



Pecan Varieties for Oklahoma

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Pecan varieties will be debated anytime two or more pecan enthusiasts discuss the subject. Experience over the years has taught growers that any variety may in due time fail to be as well adapted as it first appeared.

Of the 200 or more named pecan varieties commonly grown in the U.S., none has been completely satisfactory in Oklahoma to the grower, consumer and sheller.

Pecan varieties are generally classified according to their origin—Southeast, West, or Northern U.S. Cultivars grown in Oklahoma originated from all three areas.

Many of the southeastern varieties grown in Oklahoma originated as discoveries of seedling trees in Mississippi. Most of the western varieties were selections from nuts planted in Texas. Some are native discoveries.

Plant breeders of the United States Department of Agriculture have named and released varieties from cross-pollination of known varieties. These varieties carry American Indian tribe names, i.e., Choctaw, Mohawk, Sioux and Wichita.

In Oklahoma, several thousand seedling and native pecan selections have been studied and some named. The following varieties were selected, tested and named by the Oklahoma Agriculture Experiment Station: Cowley, Gormley, Hayes, Mount, Maramec, Oakla, and Patrick.

Rootstock

Rootstock selection impacts tree performance. Cold damage to young and old trees is a frequent problem in Oklahoma that is influenced by rootstock. Rootstocks from southern varieties, such as Riverside, Elliott or Moore, produce trees that are less cold hardy than rootstocks from northern varieties, such as Giles, Peruque or Colby. Apache rootstocks produce trees that are both cold hardy and fast growing. Rootstocks from trees native to the immediate area or a more northerly area produce trees more cold hardy than those grafted on southern rootstocks, but tree growth rates are highly variable grafted onto native stock.

The height of the graft above the ground affects cold hardiness of young trees. Trees grafted at or below ground level are less cold hardy than those grafted at least 18 inches above ground level.

Flowering Habits

Pecan trees are “monoecious,” meaning both male and female flowers are located separately on the same tree. A variety does not always shed its pollen at the time its own female flowers are receptive and ready for pollination. This condition is known as dichogamy.

Viable pollen must be available to the female flowers during the receptive period to set a crop. To overcome dichogamy, a combination of varieties should be planted to ensure pollen release throughout the pollination period. This can be accomplished by planting at least two early and two late pollen-shedding varieties in the same area. Provision of early pollen shedding is very important. Research indicates that pollination efficiency decreases at distances greater than 150 feet from the pollen source. Therefore, pollenizing trees should be no more than about 300 feet apart. A rule of thumb is that pollinators should be no more than about 8 rows apart. When native trees are in the proximity of a pecan planting, pollination of varieties is not ordinarily a problem.

Choosing Suitable Varieties

Select a pecan variety(s) that best satisfies your needs. One criteria that should be considered when selecting the variety is the type of market targeted. In Oklahoma, two markets predominate—the in-shell market and the shelling market.

The in-shell market is a direct market to the consumer, either by the producer or by a wholesaler to a retailer. The market is active from the onset of harvest until Christmas, necessitating an early harvest followed by rapid cleaning and packaging of the nuts. Large pecans are preferred for this market, but some growers have established successful retail markets with small pecans. One of the most important factors in establishing and maintaining an in-shell market is consistently high-quality pecans. The incentive for this market type is greater product price than offered in the shelling market.

Pecans for the shelling market are usually purchased based on the kernel percentage, with a deduction for damage from pests or other causes. There are no incentives for large pecan size. This market is available from the onset of harvest

Table 1. Recommended Pecan Varieties.

<i>Name</i>	<i>Avg. no. nuts/lb.</i>	<i>Avg. kernel %</i>	<i>Nut maturity</i>	<i>Pollen shedding</i>	<i>Scab susceptibility</i>	<i>Cold hardiness</i>	<i>No. yrs. to production</i>	<i>Remarks</i>
Caddo	70	55	Early	Early	Moderate	Moderate	6-7	Caddo nuts are football shaped with both the base and apex tapering to a long slender point. Trees are highly susceptible to brown spot (a foliar disease which develops during mid- to late-summer if humidity and rainfall are high). The nuts are highly susceptible to bird depredation. This cultivar is highly productive with little tendency to produce excessive crops. Trees have an early budbreak and have insufficient cold hardiness for northern and central Oklahoma. They are only recommended for southeast Oklahoma.
Colby	62	45	Very early	Late	Moderate	Hardy	7-9	Colby is a consistent producer; however, it is only moderately productive. Colby is very susceptible to brown spot. It is only recommended for northern areas of Oklahoma where a cold hardy tree with early nut maturity is required.
Giles	72	51	Early	Early	Moderate	Hardy	7-9	Giles is adapted to northern Oklahoma. Trees tend to overbear some years, but Giles has responded well to fruit thinning. Nuts are only moderate in quality. Giles is a good pollinator for varieties with female flowers with early receptivity. Giles nuts produce cold hardy rootstocks.
Kanza	77	54	Early	Late	Low	Hardy	7-9	Kanza is a cold hardy tree which produces good, consistent yields of high-quality nuts. The nuts are somewhat tear-shaped. Nuts have excellent shelling qualities, producing abundant bright yellow halves. It is adapted to all of Oklahoma.
Lakota	54	58	Medium	Late	Low	Hardy	6-9	Lakota is a relatively new release by the USDA-ARS that has promise for Oklahoma. Nuts are large and produce attractive kernels.
Maramec	45	58	Medium	Late	Moderate	Susceptible	7-9	Large, attractive nuts that typically have bright well-filled kernels. Trees have shown less tendency to overbear than most other large-fruited cultivars. Maramec is best suited for sites south of I-40 and marginally suited for sites between I-40 and Tulsa.

