

COMPOSTING WITH BIOCHAR



Fine Biochar



**Blend of Compost, biochar
and wood chips.**



**Wood pellet
biochar**



**Wood Biochar
(large piece)**

Biochar is solid material obtained with controlled carbonization of biomass. Well made biochar is a stable form of charcoal that has many of the beneficial properties of activated charcoal, at a competitive price, and a useful product for successful compost operators.

Good aeration, compost management and solid non-pile infrastructure are well established and practical approaches to compost odor control.

Biochar is an effective addition to existing best practices for these types of compost odors: [1]

- ✓ Biochar reduces odors from volatile fatty acids (the odors of rotting food waste) [2, 3]
- ✓ Ammonia and nitrogen odors (both in the initial and final phases of composting) [4, 5]
- ✓ Lab studies indicate that biochar reduces hydrogen sulfide and sulfur-based odors [5, 6]
- ✓ Field studies with 10% biochar show methane reduction by more than 1/3[7]

BIOCHAR STRENGTHS AND LIMITATIONS:

- High carbon wood ash and wood biochar are both alkaline and can buffer against runaway pH effects and odor problems, particularly with volatile fatty acids.[6, 8]
 - The porous structure of biochar provides spaces for air and water and has a stable structure that fungus and beneficial microbes prefer. [9]
 - Biochar does a good job of capturing ammonia and methane and some types of metals (like copper and zinc), but biochar is not as good at capturing phosphates.[10-16]
 - Wood based biochars can be an effective replacement for some types of activated carbon in biofilters. Charcoal does not degrade the way wood chips do, and the combination of the absorption and adsorption capacity of biochar enhance the effectiveness of commercially available filter systems that rely on wood chips.[1]
 - Incorporating biochar early in the composting process produces a higher value soil amendment. Biochar retains nutrients, reduces leaching, and increases the fraction of humic materials in the final compost products. [17-19]
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