

**4-H Youth Development**  
**OAK TREE**  
**PROJECT**



**Cooperative Extension University of California**  
**Division of Agriculture and Natural Resources**

**4-H-6046**

## ABOUT OAKS

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The majestic oak trees that add beauty to our state have been around to see many changes. Some of these stately giants were mere seedlings over 200 years ago. They have witnessed California becoming a state, the invention of the automobile, and yes, even the first television set.

Weather worn branches, massive frames, and fresh green leaves add to their awesome beauty. Travelers photograph them, children climb in them, birds rest in them, and deer find shelter under them. Oaks give us many things. They provide shade for us while on a picnic or playing in our yard. Oak trees help to increase property values by virtue of their beauty. A carefree landscape is easy to achieve when oaks are a part of it. Oak trees provide food and shelter for wildlife, and wood for our furniture or fireplaces. And finally, they anchor the soil and help to prevent erosion.

In many areas, some species of oaks are having a tough time surviving and regenerating. As a person concerned with survival of natural beauty, you can learn to help protect existing trees and help new trees to get a start on life. You have an opportunity to start a young tree that many people will be enjoying over the next 200 years.



## COLLECTING ACORNS

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One of the most exciting aspects of starting a new oak tree is collecting the acorns you will use. The most important first step is to decide what kind of oak you would like to grow. The descriptions found on pages 2 and 3, "What Kind of Oak Tree Is It?" may help you decide.

After they fall to the ground, acorns are quickly attacked by insects, birds, and rodents. It is best to collect acorns shortly after they fall to the ground between September and December. Look for shiny, plump, freshly fallen acorns that do not have any worm holes. If a cup still clings to the acorn, you should carefully remove it. You can even collect acorns right from the tree branches. Since every acorn will not produce a seedling, it is best to collect two or three acorns for every tree you would like to have. You can test them by soaking them in a pail of water for 1 hour, keeping those that sink. If an acorn floats, it has probably been attacked by insects or has not fully ripened. Acorns that may have remained on the ground for several days should be soaked up to 24 hours before throwing out floaters.



## STORING ACORNS

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If you are unable to plant your acorns soon after collecting them, it is important that you store them correctly. One of the best storage methods is to place them in a resealable plastic storage bag. This bag should then be sealed and put in the refrigerator.

Storage as described above will prolong the acorn's ability to sprout and grow. But remember acorns are living things and they will deteriorate with time. It is best not to store acorns for more than a couple of months before planting. Blue oaks are especially difficult to store, since after 2 months their roots often start growing, even while they are in the refrigerator!

## PLANTING ACORNS

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November is an ideal time to plant your acorns. Selecting the proper container can have a major impact on the success or failure of your project. An acorn will send down a strong tap root very quickly. Therefore, deep containers are most important. One-gallon size containers are most desirable. You may use plastic nursery containers, empty coffee cans, plastic milk jugs, or similar containers. Be sure that there are five to seven holes on the sides near the bottom to allow excess water to drain.

Place a good loose potting soil in your container to a depth of 1 inch. Then sprinkle 1/4 teaspoon of a nitrogen fertilizer (21% or lower) over the soil. Now you can fill the container with the same potting soil to within 2 inches of the top of the container.

You may now lay five of your acorns on their sides in the soil. Then cover them with 1 inch of potting soil. This will leave you with 1 inch of can visible above the soil level to hold water. Soak the soil well and keep it slightly moist at all times. The soil should never remain saturated. It is a good idea to make a label for your container that shows your name, the planting date, and the kind of oak tree you are growing. It is best to keep your container outside in a sunny location. This will help to keep the oak tree adjusted to its environment.

Do not expect to see your first leaves for 6 to 8 weeks. When the seedlings have developed 2 or more leaves, you can thin them out, leaving only the strongest 2 seedlings. Simply clip off the weakest seedlings at the soil level.