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Pawnee	50	58	Early	Early	Moderate	Moderate	6-8	Pawnee produces a large, very attractive nut. Kernels tend to have spots or streaks, but they have generally been well received by the public. If trees are stressed by drought, crop overload, etc. kernel color becomes very dark or has excessive black streaking. Pawnee overbears and will require fruit thinning. Trees are very susceptible to crowding that amplifies alternate bearing. Bird depredation is high on this variety.
Peruque	81	59	Very early	Early	Low	Hardy	7-9	Peruque is a consistent producer of good quality pecans. Nut size of Peruque is strongly affected by water availability. Nuts are very susceptible to bird depredation. Peruque is best suited for northern Oklahoma. Peruque nuts produce cold-hardy rootstocks.
Oconee	48	56	Medium	Early	Moderate	Unknown	5-7	Oconee produces high quality nuts, and shows promise for Oklahoma. It should be adapted from the Ada area and south. Oconee is very precocious, and may show a strong tendency to overbear as trees become older.

until harvest is completed. Buyers for the shelling industry are available, and pecans can be marketed in much the same manner as wheat or soybeans.

Nut size is an important consideration in pecan variety selection. It is generally easier to maintain quality of smaller nuts than larger ones. Market requirements dictate nut size to some extent. Select a nut that is only as large as your market requires.

Varieties with late-maturing nuts, such as Graking, Kiowa, and Choctaw, require a long growing season and do best in the southern half of the state. If the growing season is too short, the pecan shucks are killed before opening, rendering the pecan unfit for sale. Additionally, if the nuts are immature during the first fall freeze, trees will be more susceptible to cold injury.

Varieties with nuts that mature early in the season are suitable for all areas of Oklahoma and are specifically suggested for northern Oklahoma. Generally, early maturing varieties produce smaller nuts, and some lack the productivity of the more popular late maturing varieties commonly grown in the southern areas of the state. However, if these early maturing varieties with medium productivity are grown in southern Oklahoma, alternate bearing problems may be less severe than with late maturing varieties that produce large nuts and have a tendency to overload. One disadvantage of early nut maturity is increased depredation by birds and other pests.

Certain varieties are disease susceptible and require regular fungicide applications, while others may escape disease. Varieties highly susceptible to the fungus disease scab should not be located in low-lying, humid areas of the state. Plant only in western Oklahoma in dry areas or areas with good air movement. Table 1 lists scab susceptibility as low, moderate, or very high. No varieties with a high scab susceptibility were suggested. Varieties with low susceptibility will probably not require fungicide application. Those moderately susceptible

should not require fungicides if scab pressure is low; however, if conditions favor scab development, then fungicide applications will be required. Very high scab susceptibility indicates that fungicide applications are necessary, and the variety cannot be grown successfully where scab pressure is high.

Cold hardiness of a tree is affected by the cultivar, rootstock, general tree health and crop load. Trees that bore a heavy crop load are more susceptible to fall and winter cold injury than trees that bore an average crop. Thinning fruit of heavily loaded trees with a trunk shaker equipped with donut pads can improve fruit quality, reduce alternate bearing, and decrease cold injury. Fruit should be thinned when they reach full size and are in the "water stage" (about August 1). The optimum crop load for large nut varieties is about 50 to 60 percent of their shoots bearing fruit, and small nut varieties should have about 60 to 70 percent of their shoots bearing fruit. If the crop exceeds the optimum load, then nuts should be thinned. Refer to fact sheet HLA-6251 for additional information on crop load management.

When planning a commercial orchard, it is wise to include several varieties (preferably four to six) in the planting. It is not necessary to include an equal number of trees of each variety.

Table 1 provides detailed information of the most popular and promising varieties suitable for Oklahoma. This information can assist in the selection of varieties suitable for specific uses and for various geographic locations in Oklahoma.

During the past years, numerous other varieties have been planted in Oklahoma, such as Choctaw, Mohawk, Graking, Shawnee, Kiowa, and Wichita. Because of one or more pertinent reasons, these varieties have lost favor and are not as prominent as the selections detailed here.

There is no one best variety available; all selections have both weak and strong points.

This fact sheet is adapted from original material prepared by Glenn G. Taylor.

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