I get a lot of calls concerning growing acid loving plants, particularly blueberries and azaleas. "Acid loving" plants succeed only in acidic soils like those typically found in parts of Missouri. In contrast, many plants that are native to Oklahoma are adapted to alkaline soils. However, on highly alkaline soils even some commonly grown Oklahoma plants grow poorly. These include pin oak, river birch, and white pine.

The standard measurement of alkalinity and acidity is known as pH. The pH scale ranges from 0 to 14. A pH of 7 is neutral, which is neither acid nor alkaline. Below 7 is acid and above 7 is alkaline. A pH of 5.5 is 10 times more acidic than a pH of 6.5. Conversely, a pH of 8.5 is 10 times more alkaline than a pH of 7.5. A soil test will determine pH.

The soil pH is important because it affects the availability of nutrients in the soil. Many plant nutrients are not readily available to plants in highly alkaline or acidic soils. These essential nutrients are most available to most plants at a pH between 6 to 7.5. Consequently, most horticultural plants grow best in soils with a pH between 6 (slightly acid) and 7.5 (slightly alkaline). Most Oklahoma soils are in this range. If your soil is not, then you will need to make a choice. Either choose plants adapted to your soil's pH or alter your soil's pH to fit the plants.

But before attempting to raise or lower your soil's pH, you should first conduct a soil test to determine your current soil pH.

Some soils in Oklahoma (especially those in western Oklahoma) are slightly alkaline to very alkaline, with pH's that range from 7.2 to 9.5. This is due mainly to the limestone parent material from which the soils were formed. In addition, home builders may remove topsoil during construction and replace it with more alkaline subsoil. Alkaline building materials, such as limestone gravel and concrete, and high pH irrigation water may also contribute to a soil's alkalinity.

If your soil is alkaline, you can lower your soil's pH or make it more acidic by using several products. These include sphagnum peat, elemental sulfur, aluminum sulfate, iron sulfate, acidifying nitrogen, and organic mulches.

An excellent way to lower the pH of small beds or garden areas is the addition of sphagnum peat. (The pH of Canadian sphagnum peat generally ranges from 3.0 to 4.5.) Sphagnum peat is also a good source of organic matter. On small garden plots, add a one to two inch layer of sphagnum peat and work it into the top 8 to 12 inches of soil before planting. The addition of sphagnum peat to large areas would be cost prohibitive.

Granular sulfur is the safest, least expensive but slowest acting product to use when attempting to lower your soil's pH. This may be purchased at farm or local horticulture centers.
Deicing Salts Harmful to Plants

Deicing salts can save your neck this winter, but they can spell disaster for landscape plants. Whether the salt is sprayed on the plants from passing traffic near the road or is shoveled onto plants near the sidewalk, the salt can cause damage.

Salts can adversely affect plants in several ways. Salts deposited on the surface of twigs, branches, and evergreen leaves can cause excessive drying of foliage and roots. They can be taken up by plants and accumulate to toxic levels. Salts can also cause a nutritional imbalance by changing the chemistry of the soil and can directly harm soil structure.

The most apparent damage from salts is death of buds and twig tips as a result of salt spray. As the tips of the plants die, the plant responds by growing an excessive number of side branches.

However, accumulation damage is more slowly manifested and may not be noticeable for many months. Sodium salts are the most common type used for deicing while calcium salts are used to a lesser extent. Effects usually appear as stunting, poor vigor, die back of growing tips, leaf burn or leaf drop. Winter and spring rains and large amounts of snow, such as we've experienced this year, can help prevent accumulation by diluting the salt and helping to wash it out of the root zone. Supplemental irrigation is advisable when natural rainfall is scarce.

Protect roadside plants by constructing burlap or durable plastic screens to shield them from traffic splash. If screening from traffic is not practical, try to use salt-tolerant plants such as Juniper, Siberian pea shrub, poplar and honey locust.

Avoid throwing sidewalk residue on nearby plants, including shrubs and ground cover. Use alternatives such as clean cat litter, sand or sawdust to help improve traction on ice.

 Didn’t Get Your Bulbs Planted ????

If you didn't get your spring-flowering bulbs planted, you're not alone. Many gardeners found that autumn rains delayed their bulb planting, only to find a cold snap as the rains let up.

The reason for planting bulbs in the fall is twofold. Bulbs require a period of chilling to initiate flowers. For most spring-flowering bulbs, 10 to 13 weeks of temperatures below 40 degrees Fahrenheit are needed. Bulbs also need to put down good root growth before they sprout foliage and flowers. The roots will then be able to supply the tops with water and nutrients from the soil.

Waiting until spring to plant the bulbs will not satisfy these requirements, so spring-planted bulbs will likely not bloom this year. Saving the bulbs for planting next fall is not a wise choice either. Proper storage conditions to keep the bulbs cool and dry are often hard to find in the home environment. Bulbs usually begin to soften and rot or may actually sprout before they get planted. Even under ideal storage conditions, the bulbs will lose some of their food reserves through the natural plant process of respiration.

If you haven't planted your bulbs yet, the next best choice is to get them in the ground as soon as the soil is thawed enough to dig, so that some chilling will take place. Soil temperatures must be above 40 F for root formation. Apply a mulch after planting to prevent bulbs from being heaved out of the soil due to alternate freezing and thawing. The bulbs likely won't bloom this spring, but they may bloom later in the summer, out of their normal sequence, or they may just wait until next year to bloom at the normal time.

