

# TEXAS FRUIT & NUT PRODUCTION

AgriLIFE EXTENSION

Texas A&M System

## NATIVE PECANS

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There are 600,000 to one million acres of native pecans along the numerous rivers, streams, and creeks in Texas. The major rivers on which dense stands of trees are found are the Red, Sabine, Trinity, Neches, Brazos, Colorado, Guadalupe, and Nueces. Of the total number of native trees in Texas, approximately 40,000 acres are managed consistently as the native crop production is seldom over 20 million pounds. A native pecan management program should include nut production as well as livestock grazing, and recreational hunting of varmints. Native pecans have historically been a weak economic crop when compared to planted orchards because of alternate bearing,



small nut size, low percentage of kernel, and traditionally low market price. Under such economic conditions, it has been difficult for native growers to make significant management inputs for improving the grove. Pecan market prices are difficult to predict both short-term and long-term. Pecan market prices for natives have recently been stronger than the historical average, encouraging native pecan tree owners to consider grove improvement practices.

### Soil Adaption

All native pecan groves are different. Those growing along large rivers or streams have more economic potential because of deep soils, at least 20 feet, and subsurface irrigation as opposed to those on small creeks. Large trees have more economic potential up to a certain point. There comes a time when some trees get too big to spray and harvest. Areas should be checked for potential floods as flooding during the fall harvest can destroy the entire crop. A few isolated native trees are not good as wildlife predation can typically get the whole crop.



Deep alluvial soil; characteristic of native pecan bottoms

### Site Preparation

**Remove Foreign Timber** - The first step to rejuvenating a native pecan bottom is to remove all foreign timber--oak, elm, hackberry,

mesquite, etc. regardless of size. A common situation in many groves is to have a few large pecan trees surrounded by very dense stands of foreign timber and smaller pecan trees. Try to remove the foreign timber without harming the pecan trees. The trees can be pushed out using a bulldozer or chain sawed and drug out. Individual trees can be girdled and burned out.



Do not use brush herbicides containing Picloram around pecan trees. The brush herbicide choice should be Remedy (triclopyr). However, extreme care must be used with this product to prevent potential damage to pecan trees. All foreign timber should be removed prior to beginning a management program.

**Establishing Pasture** - Native pecans should be managed in combination with livestock grazing. Establish a native grass sod immediately after tree thinning. Many times the native grasses will reclaim the land once sunlight again hits the grove floor. The orchard floor can be smoothed with disking, followed by seeding, and fertilization with a very high rate of nitrogen for a few years to establish good growth for both the sod and the trees themselves. The nitrogen will be used by both the grass and the trees. Sometimes 3 to 5 years are required for the trees to bear. Foliar zinc sprays will also be needed to stimulate growth.

**Select the Best Trees** - Evaluate each tree for production potential and nut size. Once a tree is identified as a good producer of large nuts, it should be marked with paint or tags to remain as a permanent tree. Conversely, trees with small nuts need to be marked for immedi-

ate removal. Weak, inferior, and damaged trees should also be removed quickly. Trees should receive full sunlight over the entire canopy for maximum production. In reality, this is never the case. A native pecan grove often contains numerous tall, spindly, trees which have to be thinned. It is ideal to have 50% of the ground shaded and 50% of it covered in sunlight for optimum spacing in a native bottom. In addition, pecan trees should be evaluated on individual tree productivity, nut qual-



**Grazing is an integral part of native management; ideally animals should be removed 45 days before harvest.**

ity, and susceptibility to disease (scab) and insects (phylloxera, weevil). Tree evaluation and removal should continue with some trees being removed every year indefinitely. Thinning has to be a long term, on-going event for best results.



**Weak trees can be removed immediately.**

**Timber** - Before trees are removed, contact potential buyers of veneer logs, sawlogs, cross ties, and/or firewood to obtain timber buyers. In large native bottoms, a trained forester will be needed to estimate the economic value and help locate a buyer. The initial thinning operations to increase nut production in a native pecan stand may include as much as 2,500 board feet of veneer logs and sawlogs and five to eight cords of firewood. Timber product sales could reduce total costs of thinning and may result in partial profits.

Large industrial timber buyers have not developed in Texas; however, there are over 50 small sawmills which purchase pecan timber. Texas native pecan wood is dark colored with numerous markings, which is atypical in the national hardwood trade; however, this does not rule out a market for handmade paneling, furniture, and floors.

The best timber sales have come from individuals who have small portable sawmills. They have been able to cut and dry their timber for their own use or for retail sale. Such mills do a good job, but it requires a lot of work. Pecan logs have been sold for mushroom production and firewood. In addition, firewood has probably accounted for most of the sales, although the market can become saturated.



**Small saw mills can be used to mill pecan lumber.**

**Improving Small Trees** - Small native pecan trees are ideal for topworking to improved varieties. Only small nut size, pecan scab resistant varieties such as 'Caddo', 'Apalachee', 'Lakota', 'Prilop', 'Osage', and 'Kanza' should be used. In Central and West Texas, 'Sioux' is also a variety that has worked well in native groves. Trees should be topworked at least six feet off the ground to prevent cattle and deer from destroying the graft; working the trees out of the back of a pickup truck works well. Realize that grafted trees must receive more care than non-grafted trees; if one does not provide this care it would be best to leave the trees as natives.



