FERTILIZERS, SOIL pH, and FERTILIZING YOUR ROSES

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There are two kinds of fertilizers – Organic and Inorganic (chemical). Organic fertilizers are decomposed plant remnants and animal -waste (as it is in nature). Bacteria and fungi break down these materials to the simple soluble elements which is the only way plants are able to utilize them. Inorganic fertilizers are simple chemical compounds that rapidly break down to available nutrients. Organic and chemical fertilizers are not antagonistic, they work very well together, and better results are obtained than with either alone.

There are 17 nutrient elements that are essential for plant needs. Major or primary nutrients include Nitrogen (N), Phosphorus (P), and Potassium (K). The secondary, or minor, nutrients are: Sulfur (S), Calcium (Ca), and Magnesium (Mg). The third group is called micro-nutrients or trace elements because they are required in very small amounts. They are: Iron (Fe), Manganese (Mn), Boron (B), Zinc (Zn), Copper (Cu), Molybdenum (Mo), Nickel (Ni), and Chlorine (Cl).

Nitrogen stimulates the plant into rapid and vigorous vegetative growth. Phosphorus influences flowering and fruiting, hastens maturity, encourages root development and early spring growth, increases disease resistance and strength stems. Potassium promotes general vigor and sturdy root formation, contributes to disease resistance, regulates the water management, promotes turgor of the cells (keeps the necks straight), and increases blossom size. All nutrient elements are just as important, but they are needed in very small amounts. However, two of these (Iron and Magnesium) are in a way more important and often deficient because of high pH, mineral imbalance or due to too high or too low soil temperatures. Iron is necessary for chlorophyll formation and as an oxidation catalyst. An iron deficiency is noted when the upper leaves are getting pale green and are showing so called “Fish Net” appearance – veins stay green and interveinal areas are very pale. Magnesium is part of the chlorophyll molecule.

The numbers on a bag of fertilizer represent the percentage of primary elements and are always in a specific order: N-P-K: Nitrogen (N), Phosphorus (P), and Potassium (K). Watch for Chlorine (Cl) content on the label. Reject those that contain more than 5-6% Chlorine (less is better). Roses are extremely sensitive to Sodium (Na) and Chlorine (Cl) ions.

SOIL pH: Is defined as the acidity or alkalinity of the soil. A pH of 0 thru 6.9 are acid; 7 is neutral; and 7.1 – 14 are alkaline. Changing the soil pH is a slow and usually continuous process. In alkaline conditions the pH can be lowered by adding powdered elemental soil sulfur to the soil. In acidic conditions the pH can be raised by applying dolomitic limestone. The soil pH is very important to keep in an optimal range. We have found that our roses do their best when the soil pH is between 5.8 and 6.5. In this range the beneficial micro-organisms activity is at its peak. The bacteria are converting organic and inorganic fertilizers to water soluble compounds making them available to the plants. This is also the range where the most needed nutrients such as N, P, K, S, Ca and Mg are readily available to plants. When pH drops below 5.0 (very

acidic), micro-nutrients such as Al, Cl, Zn, Cu, B and Mn are released in amounts which are toxic to plants. Most organic amendments will lower the pH slightly, acidify, and many chemical fertilizers will lower the pH (some significantly).

f you grow a large amount of roses we highly suggest acquiring a good pH meter. For over 30 years we have used a Kelway HB-2 Professional Tester. This is our most useful garden tool, not only for testing the pH around the roses but also in our vegetable garden and other garden plants. All types of plants grow best in a soil pH which meets their cultural requirements - even vegetables! This meter is accurate - We've tested the pH of soil with this meter and sent that same soil to a professional lab and the results were the same. If you are an avid gardener we highly recommend this meter. There are many less expensive pH meters available, but they are not very accurate. You can also have your pH tested at County Agricultural Centers and some independent garden centers. Call your local AG Center for information on when and where.

FERTILIZING YOUR ROSES:

Roses are high maintenance plants, and, as such, require that you attend to them adequately. They are heavy feeders and perform their best with a consistent diet. Regular light feedings of fertilizers will keep your roses at their best. There are several different fertilizing approaches which are reliable and provide excellent results, even though they do not always use the same materials or the same frequency. You will experiment with the choices and over time decide which is best for you. No matter what you feed your roses, always water the entire surface of the soil surrounding the rose bushes BEFORE applying any type of fertilizer. Then water again after applying fertilizers, washing the fertilizer into the soil and/or mulch. **BE CAREFUL WITH FERTILIZER APPLICATIONS. **DO NOT OVER DO IT** MORE ROSES ARE KILLED BY OVER FERTILIZATION THAN BY STARVATION.**

SUGGESTED ROSE FERTILIZING METHODS:

For the past 6 years we have been using Method #1. Prior to that, we used Method #2 for over 20 years). Both provide excellent results. It is important to note that the method utilized in our garden may not be as successful in your garden as there are variables such as soil preparation, i.e, planting mix, bed preparation versus hole preparation, and long-term fertilizer program administered in the garden. Further the program utilized in our garden initially invested heavily is professional soil lab analysis with recommendations specifically tailored to rose production. Currently we are unaware of a lab which tailors their testing to rose production.

Method #1: Use a granular fertilizer tailored to roses which includes minor elements. For the last few years we have been using Diamond R 8-4-8 with/Suretrx, which is a combination of quick and slow-release fertilizers. You may want to call Diamond R (407) 656-3007 to see where this fertilizer is available in your area. If it is not available, try to find a complete fertilizer with a similar NPK of 8-4-8 and minor elements.

Every six weeks broadcast evenly under the bush from the shank to the drip line ½ cup of the fertilizer to large established bushes; 1/3 cup to smaller bushes; and 2 tablespoons to ¼ cup to miniatures and minifloras. Water roses well before and after fertilizing.

Method #2:

End of January (approximately 30 days before spring pruning) – Apply ¼ to ½ cup of Epsom salts per bush - (smaller amount for newly planted, smaller bushes. Larger amount for established bushes). Broadcast evenly under the bush from the shank (rootstock) or center of the bush to the drip line and water in well.

Mid-February to early March (at pruning time) and again in August - Per bush – Apply 2 cups (less for smaller bushes) of Purely Organic Mix (https://www.facebook.com/PurelyOrganicFertilizer), or Mills Magic Rose Mix. Broadcast evenly under the bush from the shank to the drip line and water in well.

Every 30 to 45 days (beginning in March after the bushes are pruned in our specific area) per bush – 2 to 4 tablespoons of Sul-Po-Mag (smaller amount for newly planted, smaller bushes. Larger amount of larger, established bushes). Broadcast evenly under the bush from the shank to the drip line and water in well.

Every 60 days (March through January) per bush – 2 to 3 cups of Milorganite and ¼ to ½ cup of Magnesium sulfate (Epsom salts) (smaller amounts for newly planted, smaller bushes, larger amounts for larger, established bushes).

April (after the first flush of blooms) & again in September, per bush – 1 cup of Osmocote (15-9-12 with minors), ½ cup for smaller bushes. Always water roses well before and after fertilizing.