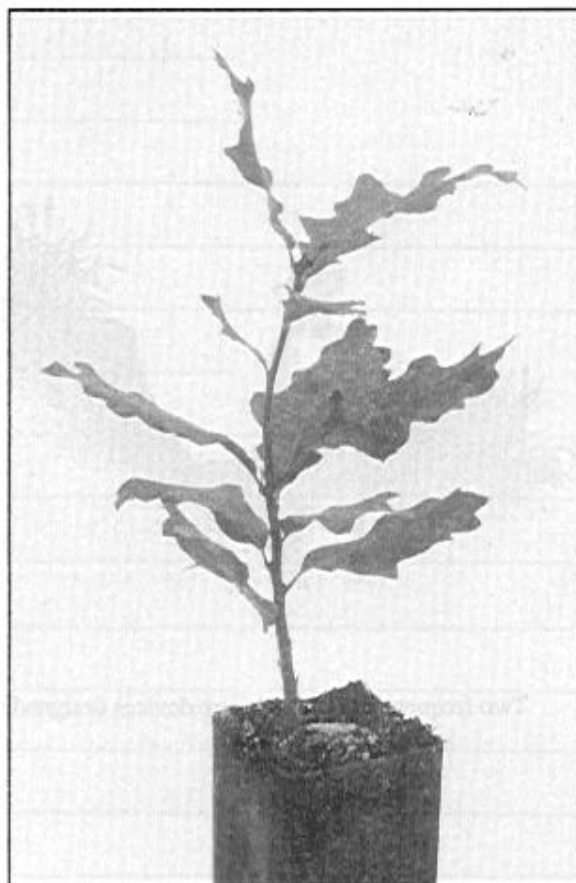
## TRANSPLANTING YOUR SEEDLINGS

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Your young trees should be transplanted into the ground during February or March. If you can plant them on National Arbor Day, it will make the event even more special. Remember, your trees may live for a very long time so consider a planting location very carefully.

Start by digging a hole twice as large as the can. This will help to loosen the soil so that the young tree can develop new roots easily. Water your trees very well before removing them to be planted. Do not attempt to separate the two trees growing in the can, but rather plant them and the soil root ball as a unit. After the seedlings are well established, the weaker one can be clipped off at soil level. Keep as much soil from the can on the roots as possible. It may be difficult to transplant your seedlings if the soil falls from the roots. Try your best to keep the soil intact. If the soil does fall off, plant the roots as carefully as you can. If roots have grown so long that they are curving around the inside of the can, cut them so they are straight.

Carefully place the young tree in the hole so that both soil levels are even. Refill the hole. It is very important to now soak the soil thoroughly. Normal rains should then provide adequate soil moisture until the dry season.



## CARING FOR TRANSPLANTED OAKS

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**Watering.** During the first dry season of your tree's life, irrigation will be necessary. Thoroughly soak seedlings every 2 weeks so that water penetrates the soil deeply. You can reduce watering frequency as the trees become established, and after 2 years you should no longer have to water them.

