Tree Care Article for publication on Bubblelife

Caring for your Pecan trees

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The pecan is native to Texas, it is the official state tree, it can be grown in every area of the state and it is a part of Texas tradition.

There are five (5) primary considerations for the growth, maintenance and health of Pecan trees:

1. Sunlight,
2. Water,
3. Nutrients,
4. Pests and Disease, and
5. Pruning.

Pecan trees do NOT prune themselves; at least not by any safe, aesthetic or beneficial definition.

Pecan trees, and especially fruit (or nut) trees; need to be pruned as well as "trained". Arborists "train" Pecan trees by pruning, thinning or surgery; to:

- Manage fruit production/manage stress caused by over-fruiting;
- Properly provide shade,
- Maximize visual appeal,
- Enhance property value,
- Ensure safety to property and persons, as well as
- Vitalize the tree.

Pruning for management of fruit (nut) production. While in a residential landscape, nut production may be the least apparent priority, it is important to prevent the tree from over-fruiting by proper pruning. Over-fruiting can be an important stress on the tree. Unmanaged, multiple stresses may result in poor health, or death of the tree.

Many Pecan trees seem to have especially heavy nut production every other year, and in recent years, the heavy years of production seem to be the odd-numbered years. Thus, 2011 may produce especially large nut crops among Pecan trees. How to prune? Removing suckers, small branches, and thinning long, large, heavy limbs; removing about 10% of the limbs and branches en total (but never more than 25% in a season) every other year should suffice to accomplish pruning to manage the stress of over-fruiting.

If you value the pecans for cooking and baking; proper pruning will produce larger and more healthy nuts.

Pruning for shade. Generally, the leaves and canopy of a Pecan tree should be mostly on the outer perimeter and upper reaches of the tree. Standing near the trunk, below the tree, you should be able to see the "structure" i.e. major limbs, branches and trunk(s) of the tree and should be able to see to the top

of the tree as well as to be able to see sunlight filtering through the canopy. Too much shade can rob the turf of sunlight needed to grow a thick, full lawn to keep the topsoil in place and prevent erosion by both water and wind. A thick turf also help to retain moisture in the soil by shading the topsoil from the ravages of Texas heat in the summer.

Pruning for visual appeal. Few trees in Texas inspire the awe, majesty and beauty of a large, mature, well-maintained Pecan tree. When standing near or beneath such a tree, the interior structure of the tree i.e. the main trunk and all the large branches, should be visible to the top or to near the top of the tree. The view should be mostly uncluttered by suckers, dead wood and small branches clogging up the interior. The canopy (leaves) should be mostly around the perimeter and top-most reaches of the tree. To accomplish this, all deadwood 1" in diameter and larger should be removed; stubs left by limbs and branches broken in storms should be removed along with suckers, downward growing limbs, and small branches which add nothing to the outer and upper canopy. Trimming and thinning; removing the least desirable limbs and branches, amounting to 10% to 15% of limbs, mostly from the interior, every other year, should accomplish this.

Pruning to maximize property value. It is widely agreed that the average tree adds $4,000.00 to the value of the property. Large, mature Pecan trees, which reach heights of 100' or more in Dallas, can easily add $30,000.00 or more to the value to your property. If you were trying to market your home or are mindful that sooner or later you will; the first thing a prospective home-buyer notices is your trees. In the buyer's mind, poorly maintained trees equates to a poorly maintained home. If you are giving your prospective buyers the impression of a poorly maintained home, a $400,000.00 home can lose 20% of it's value under that impression, or $80,000.00. So, when your arborist recommends $2,000.00 every other year, do the math. The pay-off may be as much as 40 to 1. In other words, for every dollar invested in professional tree care, it may pay you as much as $40 back. A rule of thumb in pruning for visual appeal is 1/3 of the height of the tree should be a manicured trunk while the top 2/3 of the tree should be canopy. All deadwood 1" in diameter and larger should be removed; stubs left by limbs and branches broken in storms should be removed along with suckers, downward growing limbs, and small branches which add nothing to the outer and upper canopy. Trimming and thinning; removing the least desirable limbs and branches, amounting to 10% to 15% of limbs, mostly from the interior, every other year, should accomplish this.

Some home-owners prefer annual or even semi-annual trimming to remove the many suckers which Pecan trees often produce. This preference accrues to maximizing the visual appeal and there is no harm in this practice so long as enough shade is left in the upper canopy for the tree to provide itself adequate shade to its bark.

