Agricultural Extension Service
The University of Tennessee
SP307-P

Home Nut Tree Plan

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Edible nuts produced commercially in the United States include pecan, English walnut, filbert, pistachio, almond and macadamia. Those for which no sizable commercial industry exists include black walnut, hickory, butternut and chestnut. Of those listed, pistachio, almond and macadamia are not adapted to Tennessee growing conditions. Several of the others have certain characteristics which limit areas of the state in which they may be grown and fruited consistently.

This factsheet may aid in selection of nut trees for planting in Tennessee. Figures given in the table are approximate values. They will vary depending on site, cultural practices and weather conditions.

Grafted trees are suggested when planting for nut production. When compared to trees grown from seed (seedlings), grafted trees generally bear crops at a much younger age. Also, grafted trees and the nuts they produce will be like the parent trees, while those grown from seed may vary considerably.

If trees are to be grown from seed, realize that the nuts need to be stratified before they will germinate and grow. **Stratification** involves exposing nuts to a cold, moist environment for a given period of time, usually about 90 days, before the nuts will germinate and grow normally. Stratification may be achieved by planting nuts in the fall and letting Mother Nature pro vide the cold, moist conditions or by placing the nuts in a moist medium such as peat moss, sand or paper towels. The medium is then put in a plastic bag, sealed and refrigerated for the necessary period of time. Once the stratification period has been satisfied, the nuts should be planted. Be careful to avoid letting the nuts dry out during the interval between stratification and planting. Plant the nuts about 2 to 3 inches deep.

Most nut crops perform best on a deep, well-drained, loamy soil having a pH of about 6 to 7.

Pecans

Pecans are native to the Mississippi Valley area of West Tennessee. These trees are seedlings and, as such, they produce nuts that are generally quite small with a rather thick shell. Varieties suggested for planting in Tennessee will vary depending on the part of the state in which you live. Consult PB 746, **"Recommended Tree Fruit, Tree Nut and Small Fruit Cultivars for Tennessee."** This publication is available at your county Extension office.

Pecans are wind-pollinated, not insect-pollinated. To attain good production, it is necessary to have at least two different varieties which shed their pollen at the correct times. To further aid in ¡receiving good cross pollination, the trees should not beplanted more than 100 feet apart.

After pecan trees reach maturity, they have a tendency to alternate bear, which means they produce a big crop one year followed by no crop or a small crop the next year. Although the alternate bearing tendency may not be completely eliminated by good cultural practices, its severity can be reduced substantially.

Hicans

Hicans are crosses between pecans and hickories. They tend to be more of a novelty than a good nut-producing tree. The trees usually do not produce large crops. Often the nuts are quite large but have a very thick shell and poor kernel quality.

English Walnuts

English walnuts are more correctly called Persian or Carpathian walnuts. Although they will bear crops in Tennessee, their production tends to be quite sporadic. The main limiting factors to consistent production are spring and fall frosts, extreme summer heat and fluctuating winter temperatures. The trees are susceptible to southwest trunk injury. Late spring frosts may kill buds and new shoots.

Most varieties need to be cross-pollinated. Like pecans, they, too, are wind-pollinated.

Black Walnuts

Black walnut is considered to be the most valuable timber species in North America. To produce the best timber, it needs a moist, well-drained, deep, fertile soil such as is frequently found along river bottoms. The trees grow slowly and 40 to 50 years may be needed before they reach good size for timber.

The nuts have large shucks that are difficult to separate from the nuts. The shells are thick and hard to crack without getting a black, pungent powder mixed with the kernels.

Black walnut tree roots and, to a lesser extent, the leaves and the shucks, contain a toxic substance called juglone that can stunt growth of or kill apple trees, tomato plants, potatoes, blackberries and several other species when grown in the same area.

Butternuts

Butternut is similar to black walnut. Trees need moist, deep, well-drained soils. The nuts are hard to crack, and when cracked the kernels often shatter to the point that they are hard to recover.

Heartnuts

Heartnut produces a nut with a heart-shaped shell, but is otherwise like a Japanese walnut. Trees tend to be very shy bearers.

Buartnuts

Buartnuts are heartnut by butternut hybrids that have heart-shaped nuts. Nuts tend to be very difficult to separate from theshell and the trees are not very productive.

Hazelnuts(Filberts)

In the East, they are known as hazelnuts and in the West they are known as filberts. They are also called cobb, cob nut, Pontic nut, Lombardy nut and Spanishnut.

Hazelnuts grow best in deep, fertile, well-drained river bottom land. The trees will not tolerate wet feet. With young trees, winter injury to the trunk is a common problem. For the first few years of tree life, some type of trunk protection such as latex paint should be applied to the tree trunk.

