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Extension Solutions for Homes and Gardens
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"The Basics of Fertilizer Buying and Applying"

What Plants Need:
Out of the 18 nutrients known to be essential for plant growth, there are only three that are most often lacking in soils. These three nutrients are nitrogen, phosphorus, and potassium, and every fertilizer product sold is required by law to have a guaranteed analysis of these nutrients in that order. The three numbers on the bag represent what percent of the total bag weight contains these nutrients. For example, a 10-10-10 fertilizer contains 10% of each nutrient. So what's in the rest of the bag? The remaining percentage is "filler" which enables you to apply the fertilizer evenly over a large area. Each of these nutrients may be needed in different amounts depending on the types of plants you are growing and how your soil has been treated previously. Of all the nutrients, nitrogen is the most limited in soils and must be reapplied annually.

Up, Down, and All-Around:
The "up, down, all-around" catch phrase is a simple way to remember why plants need nitrogen, phosphorus, and potassium. Very simply, the nitrogen in fertilizers makes plants grow "up" with new leaves, shoot growth, and turning their leaves green. Phosphorus makes plant roots grow "down" and is important in establishing new plants or seeds. Phosphorus also improves the quality of flowers, fruits and vegetables. Potassium (or potash) is an "all-around" important nutrient for plant growth, fruit development, and resistance to diseases and other plant stresses.

Which Fertilizer to Use:
The easiest way to determine which nutrients your soil is lacking is by taking a soil sample for testing. Soil tests provide recommendations on the fertilizers needed for ideal plant growth. Soil tests also determine your soil pH and how much lime to apply, if any is needed. Maintaining your soil pH is critical to making sure that the fertilizer you apply can actually be taken up by plants' roots, otherwise you are wasting your time and money on fertilizer! Applying the correct amount also protects the environment from excess nutrients. Soil tests should be done once a year for the first few years after planting anything new. Once you have a couple of test results to compare from year to year, you can more easily predict future fertilizer needs based on your soil type. Go to www.soiltest123.com for more information about soil testing or contact your local Extension office at 1-800-ASK-UGA1.

Good Rule of a "Green" Thumb:
All fertilizer applications should be based on the amount of nitrogen applied since this is the most important nutrient. Nitrogen is also the easiest nutrient to misapply and excess nitrogen will increase over-growth, water demand, and plant susceptibility to insects and diseases. A good rule to follow is to never apply more than 1 pound of nitrogen per 1,000 square feet at any one application. To quickly determine this maximum rate, all you have to do is divide 100 by the first number on the fertilizer bag (nitrogen). The result is the number of pounds of that product you'll need to supply 1 pound of actual nitrogen per 1,000 square feet. For example, if you are using a 10-0-15 fertilizer, then divide 100/10 = 10 pounds. Therefore, 10 pounds of 10-0-15 fertilizer would provide exactly 1 pound of actual nitrogen over an area of 1,000 square feet.

Weed & Feed…A Mixed Bag:
Be extra cautious when using fertilizer products that are labeled as "weed and feed". These products can be very convenient, allowing you to apply an herbicide for weed control and a fertilizer in a single application. However, you should be very careful and read the label on these products. The herbicide components of these products are usually very selective and can only be applied in certain areas. For example, a weed and feed labeled for lawns can be very useful at controlling broadleaf weeds such as dandelion and chickweed without killing your turfgrass. However, this same product can NOT be used to

fertilize trees, shrubs, or flowers because that same herbicide could kill these plants too. Even though you might not thing of your landscape plants as “weeds”, a broadleaf herbicide doesn’t know the difference between a dandelion and a petunia. Also, if you have tree “islands” planted in the middle of your lawn (perhaps a valuable Japanese Maple specimen), you might think twice before using that same weed and feed anywhere near the root zone of these trees. Alternatively, there are selective preemergent herbicides that are packaged as weed and feed products and are safe to use around trees and shrubs. In this case, these products are not usually labeled for use on lawn grasses. This is why it is very important to read and follow the label explicitly. Any accidental mis-application can end up costing you a lot of money and possibly kill the wrong thing. Unfortunately, there isn’t anything you can do to fix herbicide injury on plants after it happens!

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