Pruning for safety. When a tree has too many limbs and branches to support, branches will die and fall; crashing down on your home, property, persons or pets. Long, large, heavy limbs should be lightened and/or "trained" to grow in a mostly upright path. Any dead wood larger than 1" in diameter should be removed. If the literal weight of the tree is decidedly on one side of the tree, or if the tree is leaning; inspect the soil around the base of the tree, especially after heavy rains or high winds/storms. Look for raised earth on the side opposite of the lean and a depression underneath the side leaning. If you see this is seen; beware! …and call an arborist immediately to further inspect the tree and root system. This is likely If a Pecan tree is in an area which has poor drainage, the tree can develop 'Texas Root Rot' or 'Cotton Root Rot', which will compromise the foundation of the tree and render it easily

blown over in high winds or simply from root rot, and being unevenly balanced. If the tree is leaning but no trouble is seen at the base i.e. no raised or depressed earth then the tree has an "Acclimated Lean". The tree has grown that was in order to get sunlight. If the tree has an acclimated lean or is apparently unbalanced, the weight on the heavy side of the tree may need to be reduced to ensure the longevity of the tree.

Pruning for health and vitality. Mother Nature likes to play the numbers game; hatching more children than can be supported in anticipation that many will not survive. Trees do the same; sprouting more branches than the tree can support. Pecan trees need to be pruned, thinned, shaped and trimmed. All deadwood 1" in diameter and larger should be removed; stubs left by limbs and branches broken in storms should be removed to prevent the spread of disease throughout the tree along with suckers, downward growing limbs, and small branches which add nothing to the outer and upper canopy. Trimming and thinning; removing the least desirable limbs and branches, amounting to 10% to 15% of limbs, mostly from the interior, every other year, should keep your Pecan tree healthy and vital.

When to prune? Let's start with general guidelines. Most trees can be trimmed any time of year as long as less than 25% of the limbs, leaves and branches are taken. Pecan trees can be pruned at any time without major setbacks however I discourage summer pruning unless it consists only of small branch removal.
A more ideal time for trimming, many arborists agree, is late Fall to early Spring. The most ideal time to trim, in my opinion, is late April, after the leaves have sprouted. This enables seeing what is dead most easily, and, the tree may begin healing over the wounds immediately.

Tree Crowding. A common problem seen in residential landscapes is too many trees fighting for too little space, resources and sunlight. With this in mind, remember that sometimes "less is more". Your trees and landscape will be enhanced when large specimen trees enjoy all the canopy space they need to gather all the sunlight they possibly can. Where large trees are competing for the same space; one or both will suffer, and be forced to grow in unnatural ways. Before this happens, choose which tree, or trees, are the most desirable, and consider eliminating the less desirable, least healthy, smaller, misshapen trees so that the best trees in your landscape can truly thrive. Smaller trees; and under-plantings such as Japanese Maples, Dogwoods, and Redbuds can fill out the smaller spaces beneath larger trees, adding complexity, color and variety without compromising the ideal conditions large trees such as Pecans thrive in.

Water supply (and Drainage)
Native pecan trees grow beautifully along rivers and streams in Texas because of water availability, good soil depth and good soil drainage. A mature Pecan tree needs 100-250 gals water per day in the hottest part of the summer. When rain is scarce, encircle the tree with a soaker hose to supply critical water needs. So, you have the mandate: Thou shalt water thy Pecan tree(s).

The best soil for growing a pecan tree is loamy to sandy loam, while avoiding heavy clay soils. Soil which remains saturated may result in root rot and death of the tree.

Pest & disease management. Pecan trees are very susceptible to Fungus, mites, aphids and other diseases. Go to your local Nursery and ask for an oil spray for Pecans (they should know what you are asking for) Mix according to the directions and use a pump sprayer ($15.00 at ACE Hardware) and

spray the entire tree, make sure you spray the top. Do this no later than 1 April and again on 1 July. If you have a large Pecan and need professional-grade spraying equipment; call in a professional.