Like many other types of nut trees, hazelnuts need to be cross-pollinated from another variety that blooms at the proper time. Hazelnut blooms are wind-pollinated and the pollinator variety should not be more than 100 to 200 feet from the variety needing to be pollinated. Hazelnuts have separate male and female flower parts on the same plant.

Ideally, hazelnuts should be grown in an area having cool summers and mild winters. In these areas, bloom may occur during the interval from late October to late March. Frosts and freezes at this time may kill flowers. Rainfall may affect pollen transfer from the male to female flowers on different trees.

Chinese Chestnuts

At the turn of the twentieth century, American chestnut trees were the dominant species in eastern forests from Maine to Georgia. Their rot-resistant wood was valuable for building and fencing. The nut crop was an important food source for both wild and domestic animals, as well as humans. In 1904, chestnut

TREE NUTS

Rootstock	Spacing		Tree Height at Maturity	Age to First Crop [2/]	Age to Full Production[2/]	Yield per Tree at Maturity[1,2/]	Productive Lifespan
	Within Rows	Between Rows					
Pecan							
grafted	40 to 60 ft.	60 ft.	60 to 80 ft.	6 to 8 yr.	14 to 16 yr.	60 to 75 lb.	40 yr. or more
from seed	40 to 60 ft.	60 ft.	60 to 80 ft.	10 to 14 yr.	18 to 22 yr.		
Hican	same as pecan						
English Walnut							
grafted	22 to 25 ft. early, then thin to 45 to 50 ft.	22 to 25 ft. early, then thin to 45 to 50 ft.	40 feet or more	3 to 5 yr.	10 to 12 yr.	6 bu. per tree	20 to 30 yr.
from seed	45 to 50 ft.	45 to 50 ft.	40 feet or more	4 to 8 yr.	14 to 18 yr.		
Black Walnut							
grafted	60 ft.	60 ft.	50 to 60 ft.	3 to 4 yr.	12 to 14 yr.	60 to 75 lb.	40 yr. or more
from seed	60 ft.	60 ft.	50 to 60 ft.	10 to 14 yr.	18 to 22 yr.		
Butternut, Buartnut, Heartnut	same as for black walnut						
Hazelnut							
from seed	20 ft.	20 ft.	15 to 20 ft.	3 to 4 yr.	8 to 10 yr.	20 to 25 lb.	30 yr. or more
Chinese Chestnut							
grafted	20 ft. early, thin to 30 or 40 ft.	20 ft. early thin to 40 ft.	30 to 40 ft.	3 to 4 yr.	8 to 10 yr.	60 to 75 lb.	20 to 30 yr.
from seed	30 to 40 ft.	40 ft.	30 to 40 ft.	6 to 8 yr.	12 to 16 yr.		

1/ inshell weight

2/ Figures for age to first crop, age to full production, yield and productive lifespan are approximate. They will vary depending on soils, cultural practices and climatic stresses.

blight began its destructive march through these forests and, by the mid 1950s, the American chestnut tree population had been virtually destroyed.

Due to the continued presence of this disease and to the lack of resistant American chestnut varieties, almost all chestnut trees planted in the eastern part of the U. S. are the Chinese type. Some chestnut hybrids have been released; however, they have not been adequately tested at this time to merit recommendation for planting in Tennessee. Chinese chestnut varieties are not immune to chestnut blight, but they do exhibit high levels of resistance.

Like many other types of nut trees, Chinese chestnuts are wind-pollinated and are self-sterile. Therefore, they require a second variety which blooms at the appropriate time for cross pollination.

Weevils are the number one pest problem for Chinese chestnuts. They overwinter in the soil under and around chestnut trees. Adult weevils emerge from the soil in late spring and early summer. They move up into the trees and feed. During the interval from about mid-July to mid-August, adult weevils lay their eggs in the developing nuts. After the eggs hatch, the larvae feed inside the nut. When the nut drops, or shortly thereafter, the weevils bore a small hole in the shell and exit the nut.

Weevil control may be accomplished by applying timely sprays of a labelled insecticide (check with your county Extension officefor current information regarding pesticides, rates, timing, etc.) or by picking up dropped nuts every day or two in the fall. Nuts should be placed in a container that would prevent weevils from escaping once they have emerged. With the latter technique, weevil populations may be significantly reduced over a period of several years.

After harvest, chestnuts should be soaked in a hot water bath (125 F) for one hour. Nuts treated in this manner can be stored in a refrigerator for up to two months.

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