

Plants Gotta Eat!

AGRI-VIEWS

by Chuck Otte, Geary County Extension Agent

I was recently talking with some folks about their roses. In the course of the conversation they commented that the roses just weren't growing as well or blooming like they thought they should. I ran through the typical litany about sunlight, mulch, watering, etc. But when I asked about their fertilization I got a bit of a blank look. They hadn't fertilized the roses since they planted them. At least I knew where I needed to start!

Plants are living, breathing entities. While they are very different from us we do have similarities. We both need food, water and air. Humans breathe in the oxygen in the air and exhale carbon dioxide. The plants "breathe" in the carbon dioxide and breathe out oxygen. Wow! Isn't that convenient? We need carbohydrates, protein, a certain number of calories and numerous different vitamins at low quantities. Plants need nitrogen, phosphorus, potassium and a lot of micronutrients, in low amounts.

The human body takes the water we drink, the oxygen we breathe and it interacts with the food we eat to give our body the compounds that it needs to stay alive. If food becomes limited we don't have as much energy, we lose weight and if we go too long without any food or water, we will die. Plants combine the nutrients that their roots take up along with the carbon dioxide that it "breathes" in through it's leaves and the water and through photosynthesis it makes products for the plant to grow and stay alive, as well as produce flowers and fruits (seeds).

It doesn't take very many days without food and water and humans, or any creature, can be in trouble. Plants have an amazing ability to survive for long periods of times with limited inputs. If we don't fertilize our plants they can live for years on just what nutrients become available in the soil. But how they grow, bloom and produce is going to be directly related to the food, nutrients, and water that it has available. There is a certain natural nutrient cycling that occurs in the soils as old plant parts decompose. If the nutrients are limiting a plant will only grow as much as is allowed by the most limiting nutrient.

The nutrients that plants need the most of are nitrogen, phosphorus and potassium. Because we live in a semiarid part of the country our soils tend to be naturally high in potassium. We rarely have to fertilize with potassium. Nitrogen is the nutrient that stimulates green growth. The more nitrogen you put on a lawn (to a point) the more and faster the grass will grow given adequate water. Phosphorus is critical to stimulate blooming and fruit/seed production as well as good root growth. If phosphorus is very limiting plants tend to just not grow, not bloom and not produce fruit or seed. Sometimes gardeners will find that they have huge tomato plants but very few blossoms. They have over fertilized with nitrogen and need to compensate by adding more phosphorus fertilizer.

There are times when we don't want to encourage excessive growth so will fertilize just enough to keep the plant alive. The general rule of thumb for flowers and vegetable gardens is to fertilize so you are applying one pound of nitrogen per 1,000 square feet. How much fertilizer you use depends on the concentration of nutrients. For flowers and gardens I often encourage using a fertilizer with equal amounts of nitrogen and phosphorus (the first two numbers pm a bag of fertilizer. This avoids getting these two out of balance. How often you fertilize will also depend on what you are growing and the levels of soil nutrients based on a soil test. But if you want to have a good garden and prolific blooming flowers, you've got to give those plants some food!