Fertilizing. Fertilizing your pecan tree is necessary to ensure growth and nut production. Ammonium Sulfate is a common nitrogen fertilizer for pecan trees and is readily available at home and garden centers. While the 'nut gurus' have a whole book of formulas and theories concerning pecan tree fertilization, it is usually accepted that for each inch in diameter of tree trunk (a foot above the soil) you should apply one pound of fertilizer. If you don't want to rummage around the sewing box for your wife's measuring tape, you can also apply one pound of fertilizer for each year of your trees age. You should apply fertilizer twice during the growing season, once at mid-March and again in mid-May. So, if you determine you need to apply ten pounds of fertilizer (because your tree is ten inches in diameter or ten years old) you would make two applications of five pounds each. Apply evenly underneath the entire canopy of the tree. I recommend that you water your tree deeply prior to application, then water only lightly to dissolve the fertilizer just beneath the soil. This allows the feeder roots access to the nitrogen over a longer period of time.

What pecan fertilizer to use and how to apply it.
A soil pH of 6.0 to 6.5 assures the availability of essential nutrients. If the pH is too low or too high, uptake and use of nutrients is impaired. Apply lime as suggested in a soil test report to correct low soil pH.

A good, general, all-around fertilizer to use is a 10-10-10 or 13-13-13 fertilizer. The **N-P-K** code identifies the components in a fertilizer mixture: The first number shows the nitrogen (N) concentration, the second number shows the phosphorus pentoxide (P), and the third number shows the potassium content.

Nitrogen. If collecting the pecans is important to you, you need to know that pecan trees require NITROGEN to produce their nuts. Nitrogen is also important in Chlorophyl production which makes your Pecan leaves a lush, dark green, and Chlorophyl is what allows food synthesis from sunlight. AMMONIUM SULFATE is typically accepted as a suitable nitrogen fertilizer for Pecan trees. I have purchased bags of Ammonium Sulfate at home and garden centers (Lowes, Home Depot, etc.) but find it to be a lower grade which tends to clump and does not dissolve as it should.) Higher grade fertilizers will be found at Farm Co-ops.

Phosphorus. Phosphorus is important to flowering. All fruit (nut) trees have flowers whether you realize it or not. However, Phosphorus is rarely discussed in connection to Pecan nutrient deficiency.

Potassium. Potassium is generally important for healthy roots.

Zinc. Zinc is not among the three N-P-K designations however almost all Pecan trees, and the soils they grow in, are deficient in Zinc. Your pecan tree needs Zinc and I personally think that it is almost as important as water for your tree. The most common symptom of Zinc deficiency seen in Dallas is gnarled clusters of small branches, twigs or suckers on the ends of large limbs or in the upper canopy of the tree. A lack of zinc also prevents nuts from filling out.

Zinc is available at most garden centers, either in a liquid or powder form. You should spray the foilage on your trees with a zinc spray three to four times early in the growing season, beginning with leaf bud in spring and regularly every three weeks or so into mid-June. Do not spray zinc during the heat of the day, as it could cause leaf burn. To zinc your pecan trees with my preferred method, you will, of course, need a sprayer of some sort. If you have only a few, small trees you may opt for an inexpensive pump sprayer. If you have large Pecan trees; call in a professional.

The zinc solution to use is Zinc Sulfate which can easily be found at most home and garden stores in quantities as small as one pound. It is a powder that dissolves well in water, and a little actually goes a very long way in terms of applying it to your trees. Liquid Zinc is also available, however it tends to crystalize over a period of time. I personally recommend the powdered zinc because of this.

Symptoms of zinc deficiency
To spot zinc deficiencies, look for small, tightly clustered, gnarled branches which look like clusters of suckers growing in every imaginable, unnatural way; look for small leaves which curve or curl, leaf edges that are 'wavy,' discoloring in the 'veins' of the leaves, and most noticeably from a distance, long bare branches with small 'clumps' of leaves at the top, or even dead branches with no leaves. Signs of zinc deficiency in the nut are poorly filled kernals and hollow pecans.

Curling leaves
with 'wavy edges
are a sign of zinc
deficiencies

Bare, leafless limbs
or limbs with small
clumps of leaves signal a zinc problem

When to apply zinc
Zinc is easily supplemented via soil (fertilization) or via spraying on the foliage; best applied Spring and/or early Summer. The best and most immediate benefits are realized via foliar application (spraying a zinc enriched fertilizer solution on the leaves). If you've decided to apply zinc directly to the leaves of

your pecan tree, obviously the first application must wait until the spring leaves have appeared. Apply your first application when your trees 'look like' they have leaves on them. Pecan leaves appear first as light yellow-green foliage. This is the optimal time to make the first application. Avoid spraying your trees in the heat of the day since the zinc has a tendency to 'burn' the leaves. Mix your zinc solution according to directions on the package and spray the entire tree until you see 'it raining' beneath your tree. (Maybe just sprinkling.) In other words, coat the leaves of the tree sufficiently for some of the zinc solution to drip from its leaves. Additional zinc applications should be made every two to three weeks until the first of June. These early season applications should be sufficient to supply your trees' zinc requirements. If you determine your orchard requires pesticide treatment, most pesticides can be mixed into your zinc solution and applied concurrently.

