Fertilizer is a substance, either organic or inorganic, that is applied to soil and plants to supply one or more plant nutrients essential to plant growth. Examples of organic fertilizers include manure (poultry, cow or horse), bone meal, cottonseed, or other naturally occurring materials. Inorganic fertilizers are man-made products. The three numbers listed on a fertilizer product reflect the percentage by weight of nitrogen, phosphorus and potassium (N-P-K). A complete fertilizer is one that includes all three elements. The fertilizer analysis that is correct for your soil should be based on a current soil test.

How does each nutrient help your plants?
- **Nitrogen** - is needed for all parts of plant growth—especially leaf growth and green color.
- **Phosphorus** - helps form roots, flowers and fruit.
- **Potassium** - is used for many of the chemical processes that allow plants to live and grow.

**Application methods**
- **Broadcast** - fertilizer is worked 3-4 inches into the soil before rows are made. This method is the least likely to cause plant damage.
- **Row applications** - fertilizer is applied in a strip to the side of the row before planting, being careful to prevent the direct contact of roots with fertilizer.
- **Side dressing established plants** - fertilizer is sprinkled along the sides of rows and watered into the soil. Side dressing increases the yield of most vegetables.

If a fall garden follows a well-fertilized spring garden, you’ll need only about half the spring fertilizer rate at transplanting. Ornamental trees, shrubs, and perennials are often fertilized with a complete fertilizer at the beginning of their growing season as dormancy breaks. **Do not use lawn fertilizers on gardens.** They contain too much nitrogen, and many have chemicals for lawn weed control that can injure or kill vegetables and ornamental plants. Fertilize garden beds well before you plant, working the fertilizer deep into the soil. Otherwise, fertilize in the spring before planting annual flowers and vegetables, incorporating fertilizer several inches deep. As new growth begins on perennials, work fertilizer lightly into the soil around the plants without disturbing the roots.

When fertilizing your lawn, most types of grass take 4-6 pounds of nitrogen per 1,000 square feet per year (a soil test may determine you need much less). Rates also differ depending on the type of grass, environmental conditions and growing area. Apply nitrogen in separate applications throughout the year following the directions on the label. These applications should not exceed 1 pound of nitrogen per 1,000 square feet per application. Applying granular fertilizers just before a good rain can be beneficial, as it aids in working the fertilizer down into the soil and to the roots.

**How to Apply Liquid Fertilizers**
All water-soluble fertilizers are applied by dissolving the product into irrigation water and applying it to the leaves of the plant and the soil around the plant. Dilute according to package directions. Water plants thoroughly with plain water before applying the liquid fertilizer to avoid burning the roots. Apply on dry days in either the early morning or the early evening. Avoid extremely hot days when foliage is subject to burning. Apply liquid fertilizer 2-3 weeks after transplanting. Transplanting damages root hairs. When the fertilizer reaches the roots and enters at the broken points, it “burns” them, causing further die-back.

**Safe Handling**
The mishandling of fertilizers poses a significant threat to surface/groundwater resources. Sweep up any fertilizer materials that end up on sidewalks, driveways or streets. Water in fertilizer materials after applying but do not over-water, resulting in contaminated runoff. When used correctly, fertilizer is another tool we can use to help our lawn and gardens flourish. Further information can be found at: https://agrilifeextension.tamu.edu/library/gardening/fertilizing/
In Rockwall County we are a part of the USDA designated 8a plant hardiness zone. Hardiness zones are primarily based on the plant’s tolerance to climate/temperatures. Plant tags at our local nurseries will share information in addition to the recommended hardiness zone. One important detail to consider is the amount of sunlight that the plant may tolerate. The plant tag typically classifies sunlight ranging from full sun to full shade. But what do those classifications mean?

In general, FULL SUN plants may prefer sun all day but can tolerate less if given at least a minimum of 6 hours of direct sunlight during the day. PARTIAL SUN plants like 3-6 hours of direct sunlight and may like additional filtered light of at least 2-3 hours a day. PARTIAL SHADE plants can usually tolerate a little direct morning sunlight but no more than 3-6 hours a day. They must be protected from mid-day sun. FULL SHADE plants can tolerate several hours of filtered sun but prefer no direct sun.

To understand the amount and quality of light in your yard consider the following:
1) Light changes over time. Trees mature (or die), new houses are built, fences are erected. Plant health may change as these lighting conditions change, 2) The sun’s position in the sky changes not just during the day but across the seasons, what may be full sun in the summer may not be full sun in the winter and finally consider, 3) Not all full sun conditions are the same. In North Texas, there is a difference between morning full sun and evening full sun due to the intensity of the sunlight at different times of the day. While a tag may recommend full sun, you may live in an area where that plant would wilt with full sun and thrive with partial sun. Observe your yard and assess the lighting conditions at various times during the day and throughout the seasons. Full sun is usually found on the south or west side of your yard. Full shade is usually on the north or behind sun blockers on the south side. Having a diagram of your home and yard with labeled sun/shade zones will benefit your plant selections and growing success.

