

Nutrients for Garden Soils

By Joe Larue

As is the nature of all living things, growing things need nutrients to keep growing. Even though most fertilizer packages list three plant nutrients — nitrogen, phosphorus and potassium (N-P-K, in that order) — there are many more.

NITROGEN pushes leafy growth. When given too much nitrogen, some plants will not flower; given too little, plants may have pale-green, or yellowish older leaves.

PHOSPHORUS encourages good blooming and root development. Too little phosphorus causes stunted plant growth and purplish younger leaves.

POTASSIUM is directly involved in photosynthesis (the process of converting sunlight to energy). It also encourages disease resistance and sturdy stems. Without enough potassium, a plant may have yellowish or spotted older leaves.

CALCIUM encourages strong cells and root growth. Heat or drought may make it difficult for some plants to absorb calcium. If plants don't get enough calcium, they may drop blossoms, show yellow edges on the leaves or have curled leaves.

SULFUR is necessary for the formation of chlorophyll (the green pigment in plants that converts light to energy). It promotes healthy roots and lowers soil pH. Without enough sulfur, a plant's new leaves may appear yellowed. Deficiencies in Montana are uncommon, however.

MAGNESIUM is a component of chlorophyll. Acidic, sandy soils often contain less magnesium than alkaline, humus-rich or clay soils. Too much nitrogen or potassium may make it difficult for plants to absorb magnesium. Without enough magnesium, plants may have yellowish older leaves with green veins.

MANGANESE is involved in the formation of chlorophyll and helps plants to use nitrogen. It is more available to plants in acidic soils than in alkaline soils. Without enough manganese, plants may have yellowish older leaves with green veins.

IRON is more available to plants if the soils is acidic. Lowering the soil pH (by adding organic matter or sulfur) may be more beneficial than adding more iron. Since the iron is also associated with chlorophyll, a lack of iron may result in stunted plant growth and younger leaves turning yellow.

