

Feeding Plants – Your Crash Course in Fertilization

What We Recommend

Introduction - Please take this commentary with a grain of salt. Your corner of the world may have soils or conditions that work better with unique amendments or different techniques for optimum plant nutrition and health. And raising plants is not an exact science. It is an endeavor intertwined with science, tradition, superstition and nowadays, even non-science emotion-based political correctness. We urge you to consult a successful garden person in your locale. Many garden centers have experienced experts on-site and will freely provide you with good information in exchange for your patronage.

For the most part we recommend common complete or general fertilizers (as we define them below), along with very simple ways of applying them. We find these methods to work well for us in everyday use and as a minimum application. We define common complete or general fertilizers as fertilizers with the following attributes:

- Dry, not-readily-soluble, granular fertilizer. These are manufactured in pellet form, with particles larger than coarse sand but smaller than peas. They are meant to be applied in their dry form, and are activated by irrigation or rainfall.
- Containing a balanced (or not largely unbalanced) ratio of the three major nutrient elements: Nitrogen, Potassium and Phosphorus. Examples of these are 7-7-7, 10-10-10, 7-12-5, 3-2-2 and so on. The numbers represent the percentage of each nutrient, regardless of volume. Any of them can get you where you want to be; it's just that the amount you use will vary with the formulation: in other words you'd need to use double the volume of a 10-10-10 as you would a 20-20-20.

As to the amounts to use, ask a local professional or follow the recommendations on the container.

Sometimes we may recommend acidifying fertilizers. These are formulations that may or may not be balanced, but nonetheless yield an acidic pH. Certain plants prefer acid conditions.

On the other hand, certain plants benefit from the opposite of acid, that is "basic" or "alkaline" soils (although this is not usually the case). In these situations we recommend applications of both fertilizers, plus lime (limestone).

Where And When To Apply Fertilizer

Introduction - Most fertilizers contain a certain amount of salts. These salts are not like table salt as we know it, but the minerals containing the fertilizers often have salt-like compounds attached to them. These are natural things. Salts can be culprits of root or leaf "burns". At times of the year when plants are actively growing, thereby rendering roots and leaves in a tender stage, these salts can do damage if left on tender foliage or applied too heavily or released too quickly. On the other hand, during times of plant dormancy, salts may have little to no effect on plant parts. Eventually, salts are washed through the soil or broken down by the soil into harmless elements.

Planting Hole Application - Sometimes you are advised to put fertilizer in the planting hole. This is only a good idea if you are going to mix it with the planting hole soil and the back-fill soil. You don't want large concentrated quantities of fertilizer in direct contact with roots.

Surface Application - In other cases you are directed to apply fertilizer to the soil surface. Although not as fast working as when mixed in the soil, surface applications are somewhat safer in terms of potential burning, as the fertilizer must first dissolve then move its way downward by means of irrigation or rainfall; all in all, a safe and gradual process. When doing surface application you want to distribute the granules; not drop them in a pile. For example, with a new plant I'd scatter the granules from 1-6" out from and around the perimeter of the soil ball

region. With an established plant I'd scatter them from the center of the plant, out to the drip edge of its branches.

"When" Determines "How" – When plants are dormant, you can scatter granules over, down and through a plant's canopy without worry. However, when plants are actively growing you must either scatter the granules under the plant's canopy, or wash or brush the granules off the tender foliage so they won't (burn) damage it.

Ideal times for fertilizer applications are the end of winter. This allows two to four weeks for the soil to absorb and plants to "charge up" with the nutrients. Then once spring bursts forth, so do your plants.

Mulch Interactions – True mulches (like fresh wood chips) are un-composted. These will suck up nutrients in their composting process, thereby "tying up" your fertilizer for quite a while before releasing it to the soil and plants. Therefore, to beat this scenario, whenever you intend on applying both mulch and fertilizer in close time proximity of one another, put the fertilizer down first. And if you've got an extra few seconds, scratch in it with a rake to get it started downward. Then apply the mulch over top. Your nutrients will work in a timely fashion and your mulch will do its job longer.

Classifications of Fertilizers

Organic vs. Inorganic Fertilizers - As a rule, inorganic fertilizers are quicker acting and shorter lived than organic ones. The reason for this is that organic compounds must first be broken down into inorganic components (by time and biological processes) in order for the chemicals to be utilized by the plant. Because organics work slower, you will often see them sold as "non-burning" because their activity is snail's pace. Both types have their place.

"Compost" is a form of organic fertilizer, albeit usually low in nutrient value. Composts seem to provide benefits more in terms of improved water holding capacity, lessening soil compaction and other positive biological enhancements.

Organic "tinctures" or "teas" are short lived, garden-friendly, but of low nutrient value.

Mulches made from living tissues (wood chips, pine needles, leaves, etc.) eventually break down and turn into compost. The larger the particle, the longer it takes to decompose.

Neither composts, teas nor mulches are very effective at adding lasting substantial nutrients to soils. They are desirable and functional in accomplishing positive things for soils but are not substitutes for real nutrient charging.

Liquid Fertilizers - Also, liquid fertilizers (aka Miracle Grow hose-on type products) are much quicker acting than granular formulations. They are usually the shortest lived of all because they are already dissolved, plus they must be applied in very low concentrations so as not to cause burning. These are very effective for getting quick results; just don't expect them to hang around very long: two to three weeks of activity is usually optimistic. (Some new-tech liquids will eventually change this but they are not widely available yet). Liquids do get you quick results.

Tweaking it

Second Applications - For heavy feeding plants, a second application of fertilizer may be beneficial in creating maximum growth, deep foliage coloring and heavy flower production throughout the balance of the season.

When To Stop - When fall approaches, the general opinion is that you want the nitrogen component to be used up. The theory is that nitrogen is the main ingredient encouraging active growth. Active growth is desired in the first two-thirds of the season, but when approaching fall's frost and freeze, tender growth as well as flower buds on fall bud-setters (Azaleas and macrophylla Hydrangeas are examples) can be severely damaged or killed. We want these growing tips and buds to be slowing down and "hardening off" at that point in the season. That means we shouldn't be applying fertilizers with significant levels of nitrogen past early to mid summer, and these we want to be quick-acting fertilizers; not slow-releasers that will dump a heavy charge late in the season. (Note this recommendation does not carry over to turfgrass, that benefits from fall nitrogen applications.)