Do you always plant your tomatoes in the same spot every year? Think you have a lucky spot for growing perfect peppers? You could be increasing your chances for soil-borne diseases or pests to gain a foothold in your garden. Common plant diseases that survive in soil and attack vegetables can be prevented by timely crop rotations. Even backyard gardens with limited space can benefit from the yearly rotation of vegetable and fruit crops. When rotating crops avoid planting the same crop (this includes crops from the same family) in the same location each season. Rotations should occur at the start of each planting season. For example: When you rotate tomatoes to a new location do not replace them with peppers. Tomatoes and peppers belong to the same plant family. Instead rotate with a crop from a different vegetable family.

### Vegetable families of common vegetable crops.

<table>
<thead>
<tr>
<th>Family</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amaryllidaceae</td>
<td>Chives, garlic, leeks, onions</td>
</tr>
<tr>
<td>Brassicaceae</td>
<td>Broccoli, Brussels sprouts, cabbage, cauliflower, kale, collards, radish</td>
</tr>
<tr>
<td>Cucurbitaceae</td>
<td>Cucumber, gourds, melons, squash</td>
</tr>
<tr>
<td>Umbelliferae</td>
<td>Carrot, celery, cilantro, dill, parsley</td>
</tr>
<tr>
<td>Leguminosae</td>
<td>Beans, peas, peanuts</td>
</tr>
<tr>
<td>Solanaceae</td>
<td>Tomato, potato, eggplant, pepper</td>
</tr>
<tr>
<td>Chenopodiaceae</td>
<td>Beets, Swiss chard, spinach</td>
</tr>
</tbody>
</table>

For information contact:

Todd Williams - County Extension Agent - Ag/ Natural Resources
972-204-7660 or email: tk-williams@tamu.edu

Texas A&M AgriLife Extension provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation or gender identity. The Texas A&M University System, U.S. Department of Agriculture, and the County of Commissioners Courts of Texas Cooperating.
benefits of wasps

Most people have a negative idea of wasps from being on the receiving end of a close encounter with one. Paper wasps, yellowjackets, and hornets are the most well-known stinging wasp varieties. All 3 are social insects which live in nests they build and defend cooperatively when they feel their nest with queen, eggs, larvae, and food supply is threatened. However, only females can sting, and they rarely sting away from the nest while foraging for food. Wasps are considered beneficial insects because they feed their larvae insects that are considered pests of shrubs and flowers, including tomato hornworms, armyworms, loopers, flies, and beetle larvae.

Solitary wasps attract much less notoriety because they encroach less on human living space. They rarely sting humans unless trapped, and their stinger is used primarily for subduing prey. Most are entirely beneficial because they feed on spiders, crickets, cicadas, and caterpillars. The 3 most common solitary wasps in our area are cicada killers, cricket hunter wasps and mud daubers. Cicada killers are quite large at 1½ inches long and are rusty red in color with black and yellow stripes on the abdomen. The males cannot sting, and the females dig holes in the ground, lay eggs, and stock the nest with paralyzed cicadas. Cricket hunter wasps are 1/2-5/8 inches long, and dull black with dusky wings. They sting, capture and transport live crickets to an underground hole for their larvae to feed on when hatched. Mud daubers are 1 inch long and vary from dull black with bright yellow markings to iridescent blue-black with slender bodies. They build small tube-like nests of mud under eaves or on walls. Mud dauber larvae are fed spiders, including the poisonous brown recluse. If they can avoid human interaction, wasps can serve a beneficial purpose. Check out pictures: txbeeinspection.tamu.edu/photo-gallery/bees-wasps/

summer gardens

June
First half of the month, plant the following by direct seeding: pepper and large tomatoes. Last half of the month, continue planting pepper, plus large pumpkins, small tomatoes and watermelon by direct seeding.

July
First half of the month, plant pepper, large and small pumpkins by direct seeding, and pepper and tomato transplants. Last half of the month, plant tomato transplants, along with okra and muskmelon seeds.

August
Plant Irish potato "eyes" along with mustard and okra seeds in the first half of the month. Last half of the month, plant lettuce seeds, along with broccoli, cabbage, Brussels sprouts and cauliflower transplants.

poison ivy

Poison ivy may differ in appearance according to geographical region. It may resemble a small shrub or grow to become a large-trunked vine. The leaflets may be smooth or slightly hairy, with edges being lobed, toothed or smooth. Remember, "leaves of three, let it be."

Pokey Learns a Lesson

WOW!
Fertilizing carrots...
Rotating crops...
and a sandwich?!
you really ARE beneficial!
RCMGA Tour of Gardens
Tentatively rescheduled for Saturday, September 26, 2020.

Wednesday Gardening Hot Line: “Ask a Master Gardener!” Volunteers will be answering calls and emails every Wednesday from 10:00 a.m. until 12:00 p.m. Call (972) 204-7660 or email us at: rockwallmg@ag.tamu.edu.

Follow us on social media...Rockwall County Master Gardener page on Facebook, Instagram @rockwallcountymastergardener, and our RCMGA YouTube channel. We are just getting started so check back often!