The other alternative is to force the bulbs into bloom indoors. Remember that the bulbs will need to be chilled for as long as 13 weeks to initiate flowers. Plant the bulbs in pots of soil with the tips of the bulbs just above the soil. Moisten and store in a cold, 40-degree location, such as a refrigerator. After the chilling period, bring the pots into a cool environment, about 65 F to 70 F. Plants should be in bloom in seven to 14 days.

Some gardeners have had success with planting forced bulbs outdoors after blooms have faded. The key is to keep the foliage as healthy as possible with high light, moderate fertilizer and water. Even if the bulbs don't make a comeback, at least you will have had some enjoyment from them this year.
**Master Gardener Reminder**

The Multi-County Master Gardener Association meets the third Wednesday of each month. The Multi-County Master Gardener Association is open to anyone that has taken the Master Gardener Class in the past or are currently enrolled in the class.

They meet at the OSU Extension Center, 14001 Acme Road, Shawnee. The office is located on the southeast corner of Acme Road and MacArthur. The programs will begin at 9:30 on the third Wednesday of each month unless they have scheduled a field trip. Feel free to contact this office for more information.

**Plant & Soil Seminar Planned**

The OSU Extension Center will present a Soil & Plant Nutrition seminar scheduled for Tuesday, **March 2nd.** We will go over the principles of fertilization and plant nutrient usage.

The class will have information suitable for backyard growers, as well as, principles that could be used commercially. The meeting will be held at our office, 14001 Acme Road, Cowboy Classroom, in Shawnee on Tuesday evening, with the program beginning at 6:30 p.m.

**Home & Garden Show Scheduled**

The **Home and Garden Show** will be held **March 5th, 6th and 7th** at the **Heart of Oklahoma Exposition Center**. Home suppliers will be coming to the trade show this year, as well as, speakers on these subjects. This will of course be in addition to the usual horticulture speakers and vendors.

Master Gardeners, if you are needing hours, this is the perfect opportunity to pick some up some of those hours. Please contact this office for details. Watch for the times and speaker subjects as we get nearer to the show.

**The Scoop on Poop**

Gardeners have long used manure from various farm animals to fertilize and enrich their soil. However, recent public awareness of food-borne illnesses has left many gardeners wondering if using manure is safe.

There are a number of pathogens, including E. coli, salmonella, and listeria that can be transferred to humans from animal manure. Some animal manure may also contain parasites, such as roundworms and tapeworms.

If fresh manure is applied to the garden or compost pile, there is a high risk of causing illness to the gardener, as well as anyone eating fresh produce from that garden. Fresh manure can also be harmful to growing plants, due to being too high in available nitrogen, thus burning roots. It is safer for both plants and people to apply only composted, rotted manure to an active garden bed. Manure should be composted for a minimum of six months to reduce the risk of contamination. If fresh manure must be applied, do so during the previous fall so that it has a chance to decompose for as long as possible before the garden will be planted. Do not apply manure to actively growing fruits or vegetables.

Root vegetables and other crops whose edible portion is harvested from below ground pose the greatest risk of transmission, since they have the most contact with potentially contaminated soil. Vegetables, such as carrot, radishes, sweet potatoes, Irish potatoes, turnips, parsnips, onions and beets, should be thoroughly washed and/or peeled to decrease risk.

Leafy vegetables, such as lettuce, spinach, cabbage, chard and other greens, where the edible portion is in contact with soil, and especially crinkly leaves that catch soil particles are also at high risk for contamination. Some fruits may also be in contact with the soil, such as tomatoes that are not staked or caged, and strawberries. Thorough washing and removing outer leaves from heads of lettuce and cabbage will reduce risk. Thorough cooking is the only way to eliminate the risk completely.

Manure from pigs, dogs and cats should not be used at all in gardens or compost because they may contain parasites that can infect humans.
Pruning Large Overgrown Lilacs

The common purple lilac is a tough, reliable shrub that may reach a height of 15 to 20 feet. Unfortunately, as lilacs mature, the shaded lower portions of the shrubs usually lose their leaves. As a result, large, overgrown specimens are often leggy and unattractive. Old, neglected lilacs can be renewed or rejuvenated by pruning. Home gardeners can choose between two different pruning methods.

One way to renew a large, overgrown lilac is to cut the entire plant back to within 6 to 8 inches of the ground in late winter (March or early April). This severe pruning will induce a large number of shoots to develop during the growing season. In late winter of the following year, select and retain several strong, healthy shoots to form the shrub framework and remove all the others at ground level. Head (cut) back the retained shoots to just above a bud to encourage branching.

A second way to prune old lilacs is to cut back the overgrown shrubs over a three-year period. Begin the procedure by removing one-third of the large, old stems at ground level in late winter. The following year (again in late winter), prune out one-half of the remaining old stems. Also, thin out some of the new growth. Retain several well-spaced, vigorous stems and remove all the others. Finally, remove all of the remaining old wood in late winter of the third year. Additional thinning of the new shoots should also be done. Since lilac wood needs to be 3 or more years of age before it blooms, this pruning method should allow you to enjoy flowers every spring.

When properly pruned, an old, overgrown lilac can be transformed into a vigorous attractive shrub within a few years. Once rejuvenated, pruning should be a regular part of the maintenance program for lilacs. The shrub can be kept healthy and vigorous by removing a few of the oldest branches every 3 to 5 years.