

A Fertilizer Primer: What's In that Rose Food?

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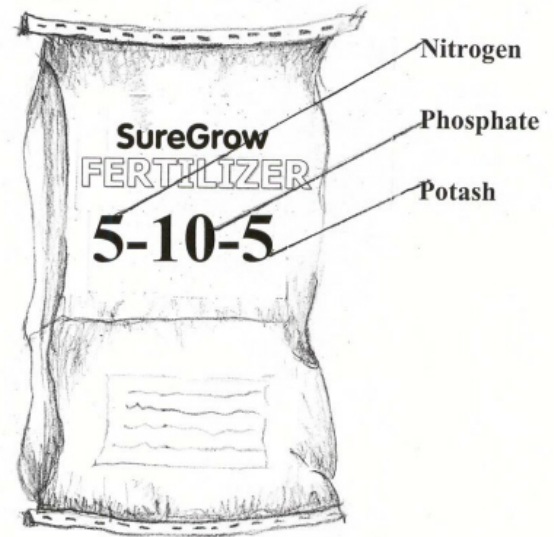
Roses love to grow. Given minimal care they will survive and produce flowers. With a regular feeding program and a varied diet, roses will thrive and produce armloads of large, beautiful blooms. There are many types of fertilizers, liquid (soluble) or dry (granular), organic or in-organic. Find a program that works for you, but do it on a once-a-month basis during the growing season.

ORGANIC VS. IN-ORGANIC: Organic (or natural) fertilizers are derived from any formerly living plant or animal matter. Most commonly used are blood meal, cottonseed meal, bone meal or superphosphate, alfalfa meal and fish meal. Manures - chicken, rabbit and steer are also in this category. Organics are generally slower-release, as they require decomposition by soil micro-organisms before being usable by the plant. They supply benefits to the soil in addition to food for the plants, and should therefore be a regular part of your amendment program.

In-organic (or chemical) plant foods are man-made compositions, formulated for various speeds of release, but generally provide an immediate food source for our heavy-feeding roses, as compared to organic foods. Brand name manufactured rose foods include Bandini , Fertilome , Miracle-Gro , RapidGro , Sterns , Peters , etc. Roses utilize natural and chemical food sources equally, and benefit greatly from use of both, on an alternating basis.

"BALANCED" ROSE FOOD: The term is used frequently, and simply means that a fertilizer has a blend of Nitrogen, Phosphorus, and Potassium (N-P-K), though not necessarily in equal parts, in a formulation beneficial for roses. Nitrogen, Phosphorus and Potassium are the three major ingredients required by all plant materials, in varying proportions, dependent upon the plant's needs. Fertilizers, by law, have a numerical N-P-K ratio printed on the container. A 6-12-6 ratio means that the mixture contains 6% Nitrogen, 12% Phosphorus and 6% Potassium. It contains 24% total nutrients and 76% filler material. 6-12-6 is considered a Balanced Rose Food, as it supplies the basic ingredients in proportions beneficial to roses on a continual basis.

Roses utilize each ingredient at differing times of the growth and blooming cycles. More Nitrogen is needed for early spring growth of stems and foliage, plus continual moderate supply during the entire growing season. Phosphorus is for roots and blooms; a higher phosphorus food should be supplied from 3 weeks before blooming until blooming. Potassium provides health for the plant, a catalyst for Nitrogen and Phosphorus. It also builds in hardiness to heat, drought and cold, and is therefore a good supplement just prior to the dormant season.



Each of the three ingredients may be purchased separately for addition to specialized feedings.

NITROGEN SOURCES When we add organic matter to our soil, its nitrogen content is not immediately available to the plant; it must first be broken down during the decay process. During that process, matter is transformed first into ammonium, then to nitrite, and finally to nitrate nitrogen forms. While the process can take from several days to years, various compounds are formed which are used by soil microorganisms for their own growth.

Since the nitrogen required by rose bushes is mainly in the nitrate form, the importance of chemical fertilizers becomes evident: to supply instantly available nitrogen via nitrate forms; plus nitrogen available within a short space of time via ammonium forms (urea and ammonium phosphates, etc.). A fertilizer containing all three sources - nitrate, ammonium and urea is superior. Learn to read labels to determine nitrogen sources.

PHOSPHORUS AND POTASSIUM Both are supplied as primary nutrients in balanced fertilizers. Phosphorus moves very slowly in the soil, so applications are available only to feeder roots within a few inches of the soil surface. Continued use ensures that a supply of phosphorus will eventually reach the lower root structures, provided the soil Ph is proper. The importance of placing bone meal or superphosphate in the bottom of the planting hole becomes clear - newly planted roses need phosphorus supplied at the root zone. Potassium also moves slowly and is not readily leached from the soil. However, it is extremely mobile within the plant system, where it can be leached from the leaves (its primary destination), by rain or irrigation. A continual supply of potassium is good practice.

SECONDARY- AND MICRO-NUTRIENTS In an effort to provide the ultimate balanced fertilizer for roses, some formulations include secondary nutrients (calcium, magnesium and sulphur, etc.). Sulphur is an excellent ingredient to help acidify alkaline soil. Where soils are acid, additions of Lime will adjust the pH. High calcium content in soils can render magnesium unavailable - another good reason to add Epsom Salts (magnesium sulphate) continually.

Micronutrients (iron, zinc, manganese, copper, cobalt, boron, chlorine and molybdenum) are added in some formulations as well. Percentages are typically small, as roses require only small amounts. Consider a fertilizer with chelated forms of micronutrients as most desirable, as they are the most usable by the plant.

"CHELATED" ELEMENTS (IRON, ZINC, MANGANESE, ETC.) Several trace elements already exist in soils, and are added to fertilizers as an additional supply. If the soil Ph is too high (above 7.0), some elements become unusable (insoluble) by the plant. This is especially true of iron and manganese, and to a lesser degree, copper, zinc and boron.

Chemical reactions in the soil slowly convert the elements into insoluble forms. First, soil Ph must be adjusted to the 6.0 - 7.0 range, then usable forms of the elements must be added.

"Chelates", without getting scientific, are simply forms of each element that remain soluble in the soil, and are readily available to the plant. However, since this solubility allows them to readily move out of the root zone with irrigation, repeated applications are needed.

Hence, the value of a fertilizer with chelated forms of the trace elements included.

This new knowledge of fertilizers is only a basic beginning to understanding the needs of roses. An excellent program to continually acquire new techniques to grow roses is available through a membership in the American Rose Society. The monthly American Rose Magazine is alone worth the low membership fee, and can save you equal amounts in reduced costs through better understanding of how to grow roses!