### **Cultivation**

Profit margins are often narrow for native pecans. Attention must be paid to management costs, grove yields, and anticipated market prices. Most managed native pecan groves average 500 pounds of nuts per acre per year, though this is usually 1,000 pounds one year and none the next. Management practices must be directed toward maximizing the on-year crops. Increased production could help offset low prices. Nitrogen, zinc, pecan nut case bearer, and pecan weevil must be managed according to crop load. Every effort must be taken to protect the good crops and minimize expenses on light or off-year crops. Nitrogen fertilizer stimulates growth which improves production. It also benefits pasture grasses. The pasture grass should always be fertilized in the late winter or early spring. If a good crop is set, a second application should be made in late May or June. Zinc sprays are

essential for leaf and shoot growth and to fill the pecans on good years. One application should be made every year at bud break. A second application, usually with the pecan nut casebearer spray will be needed in the good crop years. Zinc is a low cost spray treatment and more than two sprays will be beneficial on the good years.

### **Management / Harvest Options**

There are numerous lease agreements in effect in Texas in regards to native pecans. Each owner/operator should try to work an agreement most acceptable to one's economic involvement. Some of the more common systems include:

1. **Owner-Operated** The owner takes care of the grove and performs all operations including harvest.
2. **80:20** This is a lease agreement where the grove manager provides all labor, all equipment, and pays all expenses. He receives 80% of the gross whereas the owner receives 20% of the gross.
3. **60:40** A lease agreement that is occasionally used on groves under minimal or no management. The gatherer harvests and markets the crop for 60% of the gross and the owner gets 40% of the gross.
4. **50:50** This is the most common form of lease agreements. The owner and the manager split the costs 50:50. The manager provides all labor and equipment and markets the crop. Gross returns are split 50:50.
5. **Lease** The lease is a common situation in which the grove is leased for a set price. Some groves are leased just prior to harvest and others are leased for a number of years.
6. **Custom Harvesters** Sometimes an owner will take care of a grove and then hire a custom harvester to come in and gather the crop.

### **Bacterial and Fungal Pathogens**

Some native pecans are susceptible to diseases that attack improved pecans such as scab and downy spot. Since natives are thought to be somewhat resistant to diseases, those that are particularly susceptible should be removed. Exceptions could be made if the tree was particularly productive with an excellent

pecan. In high pressure years a fungicide spray may need to be directed at pecan scab in order to keep the nuts and leaves healthy.

### **Insect and Vertebrate Pests**

Major insect pests on native pecans are pecan nut casebearer (pnc), hickory shuckworm, stink bugs, and weevils where they are found. Few native groves are sprayed for anything other than pnc. In years when there is no crop, the trees receive no sprays though they would benefit from zinc sprays. In big crop years, an insecticide spray for shuckworm and stinkbugs is justified. If native groves lie in weevil country the crop must be protected from weevil or their red headed grubs will destroy the kernels. (See publication E-353, "Controlling the pecan weevil). Cone and trunk traps can assist with determining when to spray. The pecans must be in the gel stage for the weevil to lay her eggs, so nut development must be watched and sprays made accordingly. Weevil emergence is regulated by soil moisture as weevils cannot emerge from sun baked hard soil. Weevils can emerge with late season rains and lay at shuck split so one must be on their toes to prevent damage.

Crows, blue jays, raccoons, squirrels, deer, feral hogs, and turkey can drastically reduce crop production and profits. In short crop years, the damage is obvious; however, it is always a problem. Hunting and trapping should be an integral part of the native management program. Remember to start control measures early in the growing season, because once you see the damage it is very hard to control the varmints.

### **Harvest**

Native pecans should be harvested as soon as possible to reduce varmint predation. Unfortunately this is typically late in the season when the trees lose their leaves. A few nuts will drop here and there in October, but most don't fall until later (November to December). It is almost impossible to shake the nuts from the tree with the leaves on the tree. Livestock should be removed from the grove at least 45 days before harvest. When the trees are shaken, numerous limbs will fall from the tree with the nuts. These limbs have died due to

shading and must be picked up and stacked prior to the harvester picking up the nuts. Once harvested, the nuts will need to be run through some type of blower or vacuum separator to remove the remaining sticks, pops and other foreign material before placing in sacks. Most natives are stored and transported to market in a type of “super sack” to reduce the labor needed to handle and move the nuts. A sample should be pulled from each sack in order to determine how well the nuts grade out. Average shell out (percent kernel) values for native pecans is commonly 41 to 42 % kernel.

**Information** on pecan production can be obtained from the "Texas Pecan Handbook" which is available for a fee at the Texas AgriLife Bookstore (<http://agrilifebookstore.org>). The Texas Pecan Orchard Management Shortcourse is taught annually the last week of January at Texas A&M University in College Station. For registration information, contact Texas A&M University Conference Services.



**Pecan blower or vacuum separator**