growers will transplant into smaller containers such as rose pots (about 2 inches square,) and move into one-gallon containers when the weather is better the following spring. Young trees need to be protected from heavy frosts, and dry, cold weather

Propagation of Olives by Rooted Hardwood Cuttings

Just prior to warm spring weather hardwood cuttings can be made from 2 or 3 year old wood about one inch in diameter and 8 to 12 inches long. All leaves are removed. Soaking the ends of the cuttings in a hormone solution, followed by storage in moist sawdust at 70°F. for a month or so to help induce callus formation. Cuttings are then placed in the nursery to root, often being lined out in well worked, friable soil.

The cuttings should be mostly buried, and kept moist but not wet. Rooting will occur over several months. Trees are then dug bare root and containerized or planted into the orchard.

Propagation of Olives by Rooted Truncheon

The truncheon system is also used as a low-tech system for olive tree propagation. Limbs 3 or 4 inches in diameter are removed from trees and cut into 12 inch pieces, and then planted horizontally in soft, well-tilled friable soil. Usually several shoots with an accompanying root system will grow. They can be separated, and grown for another year before being planted in the orchard.

Propagation of Olives by Rooted Ovuli

Swellings found on the trunk of the olive tree, known as "ovuli", can be cut off and planted in early spring. These structures contain both adventitious root initials and dormant buds so that new root and shoot systems can develop. This practice is damaging to the parent tree, and is not used very often in the US, but is used in other parts of the world.

Propagation of Olives by Suckers

Finally, suckers with a small piece of root can be removed from the trunk of the tree or harvested from roots in the spring and grown in the nursery for a year before planting into the orchard. These suckers have the advantage of having root cells already established at the base of the cutting, speeding plant development.

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