When to fertilize

Your pecan trees will not burst into spring bloom until... April? Plan your first application for somewhere towards the end of March. Purchase your fertilizer, then wait for the weatherman to give you a substantial promise of rain. Your goal is to apply fertilizer just prior to a spring rain (not a promised four inch downpour, just a nice spring shower.) A second fertilizer application should be planned for mid-May. To be sure we're clear on this, if you decide to apply twenty pounds of fertilizer per tree, you will apply ten pounds at the end of March and another ten pounds at mid-May. I do not recommend fertilizer application past May. The chance of it causing damage at this late date outweighs the benefits of the nutrients it provides.

Pre-fertilizing preparations and post-fertilization maintenance

Just prior to the application, water your trees deeply. The purpose is to provide them an ample supply of water to maintain their needs for a few weeks. Once you apply fertilizer, water only lightly to dissolve the fertilizer into the soil (thus the spring shower you try to plan around.) For the next two to three weeks, maintain a light watering schedule to prevent your fertilizer from leeching beyond the reach of the trees' feeder roots, and to allow the roots to absorb as much of the nitrogen as possible. Beyond the three week timeframe, it will be necessary to resume a regular watering schedule to supply the needed moisture to your tree.

The following are common symptoms of Pecan tree ailments and their causes:

Symptom	Likely Cause
Rapid Tree Death in August or Early September	Cotton Root Rot (poor soil drainage)
Shoots Growing Thick in Bunches, Some Dead, Some Alive	Zinc Deficiency
Small Leaves Which Curve	Zinc Deficiency
Leaf Edges Wavy	Zinc Deficiency
Leaves With Dark Interveinal Discoloration	Zinc Deficiency
Nuts Shedding in May with No Hole	Natural or Pollination Drop
Nuts Shedding With Small Hole at Base of Nut	Pecan Nut Casebearer
Nuts Shedding in August During Waterstage	Any Stress or Insect Feeding
Bark Peeling Off	No Problem, Rapid Growth
Vertical Splits in the Bark with Yellow Moist Wood Exposed	No Problem, Rapid Growth
Vertical Splits in the Bark and Wood Which Is Dried Out and Grey	Freeze
Perfect Ring or Rings of Small Holes Around the Trunk	No Problem, Sapsucker Woodpecker
Large Patches of Young Green Bark Missing on New Growth	Squirrel Feeding

Pecans on the Ground With Holes Punched in The Shuck or Shell.....Bluejay or Crow Feeding
Dead Limbs or Trees, April to June with Sprouts at Ground Line.....Freeze Damage
Dead Trunk on South or Southwest Side with Ground Suckers in Spring.....Freeze
Limbs Die Suddenly Followed By Regrowth Which Also Dies.....Freeze
Sticky Sap or Honeydew Dripping From Shiney Leaves.....Yellow Aphid Feeding
Black and Yellow Areas on Leaflets in August or September.....Black Pecan Aphid Feeding
Leaves Dull Color With Many Small Brown Spots and Defoliation.....Spider Mites
Black Spots on Kernel.....Stink Bug Damage
White Fuzz on Green Shucks…Powdery Mildew (due to high humidity/excessive sprinkler irrigation)
Small Limbs Drop in Late Summer or Fall with Perfect Circle Cut in Bark.....Twig Girdler
Mass of Dark Grey Caterpillars Eating Foliage.....Walnut Caterpillar
Mass of Thick Grey Webbing Filled with Caterpillars in Late Summer.....Fall Webworm

Advice on Aphids, sticky mist, other Insect Pests; and solutions:
Sticky syrup or mist? Caused by Aphids. Use an over the counter spray to control Aphids.
Insect pests are easily treated with several applications of commonly available pesticide spray. For large trees, probably best to call in a professional with high-power spray application equipment.