



## June 2010 News from the International Biochar Initiative

24 June 2010

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### IBI 2010: Registration Now Open

The IBI 2010 International Biochar Conference is scheduled for 12-15 September in Rio de Janeiro, Brazil! The Early Bird Registration Special lasts until July 15, 2010-register early for the best rate. More information is at [www.ibi2010.org](http://www.ibi2010.org).

Don't forget - IBI is offering a special discount on the registration fee to our members. To take advantage of the discount, you will need to enter your discount code into the registration form.



***If you are not yet an IBI member:*** [click here to join now](#). Once you have paid your membership fee, the discount code will be emailed to you.

***If you are already an IBI member:*** We emailed discount codes to all IBI members. If you have misplaced that email, let us know and we can resend your discount code.

***Travel information,*** including recommendations for hotels has been posted on the conference website at:  
<http://www.ibi2010.org/venue-and-travel-informationlocal-e-informacoes-sobre-viagens>.

***Sponsorship Opportunities*** are still available at a wide range of levels. For more information for your organization, please see:  
<http://www.ibi2010.org/sponsoring-opportunitiesoportunidades-de-patrocinio>.

#### ***Coming soon:***

The final Brazil Biochar Field Trip details are being confirmed now. The field trip will be held directly after the conference, and will include a visit to some Terra Preta sites in Manaus. Participants will travel on a boat during the 3 day/2 night excursion. More information as well as the opportunity to register for this exciting biochar/Terra Preta excursion will be posted on the conference website soon at [www.ibi2010.org](http://www.ibi2010.org). The conference organizers will also send out an announcement letting participants know when registration is open and providing more details on the excursion. Due to the size of the boat, space will be limited.

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## USDA Soil Carbon Assessment to Include Biochar in Soils

The Soil Survey Division of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) is undertaking a comprehensive inventory of US soil carbon stocks that will include biochar, or black carbon in the soils. The Rapid Soil Carbon Assessment program will be useful for carbon accounting and for conservation practice planning and assessment. The program will also evaluate soil carbon stocks as affected by ecosystem status, land cover, and agricultural management.

The first phase of the program, scheduled to conclude in September, 2010, will develop the national soil carbon inventory, and create a spatial map. The last such map created by USDA was published in 2001, showing estimated soil organic carbon to one meter depth.

The second phase of the work will create statistically valid measurements of soil carbon stocks by ecosystem and by agricultural management practices.

The data sets created from this work will be important for establishing and supporting policies and approaches for awarding credits or value for soil carbon sequestration achieved by the agricultural sector, whether in the form of market-based offsets or programmatic payments for ecosystem services through conservation and other farm management practices.

For more information on this work, [see a USDA overview of the program](#), which includes contact information for the relevant USDA/NRCS scientists engaged in this effort.

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## Project profile: Using Improved Cookstoves and Biochar in Western Kenya

The African Christians Organization Network (ACON) has been working in Western Kenya since 2000 to empower villagers by providing opportunities for development that are environmentally sustainable. Since 2004, they have been focusing their work on how to reduce deforestation while improving soils for local farmers in the area. Part of this solution is improved cookstoves and the use of biochar.

The Bungoma district of Western Kenya is 30 miles from Uganda border and near a national forest. Villagers living in the area are mainly farmers who rely on annual rains for all irrigation so water becomes crucial during the dry season. For cooking, they use a traditional 3 stone open fire, requiring a great deal of firewood and creating a lot of smoke. When Salim Mayeki Shaban of ACON started investigating fuel use in Bungoma, he found that the population was getting its firewood from primary forests. The high fuel demand was quickly deforesting the area and some villagers had been taking wood illegally from the national forest. To alleviate the pressure on the forest, ACON designed a project that would work with local villagers to promote energy conservation and reduce deforestation through the use of improved cooking stoves, designing biochar producing stoves, training local farmers on application and utilization of biochar, and making fuel briquettes from water hyacinth and other biomass materials (not from the forest).



To read the remainder of this story, please see:

<http://www.biochar-international.org/profile/ACON/Kenya>

*Photo: Setting up field trials at a village with biochar; courtesy of Salim Mayeki Shaban*

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## New IBI Publication

IBI is pleased to announce the availability of a new biochar technology guideline in our series of technical bulletins and guidelines. IBI Technology Extension Director Jane Lynch and IBI Technical Director Stephen Joseph are the authors of the 32-page document, [Guidelines for the Development and Testing of Pyrolysis Plants to Produce Biochar](#). This document was produced to assist in the development and testing of small pyrolysis plants and provides advice on equipment design and testing as well as the specification and testing of the biochar product.

