# Nut Trees for New Jersey

Fact Sheet FS1225

## Cooperative Extension

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Nut trees can be grown successfully in New Jersey for their edible nut crop, as a lumber resource, for wind and erosion control, and for habitat and food for wildlife. However, this publication is intended for the suburban homeowner or hobbyist who can benefit from the ornamental and shade value of the nut trees as well as their nut crops for food when the nuts ripen each autumn.

## Climate

Climate is most important in determining whether nut trees grow and fruit satisfactorily. The average annual minimum temperature should not go below -20°F. The most successful nut tree species in New Jersey are Chinese chestnut, black walnut, butternut, several species of hickory, and native hazelnut (or filbert). "Borderline" nut trees include Persian walnut, Japanese walnut, heartnut, pecan, and almond where harvests will be limited by low winter temperatures, humidity, length of growing season, and growing-degree days. Late spring frosts and drought can also be very damaging. The planting site—North, Central, or South Jersey—may determine whether or not a "borderline" nut tree species can survive and thrive.

## Cultural Practices

Planting and cultural requirements for nut production are similar to practices recommended for other ornamental or fruit trees. Buy trees from a reputable nursery that labels the trees as budded or grafted from a tested cultivar. If seedling trees are purchased, be sure that they were grown from the best seed obtainable, and expect them to be quite variable in contrast to the grafted trees. Nut trees should be planted in fertile, well-drained soil. Drainage is more critical than soil type. Neutral or slightly acid soils are best suited for nut trees. Avoid frost pockets. Most nut trees are planted 25–30 feet apart. Since hazelnuts are more shrub-like, they can be spaced about ten feet apart. Plant bare-root plants in the early spring. Mulch with straw or hay to reduce weeds and conserve soil moisture. Protect from deer browse and buck rub. Water thoroughly every one to two weeks during the first summer. Do not fertilize the first year. A soil test can determine if fertilizer is needed the following years. Soil test kits are available from Rutgers Cooperative Extension county offices.

Nut trees require little pruning, although good structural shaping in the early years can help them to develop into healthy trees later. Low branches, dead limbs, and narrow crotch angles of less than 35° can be removed in the winter. If logs for lumber are desired, particularly black walnut, a clean trunk for at least nine, and preferable 17 feet, should be created by removing side branches when they attain a diameter of two inches. Hazelnuts can be allowed to grow as a bush form, or pruned to a single stem, as is done with European hazelnuts in commercial production in Oregon.

Some nut tree species such as chestnuts, hazelnuts, pecans, and Persian walnuts, need cross pollination for nuts to develop and mature properly. This requires growing different cultivars that overlap in bloom and are also genetically compatible. Some nut trees, especially pecan, exhibit alternate bearing, or periods of nut production that alternate every other year. Bearing can be improved somewhat by thinning the nuts in heavy-producing years, increasing nitrogen fertilization, irrigation, and providing adequate sunlight.

## Black Walnut and Butternut Toxicity Problems

A chemical in the roots, leaves, and hulls called juglone (5-hydroxy-alphanapthaquinone) is capable of injuring other plants. Horses and humans may also be affected. Antagonism has been observed in several garden plants, notably tomatoes, potatoes, peppers, and eggplant; fruit crops such as apple, blackberry, blueberry, and grape;

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and landscape plants such as azalea, rhododendrons, mountain laurel, white birch, cotoneaster, hydrangea, lilac, pines, spruces, and yews. These plants grown within the root zone of a black walnut or butternut tree usually start to wilt within one to two months after planting, then die, or are severely injured. The toxic zone extends an average of 50 to 60 feet from a mature tree. Carefully consider the planting site for black walnut trees, Persian walnut trees grafted onto black walnut stock, or butternut trees if other garden or landscape plants are to be grown within the root zone of the mature nut trees.

There are many plants that are unaffected by juglone including juniper, hemlock, arborvitae, maple, ash, honeylocust, sweetgum, witchhazel, redbud, dogwood, forsythia, viburnum, clematis, fescue and bluegrass turfgrass, beans, corn, melon, onion, parsnips, squash, black raspberry, and cherry. Hickory, hazelnut, chestnut, and pecan are also unaffected by juglone so a mixed nut orchard is a good option.

Black walnut chips or sawdust should not be used for horse bedding because of documented toxic effects on horses. Allergic symptoms to black walnut pollen have also been observed in both horses and humans.

## Nutrition, Harvesting, and Handling

Nuts are a good source of energy and calories, a result of their high fat content. They also contain high-quality protein, making them a potential substitute for meat. The chestnut is an exception: it has little protein, even less fat, and a generous supply of carbohydrates, making it more like a potato than a nut.

Nuts ripen from September to November, depending on the species and cultivar. Named cultivars usually begin bearing two to four years after planting (although hickory and pecans may take eight to ten years). Trees from planted seedlings may take eight to twelve years to produce nuts. Allow nuts to mature fully on the trees and to fall naturally. Mow close to the ground just before harvest to make it easier to pick up the nuts. Gather them as soon as possible to prevent discoloration of the shell and kernel, and to reduce losses due to animals, trespassers, and molds.

Husks of pecan, hickory, hazelnut, chestnut, and Persian walnut usually open and the nuts fall from the tree when ripe, or the husks should be removed. The husks of the black and other walnuts must be removed before they turn black or the nut may be stained and strong tasting. With the exception of hazelnuts, the nuts should then be washed in water and any that float should be discarded—they are either immature, aborted, rotted, or contain an insect.

All nuts except chestnuts should be well-dried before being stored to prevent a moldy, poor-quality product. No nut species should be exposed to the direct rays of the sun. For drying and curing, spread the nuts on a screen, not more than two nuts deep, and place in a shady area with good air circulation. Maintain a temperature of 50 to 65°F for drying and curing. Within two weeks, the shell should become crisp and the nut can be stored in wire baskets or mesh bags in a cool (32 to 40°F), airy location. Because of their high fat content, nuts will become rancid after about one year. Cured, shelled nuts will keep two years or more if stored between 25 to 32°F.

Chestnuts should be gathered daily as soon as they fall to the ground and the burs start to open. Good sanitation can help keep weevil damage under control. Prompt harvest followed by a hot water treatment (122°F for 30 minutes) will kill weevil eggs before they have a chance to hatch. After soaking, the chestnuts should be allowed to cool and surface-dry before storage. If they will not be used in the next two to three days, store the chestnuts in a brown paper bag or perforated plastic bag in the refrigerator to reduce mold and rot, but they only keep about two to four months. For longer storage, chestnuts should be boiled or roasted, shelled, and then frozen in sealed plastic bags. They will keep for about nine to 12 months. Use them immediately after thawing.

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