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**NURSERY, GARDEN CENTER, GREENHOUSE & PATIO**

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**Fertilizers- What the Numbers Mean**

Many people express frustration when it comes to selecting fertilizers at their local garden centers. They are often confused by the analysis (express by three numbers such as 25-3-6) and the use for all the different fertilizers they see. Fertilizers are mixtures of various major and minor nutrients that are necessary for plant growth. The major nutrients are nitrogen, phosphorus, and potassium, and are often referred to by their chemical signs of N, P, and K respectively. These three nutrients are expressed as a percentage by weight in the analysis of the fertilizer. For example, and analysis reading of 25-3-6 means that a minimum of 25% of the produce its nitrogen, at least 3% is phosphorous, and at least 6% is potassium.

Minor nutrients are not always listed on the labels, but when they are, they are also expressed as a percentage by weigh. Minor nutrients are also necessary for plant growth but in much smaller amounts than the major nutrients. These include iron, boron, copper, manganese, molybdenum, sulfur, calcium, and others.

Many Colorado soils are low in available iron and have a high pH, so it’s a good idea to buy fertilizers that have both iron and sulfur listed as minor nutrients. Sulfur, besides being a plant nutrient, helps lover the pH which makes iron more available to plants for growth. For this reason we usually recommend fertilizers that have several percent of each of these nutrients.

Major nutrients of N, P, and K are obviously needed in larger amounts than the minor nutrients. Of these, nitrogen is usually needed in larger amounts than the other two. Nitrogen is the major nutrient used in plant growth. It is mainly responsible for the deep green color of health plant leaves and is also used rapidly during the growth phase. Nitrogen also tends to leach of out soil quickly. For this reason it us usually suppled in the largest quantity in fertilizers labeled for lawns, tree/shrubs, and other plants where leaf growth is the major consideration.

Many higher-quality fertilizers use slow-release nitrogen in their formulas. These are listed as polyon, water-insoluble nitrogen (WIN), super urea, sulfur-coated-urea, and others. These fertilizers really help the homeowner and the environment by slowing the release of a very leachable nutrient. This allows more even feeding for the plant and less run-off during rains.

Phosphorous functions in plants in the high-energy compounds created during the decomposition of sugars and starches. It is instrumental in producing strong growth and root systems, producing high yields of flowers/fruit, and also the maturation of fruit. Phosphorous is immobile in the soil and doesn’t leach away. Therefore it is usually not supplied in as large of a quantity as nitrogen.

Potassium functions in many enzymatic reactions in the plant but does not become a part of the compounds. It is needed in much smaller amounts than nitrogen and rarely exceeds 10% of the total fertilizer makeup.

Most Colorado soils have fairly sufficient amounts of phosphorous and potassium, there for most lawn and tree fertilizers use these sparingly. For these plants look for a fertilizer with a 3-1-1- to 5-1-1- ratio (15-3-3 or 25-5-5). If you are fertilizing flowering plants in the garden a ratio of 1-1-1 to 1-2-1 (10-10-10 or 5-10-5) might be better.

Remember, the experts at your local garden center can answer most of your questions about which fertilizer is best in your situation. They will be able and anxious to help you.