

**All Gardens
Great & Small**
by
York Co.
Horticultural Agent
Tom Becker



Understanding Fertilizer

This is the first article in a monthly series on soil and plant nutrition. Managing nutrients for a gardener means applying fertilizers properly, improving garden soils with organic matter and protecting soil in the winter.

Fertilizers are not plant food! Why? Although it is common practice to call them plant foods, plants produce their own food using water, carbon dioxide, and energy from the sun.

Seventeen plant nutrients are essential to plant growth. Nitrogen, phosphorous, and potassium are considered fertilizer macronutrients those needed in the largest quantities.

What does the 10-10-10 symbol stand for on a bag of fertilizer? All fertilizers are labeled with three numbers. These three numbers give the percentage by weight of nitrogen (N), phosphate (P₂O₅), and potash (K₂O).

Nitrogen is important for leaf and stem growth and provides the rich green color in a plant. Phosphorous (derived by the plant from phosphate) provides for root and flower growth. Potassium (derived by the plant from potash) helps build plant tissue and aids the production of chlorophyll.

A fertilizer is said to be complete when it contains nitrogen, phosphorus, and potassium. Examples of commonly-used fertilizers are 10-10-10, 16-16-16, and 20-10-5. An incomplete fertilizer will be missing one of the major components. A 100-pound

bag of 10-10-10 would supply 10 pounds of actual nitrogen, 10 pounds of available phosphorus and 10 pounds of soluble potash. The remaining 70 pounds would be a carrier like limestone.

Slow-release fertilizers release nutrients (makes them available to the plant) over an extended period. Caution is needed when slow-release fertil-

izers are applied around trees or shrubs, as the later nutrient release may keep the plants growing into the fall when they should be hardening off for the winter.

Cottonseed meal, blood meal, bone meal, hoof and horn meal, fish emulsion and all manures are examples of organic fertilizers. Organic fertilizers usually contain relatively low concentrations of actual nutrients, but they perform other important functions which the synthetic formulations do not. These functions include: increasing organic content of the soil, improving physical structure of the soil, and increasing bacterial and fungal activity.

How do I choose a fertilizer for my garden? Fertilizer materials are prepared in various

ways to meet the needs of specific plants. They include dry, liquids, solubles, slow-release, tablets, spikes and packets. Your best bet is to take a soil sample, have it tested and follow the recommended amounts of fertilizer.

Fertilizers are salts, much like our familiar table salt except that they contain various plant nutrients. If tender plant roots are close to the fertilizer granules, water is drawn from these roots. Plant cells in these roots begin to dehydrate and collapse, and the plant roots are 'burned' or dried out to a point where they cannot recover.

It is important to apply fertilizer according to instructions at the proper time and rate to prevent water quality problems. Avoid getting fertilizer on side-

walks and driveways where it can easily wash into storm drains and, eventually, into creeks, streams, and rivers. Nutrients, particularly nitrogen, become a water quality problem through leaching or run-off. Leaching is the effect of nutrients being washed through the lower soil layers and into the groundwater supply. Leaching and run-off not only rob your soil of nutrients, but also lead to erosion. Provide your soil with holding power by planting groundcovers in bare spots.

Any questions can be directed to Tom Becker, horticultural extension agents, at (717)840-7408.

Information adapted from Consumer Horticulture: Guide to Nutrient Management, Diane Relf.

Raising \$en\$ible Kids

HONESDALE (Wayne Co.) — Would you like for your children to be money smart? Do you hope they won't make some of the same mistakes you've made with money?

Money is a complicated subject with lots of emotional ties. It is easy to pick up bad money habits like spending more money than you have and not saving any money.

Penn State Cooperative Extension and the Alabama Cooperative Extension System are co-sponsoring a satellite conference Tuesday, February 24 from 10:45 a.m.-noon on raising "money smart" kids.

\$en\$ible Kids will be broadcast at the Wayne County Cooperative Meeting room in the basement of the Wayne

County Courthouse, Honesdale. This program will help parents, teachers, and others who work with youth to explore principles that underlie the development of financial responsibility in children, learn practical ways parents can help their young children develop "money sense," and use these principles according to the child's developmental stage.

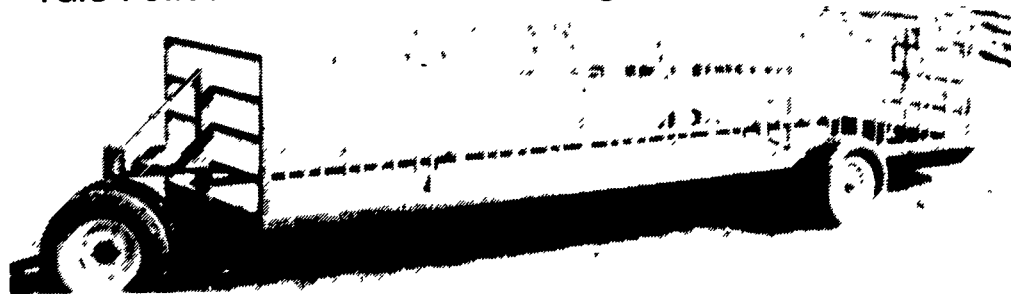
Call the Wayne County Cooperative Extension office (717) 253-5970 ext. 239 to make your reservation. The program will be videotaped. If you or your group would like to borrow the tape or have Debra Bryant present the program to your group, call the number above to schedule.

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