



LEWIS A. MORAN REFORESTATION CENTER

COLLECTING AND SOWING ACORNS
FOR
CALIFORNIA'S NATIVE OAKS



Lewis A. Moran Reforestation Center

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ACORN COLLECTION

The best time to collect acorns is late summer to early fall, when they begin to turn color from green to brown and some start to fall from the trees.

Acorns can be collected directly from the tree or from the ground beneath. The healthiest acorns are generally those picked from the tree.

WHAT TO LOOK FOR IN AN ACORN

Germination and vigor of seedlings grown from very small acorns tend to be lower than those from large, plump acorns.

Do not collect acorns with a sharp demarcation of change of color (dark brown to green).

COLLECTING ACORNS FROM THE TREE

Acorns picked from the tree can be hand-picked or knocked to the ground with poles, PVC pipes, or by shaking branches. A tarp laid under the tree canopy makes collecting the acorns much easier.

When picking acorns off the tree, the acorn cap should be easily removed from the acorn. If not, the seed is not quite ripe. Wait a couple of weeks then try again.

COLLECTING ACORNS FROM THE GROUND

Those that fall to the ground may have already dried out or have been damaged by insects. When collecting from the ground, leave behind those acorns that are very small, cracked, or feel light and hollow.



STORAGE



It is ideal to plant acorns soon after collecting them. However, if you need to store your acorns, they should not be stored for longer than a month.

Refrigeration slows the metabolic activity and prevents the acorns from heating up or drying out, both of which can be damaging. Some studies have shown storing acorns in the refrigerator for a month before sowing also results in faster and more complete germination.

ISSUES WITH LONG-TERM STORAGE: If stored at room temperature, acorns can dry out and lose viability. If stored for longer than a month in the refrigerator, they can develop mold and deteriorate. If stored in the freezer, the moisture in the acorns will expand seed tissue, rupturing the cells and killing the acorn.

HOW TO STORE YOUR ACORNS

1. Acorns collected from the ground may have already begun to dry out. If collected from the ground, soak in water for 24 hours, then surface dry. After soaking, discard acorns that float in water, as those acorns may be immature or have been damaged by insects.
2. Prior to storage, the caps of the acorns should be removed. They should come off easily when twisted.
3. Acorns collected should be rinsed in a diluted bleach solution to prevent mold growth: ½ cup per gallon of water.
4. Thoroughly surface dry your acorns and place them into paper bags. When finished, place the paper bags into zip-lock bags. Paper bags are porous, which allows the acorns to “breathe” better than with plastic bags alone. Leave the zip lock bags open to allow excess moisture from the acorns to escape.
5. Refrigerate immediately.
6. Occasionally check the condition of acorns in storage.

IF YOUR ACORNS BEGIN TO MOLD: If mold appears, remove the acorns from the paper bags and rinse them well in the diluted bleach solution again. Then surface dry them and place them back into cold storage in clean dry paper and zip-lock bags.

IF PREMATURE GERMINATION OCCURS: Once the white root tip emerges from the pointed end of the acorn, it should be planted within a week or so. If rot sets in, it will turn the root brown and kill the acorn. Blue Oak (*Quercus douglasii*) acorns can be especially prone to premature germination.



PLANTING

Acorns are planted in November, when cooler temperatures and rain arrive. They will overwinter in the soil, experiencing natural cold and wet weather conditions. This over-wintering process, which is called stratification, is especially necessary for Black Oaks (*Quercus kelloggii*) to break seed dormancy. Germination generally begins around mid-February. However, the seedling will not emerge from the soil until early to mid-March.

Oaks grow a deep taproot very quickly. By the time a sprout pokes through the soil, the oak seedling will already have a taproot 10 to 12 inches deep. This is a survival strategy for drought-adapted species. They send down a deep taproot before the rainfall ceases in the summer.

HOW TO PLANT YOUR ACORNS

1. Using a hand trowel or shovel, dig a hole several inches deeper than the where the acorn will be planted. Refill this loosened soil into the hole and tamp firm, up to the level the acorn will be planted.
2. Cover with remaining soil. This method gives the new root a chance to get a good start in soft soil that is easy to penetrate.
3. Plant acorns on their sides, about one inch below the soil surface.
4. Thoroughly water in the acorns immediately after sowing, to settle the soil and eliminate any large air pockets.

If germination has begun before sowing, be sure to plant the acorn so the root tip is pointing down. If the root is more than 3 inches long, it can be pruned back to 2 or 3 inches. The root will then branch and regrow from this point. It is better to plant an acorn with a pruned root than one with a long and possibly tangled root.

Depending on the planting site, it may be desired to plant 2 or 3 acorns in each hole. This will increase the chance that at least one will grow. If more than one acorn sprouts in a hole, remove the smaller tree when it is several inches tall. Clip it off at ground level with wire cutters. Seedlings at this very young age will not sprout back when cut.



SEEDLING CARE



The amount of care and protection you provide to your plants will depend on your individual situation. If you are planting a few trees around your house, it may be practical to put time into watering, mulching, weeding, and protecting your seedlings. However, if you are planting many acres or hundreds of trees, such intensive care may not be possible.

WEEDING AND MULCHING

A major factor that limits seedling growth and survival is water availability. Fast-growing, competing vegetation reduces the amount of water available to the oaks.

It is highly recommended that a 2 to 3 foot diameter circle be scraped (scalped) of all competing vegetation before planting. Placing a couple inches of mulch (hay, wood chips, rice hulls, pine needles, etc.) around the seedling will help conserve soil moisture and eliminate competing vegetation. Black plastic or landscaping fabric can also work, but will have to be staked or pinned to the ground.

IRRIGATION

Irrigation is not always necessary. Acorns planted in late fall will have well established taproots by the time the rains end in late spring. However, watering deeply two or three times (three gallons or so per seedling), during the first two or three summers after planting, will enhance seedling growth and survival.

After a few summers, the trees should be fine on their own. Remember, these trees are adapted to California's hot, dry summer conditions once they are established.



PROTECTING SEEDLINGS

Acorns and oak foliage are important food sources for a large variety of animals. Therefore, above-ground protection is necessary to limit damage to both acorns and seedlings. Rodents and squirrels may dig up acorns while other animals (livestock, rabbits, deer, grasshoppers, etc.) will eat the tender, young foliage. Once the trees have grown to four or five feet tall, they should no longer need protection. By then their stems are too woody for browsing and the tops will be out of reach of animals.

You can make your own protector using window screen and wooden stakes. Cut screen material to make a tube 3 feet long and 6 to 8 inches in diameter. Attach to wooden stake with staples or carpet tacks. Fold the top closed and secure. It is essential to use material with mesh small enough to keep grasshoppers out, as they can devastate to young oaks.



Pre-made protectors are available from private vendors.





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