

## Biochar Gets Started in Hampton Roads

Hampton Roads, at the mouth of the Chesapeake Bay, is an ideal place to reap the environmental benefits of biochar. The region has a warm, moist climate that produces abundant biomass, and urban areas that must deal with the resulting solid waste. As the home to the first English settlements in North America, the region's soils have been farmed intensively for five hundred years and now must be fertilized to be productive, but discharge of fertilizer into the Chesapeake has to be carefully monitored and controlled to stop and ultimately reverse the damage to the Bay caused by runoff. This combination of factors provides limitless opportunities for locally produced, locally used biochar to serve as an inexpensive and sustainable soil amendment that reduces the need for chemical fertilizer.

Hampton Roads is also home to NASA's Langley Research Center, where atmospheric scientists are on the forefront of measuring and understanding the effects that human activities are having on the planet's climate. This acute awareness of the climate problem led one NASA scientist, Doris Hamill, to promote the use of biochar in the local community.

In 2010, Hamill connected with the city of Hampton, Virginia's cooperative extension agent, Megan Tierney, and a group of city master gardeners, led by Carol King. Using a simple, nested-barrel pyrolyzer made with materials and shop labor provided by the NASA center, the group spent a year learning how to make and use biochar and compiling its experiences to help them share their knowledge.



Hampton master gardener, Carol King, learning to use biochar, 2010

In May, 2011 the Hampton group introduced the many benefits of biochar at a meeting of cooperative extension agents from cities throughout the Hampton Roads region. The agents were eager to share the information with their own networks of city master gardeners. On July 19, Hamill presented a talk on

biochar to 67 master gardeners from Norfolk, Virginia Beach, Portsmouth, and Chesapeake, while the Hampton master gardeners demonstrated exactly how biochar could be made and used in soils. Participants were given a disc, produced by NASA Langley, containing things they needed to get started making and using biochar themselves.



King and cooperative extension agent, Megan Tierney, demonstrate how to make biochar.

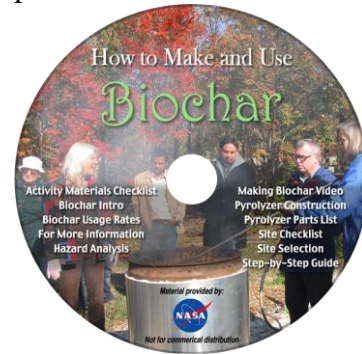
Although the hand-out information included instructions for making a pyrolyzer, the Hampton activities also attracted the attention of a local entrepreneur, Sam Manning, who is developing a commercial pyrolyzer for biochar to be offered for sale in the region. Manning used the occasion

of the meeting to field test his prototype and gain feedback from potential customers.

“I consider the day a great success,” Hamill said. “Cooperative extension agents and master gardeners are key to building understanding and acceptance of biochar in the local community. Today, we got a great start on that.”

What’s next? Hamill says that her ultimate goal is to capture knowledge and experience about biochar into an easy-to-use form, like the discs provided to the master gardeners, and get it into the hands of anyone anywhere who wants to try using biochar in local or community groups. “Right from the beginning,” Hamill says, “my vision was to develop a ‘starter kit’ that would allow community groups like the master gardeners, or 4-H clubs, or scout troops, or even suburban homeowners to get started with biochar without having to do a lot of research on their own.”

The Hampton Roads activities have attracted the attention of the US Biochar Initiative, the International Biochar Initiative, the Northeast Biochar Association, and others who would like to contribute to and distribute Hamill’s Biochar Starter Kit. As a prelude to the Starter Kit, the group recently submitted a biochar educational package to a review by NASA for possible inclusion in the agency’s earth science day of learning activities in October. If accepted as part of that package, NASA would distribute the materials to 12,000 schools around the country.



Biochar How To documents provided to master gardeners.