

## A Slow Burn The Road To Organic Correctness

By Kathy DeRoo

Organics are highly touted as a source of nutrients and micro-nutrients for roses, as well as any other ornamentals or vegetables you may grow. Some organic advocates have been heard to exclaim, "Feed the soil, not the rose."

Fish meal, alfalfa meal, cottonseed meal, and blood meal are good examples of organic plant foods. They can do a lot of good for your roses, but do not forget that they are fertilizers and can do some damage if used improperly.

One organic rosarian has recommended (in print) blending two parts alfalfa meal, one part fish meal, one part cottonseed meal, and 1/4 part kelp meal to be applied at the rate of four (4) cups per bush. I had no kelp meal when I was ready to do my organic feeding so I decided to substitute 1/2 part blood meal, knowing it is a good source of nitrogen. One of our top Southern California rose exhibitors applies a heavy dose of nitrogen at the beginning of summer to produce better plants and foliage for the fall shows. It made sense to me.

I spent three hours mixing and applying this pungent blend -- four cups to each of my 250 rose plants (smaller amounts were used for potted roses and miniatures) as recommended. There was no time for digging it in; I merely tossed the stuff out there.

A lot of "stuff" hit the fan!

When I watered, the blood meal liquefied and my potted rose plants bled all over the patio. The following day a two-week heat wave (100+ degrees) arrived, adding heat to the cauldron that was my yard.

The organic food formed clumps covered by a coagulated blood-meal crust. The fish meal created a powerful stench as it began to rot inside the clumps. The flies were in Seventh Heaven and soon I had a yard full of maggots. I poured on the water, trying to work the mess into the soil, and trying to break down the organics faster. Watering seemed to intensify the reek.

In the end, several rose plants burned to a crisp from a nitrogen overdose, and I lost over 40 rose hips (all this was at the tail-end of hybridizing season). A four-year-old Silverado in a decorative pot succumbed to over-watering and inadequate drainage. And the revolting smell forced us to cancel a 4th of July party.

What had happened? I had forgotten that these organics are more than mere soil amendments. When I mixed them together I created a fertilizer with an NPK (nitrogen-phosphorous-potassium) rating of 7-2.5-2. I should have used about one fourth of the amount I applied, especially in the hot weather. And with fish meal in the mix it should have been dug into the soil. Not understanding how organics work and making some wrong assumptions proved costly.

So let's take a look at some of the more commonly recommended organic fertilizers. The NPK ratings shown are estimated, as these values vary depending on the source, time of year, and other variables. As with chemical fertilizers, the recommended dosages should be cut in half for plants in 5-gallon or smaller pots and for miniatures.

Blood meal (15-1.3-0.7) is a quick-release source of nitrogen, which produces leaf growth and greener leaves. It may be used dry or in liquefied form at a rate of one tablespoon per gallon of water. A dry application of two tablespoons to 1/4 cup is plenty for mature roses. Darker foliage will be visible within a week of use. An overdose can burn plants or cause them to produce foliage at the expense of blooms and root growth.

Cottonseed meal (7-2.5-1.5), another good source of nitrogen, is a slower-release product and is less likely to burn plants. Made from cotton seeds which have had the oil, lints, and hulls removed, this meal has an acid reaction in soil - a real bonus in areas of high alkalinity. One fourth cup to a half cup per bush will do it.

Alfalfa meal (5-1-2) supplies nitrogen, trace minerals, and triacontanol, a natural fatty-acid growth stimulant. One cupful per bush is prescribed. I prefer rabbit pellets to meal - they are easier to use and, after watering a few times, they seem to break down just as quickly. I have tried horse pellets, too, but they are much too large and the alfalfa is not as finely ground.

Bone meal (4-21-0.2) is a slow-release source of phosphorous, which is considered to accelerate plant maturity, increase bloom development and seed production, boost vitamin content in the plant, and increase disease resistance. Bone meal is also high in the calcium that aids in the growth of the root system and is required for the production and growth of plant cells. Bone meal works best when applied with other organics as it aids in the digestion of nutrients supplied by the other fertilizers, and vice versa. Steamed bone meal has had the fat removed so that it can be ground more finely and is better prepared for the soil. One-fourth to one full cup may be applied - you can't overfeed bone meal, but it isn't cheap. If you don't work it into the soil, bone meal will float when you water and you'll wonder how this could be helping your plants.

Fish meal (8-13-3) is the most foul of all the organics and should always be dug into the soil or covered with mulch (there are health regulations to consider, after all). Mulching will also help prevent the escape of nitrogen into the air. Some consider it to be better used after composting. If you insist on applying it to the rose garden, one-half cup per bush is the most I would recommend. But then, I will probably stick with fish emulsion in the future (1 tablespoon per gallon of water). It may not last as long in the soil but it's a lot easier to live with.

Wood ashes (0-1.5-7) can contain up to 10% potash when derived from hardwood, and about half as much if from softwood. Coal ashes should never be used. Wood ashes are very alkaline and should probably be avoided in this part of the country.

Seaweed (1.7-0.75-5), or kelp meal, has a chelating ability and helps to release locked-up minerals in garden soil. Its high potash content aids in the formation of carbohydrates, is necessary for protein synthesis, promotes early growth, improves stem strength, and

contributes to cold hardiness. As if that weren't enough, seaweed contains the hormones gibberellin and auxin, which function as growth enhancers. There are also beneficial vitamins, enzymes, and about 60 trace elements. A high alginic acid content combined with a low percentage of cellulose (the ingredient which gives land plants rigidity), causes its quick decomposition, facilitating its use as a compost accelerator. When applied directly to the soil, it stimulates soil bacteria, which increases fertility. Fresh seaweed should be rinsed well to remove any sea salt and then can be used as a top dressing. Kelp meal can be substituted at a rate of 1/4 cup per bush, or kelp extract may be used monthly.

While it is a good idea to combine different organics, keep an eye on the NPK ratios. A combination of equal parts cottonseed meal, bone meal, and kelp meal will give you a suitable balance of NPK (4.2-8-2.2), supplying all the nutrients a rose could ask for. Or you might just feed one organic each week, alternating nitrogen, phosphorous, and potassium sources.

When considering how much organic fertilizer to use, keep in mind that warmer temperatures accelerate the conversion into available plant nutrients. Less is more.

If you have been using chemical fertilizers exclusively, you should start slowly with organics as your soil will not contain an abundance of the micro-organisms that are necessary for the breakdown of the organics, making them palatable for your roses. After a steady diet of organics, the quantity may be increased somewhat, as the number of micro-organisms in the soil will have multiplied. Then again, after long-term use of organics, smaller amounts will be needed for desired results as the teeming micro-population makes better use of what it is given to digest.

This does not mean you must give up your chemical fertilizers altogether. If you feed organics at the beginning of summer and use plenty of organic mulch once or twice a year, the soil micro-organisms will be kept fed and happy.

Most of the organics listed here are available at feed supply stores, and are sometimes preferred over organics that are prepared and packaged for garden use. Cottonseed meal, for instance, often contains pesticide residues unless it is feed grade. Prices are generally lower at the feed store, although you will have to buy large quantities (i.e. 50-pound bags); not everyone cares to store leftovers.

While these organics do provide some organic matter to the soil, they should not be mistaken for soil amendments. Compost, shredded leaves, grass clippings, and aged manure are some examples of soil amendments, which are doled out by the shovelful. Organic fertilizers, however, are measured out by the spoonful. This is a lesson some of us had to learn the hard way.

For more information on organics, see *Magic Elixirs, Natural & Organic Products for Roses*, and *Organic, What's in a Word*

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