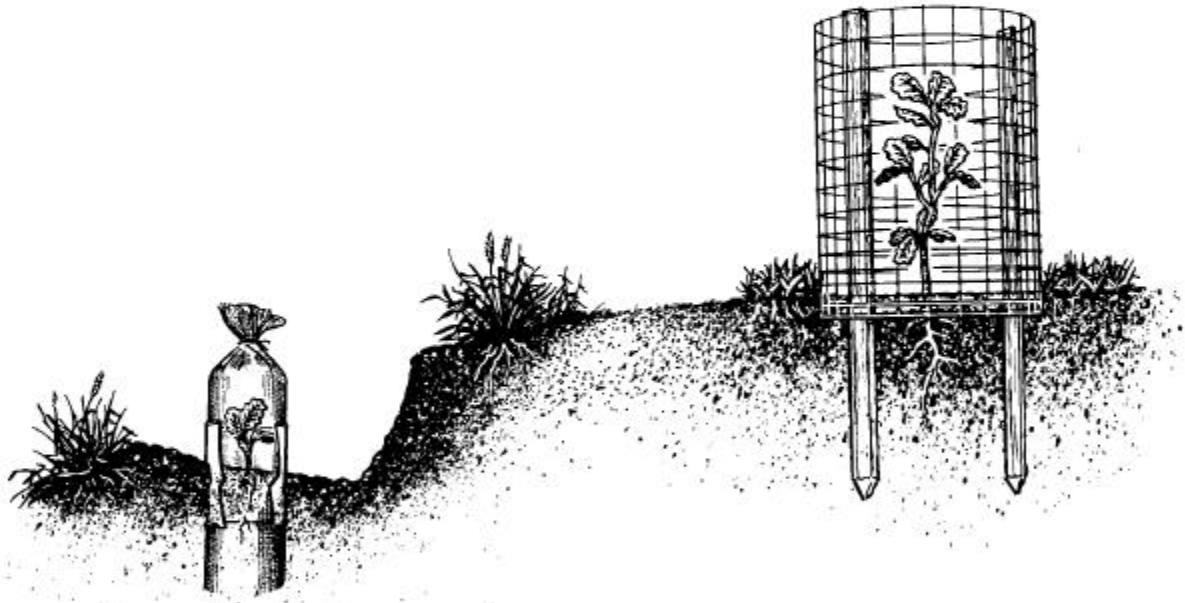
**Weeding.** Weeds that grow around your trees will use up valuable soil moisture and nutrients, and can block necessary sunlight. Use a hoe or hand-pull all weeds within 2 feet of the tree. A mulch of straw, grass clippings, or other organic matter can help to reduce weed growth and hold in soil moisture. Pinch off tips of unwanted side branches to encourage fast upward growth during the first year.

## SEEDLING PROTECTION

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A tender young seedling is an attractive source of food for ground squirrels, birds, livestock, deer, and rabbits. An enclosure made of aluminum window screen, wire fencing, or other such material can give your seedling a much better chance of surviving. Generally, the enclosure can be removed when the tree reaches a height of 4 to 5 feet.

Two frequently used enclosure devices designed to protect seedlings from ground squirrels, birds, and deer.



Two frequently used enclosure devices designed to protect seedlings from ground squirrels, birds, and deer.



# DISEASES AND PESTS OF OAKS

Once an oak tree becomes well established in a natural setting, it is usually fairly resistant to insects, diseases, and animals. However, trees can be damaged and are occasionally killed. During years of drought the trees may become weakened and thus more susceptible to disease or insect attack.

**Animals.** While the oak tree is less than 5 feet in height, animals can be a serious enemy. Rabbits, ground squirrels, deer, and livestock may eat the entire seedling or remove all leaves. As the tree matures, animals usually do not cause serious problems. You may have noticed that oak trees growing in a grazing area have all lower leaves and stems eaten off to a height of about 5 feet from the ground.

**Insects.** Many insects find oak trees a very nice place to live. Usually, they do not seriously damage healthy and mature trees. The oak gall, for example, is a harmless swelling of branchlets in reaction to enzymes released where a wasp lays its eggs. These galls can be so abundant, colorful, and multiformed that they resemble dangling Christmas tree ornaments.

Other insects can damage and certainly disfigure mature oaks. Oak leaf moths and other leaf-eating insects are examples. During outbreaks they can eat most of the foliage on a tree and cause a mess underneath. However, their leaves usually grow back when the population of these insects declines. During drought years when trees are stressed, mature oaks can also drop their leaves early to conserve moisture. These trees usually recover the following year with no noticeable harm.

**Mistletoe.** This parasitic shrub develops sticky berries that are carried from tree to tree by birds. The berries then grow into the branches and may cause structural weakness. They can also weaken trees by using moisture and nutrients, but rarely do they actually kill a tree. Trees with large mistletoe infestations are very vulnerable to branch breakage. Mistletoe is best controlled while the infestation is small. After the mistletoe is cut out, cut back the oak's bark around the spot where the mistletoe stem entered the oak branch.

**Diseases.** Probably the most important disease of native oaks is something called "oak root fungus." This disease thrives in warm, moist conditions and can seriously damage or kill mature, established trees. People who build homes near native oaks can unknowingly cause this problem by planting lawns and other water-loving plants around the trees. When these plants are watered in the summer, the oak root fungus starts growing on the oak's roots. Eventually the fungus can cause so much root damage that the tree dies.