



BLOSSOM Organic Garden Store



4711 Black Lake Blvd SW, Olympia, Washington (360) 943-5670
Organic Growing Supplies for the Maritime Northwest

Gardening Information Leaflet No. 12

\$5.00

“DOING IT RIGHT” THE MINERAL-AUGMENTED ORGANIC WAY *The Only Way to Grow!*

BIOCHAR IN GARDENING

Biochar is charcoal used in gardening and farming that comes into association with soil life (biota) and enhances a soil's productiveness for a very long period (up to centuries). The charcoal is made from wood or other forms of organic matter by pyrolysis, which essentially means it is “burned” in the absence of oxygen (high heat, but no flame). Oils and gases are driven off leaving the black, brittle carbon inner structure of the wood containing a labyrinth of micropores.

The chief features of biochar are that it retains mineral nutrients and moisture and provides a protected habitat for beneficial bacteria and fungi that assist in the feeding of plant roots while also serving to sequester carbon and prevent its becoming CO₂ that would otherwise become a “greenhouse gas.” An important consideration, however, is that charcoal needs to first be charged with nutrients to prevent it from initially robbing nutrients from surrounding soil and plant roots, even though it will return them after a year or two of undergoing colonization by microbes.

In recent decades it was discovered that a large agricultural civilization formerly existed in the Amazon River basin, made possible by charcoal and a variety of organic materials (kitchen scraps, bones, carcasses, manure, etc.) put into the otherwise infertile land to create “terra preta” (dark earth) soils which proved incredibly fertile for centuries and even millennia, despite the heavy rainfall of the region that otherwise washes nutrients out of the topsoil.

The charcoal content of terra preta soils ranged up to 15 percent by volume, but 10 percent has been found to be optimum. There is every reason to believe we could create the same long-term fertility and productiveness in North American soil. Not only would this solve or reverse our current problem of soil mineral nutrient and organic matter depletion and reduce drought losses, it could make a substantial contribution to reversal of global warming.

To be most effective, biochar needs to be used in tandem with rock mineral powders, seawater extract (such as Sea Crop) and a variety of organic meals and waste products to bring deficient nutrient levels up to par and be held there. Biochar acts like a magnet. A good way to inoculate biochar is to incorporate it into nutrient fortified compost at about 25 percent by volume.

BLOSSOM Organic Garden Store has developed a liquid product comprised of several ingredients to charge raw biochar with a full range of fertilizing elements, microbes and microbe growth-stimulating foods named **Bio-Charge**. Among the ingredients are Sea Crop, liquid fish, liquid kelp, molasses, cider vinegar, lignite, humic acid, boron, and a range of friendly bacteria and mycorrhizal fungi. One bottle of **Bio-Charge** will treat 7.5 gallons of raw biochar (pour in, stir and allow to soak for 2 weeks). You then can spread the enhanced compost on the garden, till in 6 inches or so, and plant.

Although initially the costs of biochar and the materials needed to charge it and raise the nutrient levels in deficient soil seem quite high, the optimal 10 percent of soil volume does not have to be applied all at once. It could be spread out over several years with the pay-off on your investment soon reaching a point of little or no additional fertilizing cost (as occurred with terra preta) for the rest of your life, your childrens' and grand childrens' lives. You and your family will have a permanent source of safe, clean and highly nutrient-dense food. A bonus will be the satisfaction that you have helped achieve soil sustainability, reduced pollution and aided the survival of human civilization. Everyone needs to get aboard with Biochar!