

## Understanding fertilizer

The first thing to look for on a fertilizer container is the analysis. The analysis is a series of three numbers such as 16-4-8. These numbers show the guaranteed amounts of nitrogen (N), phosphorus (P) and potassium (K) and always in that order.

A fertilizer labeled 15-2-15 contains 15 percent N, 2 percent P and 15 percent K. A hundred pound bag of this analysis contains 15 lbs N, 2 lbs P and 15 lbs K. the sum of these numbers is 32 (15 lbs + 2 lbs + 15 lbs = 32 lbs). Other chemical elements, fillers and conditioners make up the remaining 68 lbs.

In large part the other elements are a component of the nitrogen, phosphorus and potassium formulation and incidental trace elements. The fillers and conditioners are required to keep the fertilizer in a granular form. If the fertilizer contains significant amounts of secondary plant nutrients such as calcium, magnesium, copper and sulfur, they will usually be listed on the back of the container.

The label lists the types of nitrogen in the mix. You'll see nitrate nitrogen, ammoniacal nitrogen, water-soluble organic nitrogen, urea nitrogen and water insoluble nitrogen. Plants use nitrate, water soluble organic and urea nitrogen fairly quickly. They won't last long because they're rapidly leached out of the soil by rain and irrigation. Ammoniacal and water insoluble nitrogen will last longer in Florida's sandy soils.

Research in Florida is revealing the importance of selecting a fertilizer that contains as much nitrogen as potassium or half as much nitrogen as compared to potassium. An example is 15-2-15 (equal amounts of nitrogen and potassium) or 6-12-12 (half as much nitrogen as compared to potassium). Such fertilizers help maintain the correct balance of nitrogen to potassium in the soil.

If phosphorus is already adequate based on the results of a soil sample or if you are dealing with an established lawn, landscape or garden, which has been fertilized over a period of years with a complete fertilizer containing phosphorus, select a fertilizer with low or no phosphorus. Examples include 15-2-15, 16-4-8 and 10-0-10. The center number should be low. Phosphorus has a tendency to buildup in the soil, interfering with the uptake of other needed nutrients. And, excess phosphorus can end up in our groundwater and surface water as a pollutant.

Finally, consider using a slow release fertilizer with at least 30 to 50 percent of the nitrogen in a slow release form because it is available to the plants over a long period of time. Look for terms like "slow release," "controlled release," "sulfur coated urea," "resin coated," "plastic coated," "IBDU," "water insoluble" and "Urea formaldehyde."

Larry Williams, UF/IFAS Extension Agent, Okaloosa County, June 30, 2011