IPMINFO

Integrated Pest Management for the Home Environment

TITLE

GARDEN FERTILIZERS

Read the label on the fertilizer bag or package. The three numbers represent the percentages of nitrogen (N), phosphorus (P), and potassium (K). As an example 6-20-10, a 100 pound bag contains 6 pounds of actual nitrogen, 20 pounds of P205, and 10 pounds of K20. Nitrogen is used by the plant for vegetative green growth. Phosphorus hastens maturity, is important for the formation of seeds and fruit, and increased root growth. Potassium is necessary for photosynthesis, the rigidity of stalks or stems, and overall vigor of plants. There are dry, liquid, slow-release, organic pelleted and soluble types of fertilizer.

Application of a dry fertilizer can be accomplished by either mixing it in with the soil before planting, in narrow bands or furrows 2-3" deeper than the seeds or plants (preplant); or as a side-dressing after plants have germinated and are growing (post-emergence). Water well to dissolve dry fertilizers so they can reach the root zone. Follow label directions with liquid fertilizers. You can mix the liquid in a hose sprayer and feed the entire garden.

Organic fertilizers act more slowly than synthetic fertilizers. Bone meal, cottonseed meal, blood meal, fish emulsion, manures, and hoof and horn meal are examples or organic fertilizers. They depend on soil organisms to break them down to release their nutrients. They are effective only when soil is moist and soil temperature is warm enough for the soil organisms to be active.

The use of fresh organic matter too close to the planting time of vegetables may cause burning from rapid decomposition, formation of toxic organic compounds, and nitrogen being unavailable because of bacteria utilizing it. Organic waste materials such as leaves, manure from livestock and poultry and the organic portion of urban trash collection can be salvaged and used as fertilizer, mulch or compost.

It makes no difference whether phosphorus, potassium, and other nutrients are from organic or inorganic sources, because plants absorb the same ions. There are no generally accepted scientific experiments that support the superiority of either organic or inorganic nutrient sources. Often a combination of the two forms is desirable and gives better results than either one used alone.

The pH of soil has a distinct effect on the availability of essential nutrients. The pH scale is a numerical chart used to indicate the relative acidity or alkalinity of a given substance. The scale is from 0 (extremely acid) to 14 (extremely alkaline), pH of 7 is the neutral point. Iron and manganese are commonly deficient in basic (alkaline) soils because the soil chemistry limits the amount of iron available for plant utilization. Phosphorus and boron also tend to be unavailable, resulting from reactions with calcium. Phosphorus and boron also tend to be unavailable in very acid soils. Copper and zinc have reduced availability in both highly acid and alkaline soils. Garden vegetables do the best in slightly to very slightly acid soil (pH 6). Soil can be tested by a professional laboratory or with a commercial kit, available through scientific supply stores or catalogs.

A good water and fertilizer schedule promotes healthy garden plants which yield better home grown vegetables and fruits. Healthy plants are less susceptible to and tolerant of insect damage and fungal diseases.

Bibliography

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