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Lauterbach: Condition your soil for spring planting

By Margaret Lauterbach

Special to The Idaho Statesman, January 17, 2014



This is a good time of year to consider the condition of your garden soil. You can't grow prettier flowers or more nutritious food if your soil is not well-mineralized, oxygenated and sporting a vigorous population of microscopic bacteria and fungicides.

Compacted soil or soil that is usually soggy with water is not a healthy medium. Tilling does loosen and aerate compacted soil, but only drainage can help boggy soil. We usually stress the importance of pH (acceptable is 6.5-7.5) because pH governs how available nutrients such as vital minerals are to plants.

For instance, a high pH (alkaline) soil interferes with plant use of iron, a micronutrient essential to plant growth, causing plants such as fruit trees that are heavy users of iron to display signs of chlorosis (iron deficiency).

We pay most attention to the major parts of fertilizer — the nitrogen (N), phosphorus (P) and potassium (K). When we buy fertilizer, look for the three numbers that indicate, in order, the NPK of the bag. If it's 10-10-10, for instance, it's a "balanced fertilizer," each number its proportion of the fertilizer weight. That's only 30 percent, so the rest is "inert ingredients."

Minor nutrients (minerals) are not always contained in fertilizer, but plants need them, and if your soil is lacking in any, your garden will show it. Those include calcium, magnesium, sulfur, boron, chlorine, copper, iron, manganese, zinc and molybdenum.

Most of you know in the past I've stressed that our soil is naturally deficient in magnesium, correctable by occasional application of dissolved Epsom Salts when you water. One tablespoon per gallon of water, applied about April should be sufficient for most plants.

Another essential is boron. This and several other elements can be toxic to plants and/or humans if you apply too much. Boron deficiency may result in poorly developed root systems in vegetables such as squash and tomatoes, as well as several ornamentals dependent on that nutrient. It may result in black margins on cabbage leaves, too.

Calcium, of course is a vital secondary nutrient for plants, responsible for strength of cell walls for one thing. Our soil usually has enough calcium to support plant life, but plants can take it in only when the soil is moist — not soggy or dry, just moist. If tomatoes don't get the calcium needed, you'll see brown papery bottoms on your tomatoes called blossom end rot (BER). Too much calcium, and it inhibits uptake of boron and perhaps other nutrients.

At times gardeners get a feeling that something isn't quite right in the garden.

One solution is to apply minor but necessary elements if your fertilizer didn't contain those elements. Applying each element at a time is risky, labor intensive and costly, but overdosing can cause serious damage. I and others use fish meal or kelp meal (available as powders in garden centers) in the garden to augment fertilizer. Judicious use won't overdose your soil.

There is another alternative available too: Azomite. Azomite is an affordable powder mined in the Salt Lake City area, consisting of vital trace elements, many of which are known to be vital for plant life.

Renowned garden writer and founder of Territorial Seeds, Steve Solomon, recommends application of one pound of Azomite per 100 square feet every other year, alternating with application of kelp meal. He recommends two pounds of kelp meal per 100 square feet those years that Azomite isn't applied.

I'm not sure applying that much that often is really necessary. Solomon has experienced health problems and has seen evidence of severe health problems in other people from food correctly grown in an organic way on mineral-depleted soil, so he may be over-stressing application. Some fertilizers such as Dr. Earth contain trace elements and should not need any trace element supplements.

Want to learn more about gardening in the Treasure Valley? Buy a copy of Margaret Lauterbach's new book, "[Gardening in the Treasure Valley.](#)" Send garden questions to melauter@earthlink.net or Gardening, The Idaho Statesman, P.O. Box 40, Boise, ID 83707.