

## **How to Use Biochar**

- 1.) Crush biochar until most of the large chunks are broken up and the largest pieces are the size of course salt. Much of the biochar will be fine and powdery so wearing a dust mask is recommended.
- 2.) Mix the biochar 50/50 with a nutrient source of your choice (manure, compost, fertilizer)
- 3.) Add water and mix until biochar/fertilizer is wet throughout with a thick soupy consistency.
- 4.) Let the biochar/fertilizer mixture soak for two weeks. During this time, the biochar will be absorbing nutrients so they will be stored in the soil for plants to use.
- 5.) Spread wet mixture over the soil evenly at half-inch thickness and turn into the soil 5 to 6 inches deep or to the depth of expected root penetration.
- 6.) Water the soil after biochar application.
- 7.) Plant seeds and watch the biochar work.

See how Rob from Intelligent Irrigation LLC prepares biochar:

<http://www.youtube.com/watch?v=p96K16wSZPI>

## **Why Inoculate Biochar?**

The process of adding nutrients to biochar is called inoculation. This is done to fill the pore space of the char with nutrients and promote beneficial micro-organism growth. If biochar is added to the soil without inoculating, the biochar will absorb nutrients from the surrounding soil until it is saturated. There have been reports of this having an initial negative effect on plant growth and it can take up to a year for biochar to become charged with nutrients on its own.

## **What are the benefits of growing with Biochar?**

Biochar is not a fertilizer. Instead, it changes the properties of the soil by increasing pore space for water and nutrient storage. When water and nutrients are able to stay in the soil longer, plants are able to get more of what they need. Biochar can reduce the amount of water and nutrients applied or lengthen the time between applications because the biochar particles increase the amount of time these plant necessities remain the upper layers of the soil. This increased retention time also lessens the amount of nutrient runoff and infiltration into nearby water sources. Biochar takes a long time to break down in the soil so it only needs to be applied once, unlike other soil enhancers that must be re-applied. In this way, it also acts as a method for storing carbon in the soil and reducing the amount of carbon gases released into the atmosphere when biomass breaks down. The micro-organisms living in the biochar fix carbon from the atmosphere, which continues to reduce greenhouse gases. The Biochar production process also promotes sustainability. The gases created during the production of this Biochar are captured and used as fuel gas. Waste heat is also captured from this system along with py-oil, which is condensed smoke.

To learn more about biochar visit the International Biochar Initiative website: <http://www.biochar-international.org/>