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## Biochar Briefs - News Roundup for June 2010

A number of new biochar studies, ventures and awards were announced in June, including the following:

***On 11 June, the first Dutch biochar research center officially opened*** on an experimental farm in Valthermond in the province of Groningen. The purpose of the center is to provide information on the production and use of biochar to interested farmers and others. The Dutch center is part of a larger biochar program sponsored by the EU INTERREG IVb North Sea Region Steering Group. Thirteen partners from seven European countries - Netherlands, Belgium, Germany, Denmark, Sweden, Norway and Britain - work together in this project to introduce biochar to Europe. The province of Groningen is the lead partner and chairman of the group. The project will last four years and has a budget of five million euros.

***University of New Hampshire tropical ecologist Michael Palace*** has been awarded a \$364,000 grant from NASA's Space Archeology program to estimate the population of pre-Columbian indigenous peoples in the Amazon Basin lowlands by means of satellite remote sensing technology. The remote sensing camera will allow researchers to identify Terra Preta sites by sensing the chemical signature of vegetation growing on the sites - the more nutrient-rich leaves or specific groups of tree species frequently found on Terra Preta or Amazonian black earths. "There are Terra Preta sites all over the Amazonian basin, particularly near rivers, but no one really knows their whole distribution," says Palace, who will collaborate with Mark Bush, an ecologist from the Florida Institute of Technology, and Brazilian archeologist Eduardo Neves of the University of San Paulo.

***Alex and Bruce Green, a father and son team of inventors, were selected as finalists*** for the \$50,000 Cade Prize in Gainesville, Florida. Their invention, the Green Pyrolizer Gasifier, produces energy and biochar. The prize includes access to the Gainesville Technology Enterprise Center, an incubator program for beginning tech companies.

***Bloomberg Businessweek magazine nominated a biochar company*** for their 2010 America's Most Promising Social Entrepreneurs list. The Austin, Texas based company Re:char, started in 2009 by Jason Aramburu, was selected from more than 200 companies as a business that shares "a commitment to using business to create a broader benefit." Final selections will be announced at the end of June. Re:char designs and builds pyrolysis equipment.

***Several high school Biochar science projects in the US won awards in June.*** Andrea Pugh, a sophomore at Saginaw High School in Michigan won a bronze medal at the International Sustainable World Energy, Engineering, and Environment Olympiad in Houston, Texas and second place at the Intel International Science and Engineering Fair in San Jose, California for her biochar project titled: "The Pyrolytic Synthesis of Biochar and Biofuel from

Biowaste: An Analysis of Biochar and its Potential to Amend Fuel Crisis and Food Security." Students at Heritage High School in Vancouver, Washington won a \$3000 second prize in the Imagine Tomorrow competition sponsored by Washington State University at Pullman for their biochar and pyrolysis experiments. See the May 2010 IBI Newsletter for a description of the Heritage High School biochar project.

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## Regional Biochar Group Updates

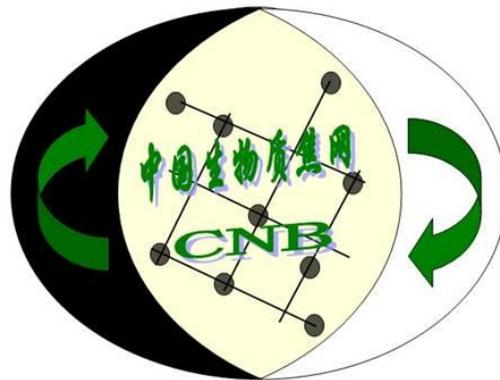
To read more on regional and national biochar groups, please see IBI's website at: [www.biochar-international.org/network/communities](http://www.biochar-international.org/network/communities). This month includes two new groups in Israel and China, as well as updates from the South East Asia Biochar Interest Group, the Australia New Zealand Researcher's Group, the Mongolian Biochar Initiative, the US Biochar Initiative, and Biochar Northeast (United States).

### Israel Biochar Researchers Network (iBRN)

A group of Israeli scientists involved in various aspects of biochar research (agricultural, energy/engineering, and economic) have formed the Israel Biochar Researchers Network (iBRN). Members of the iBRN seek to expand collective and individual research programs, engage other research groups nationally and internationally, and develop links with similar programs in other countries. Our overarching ambition is to shed light on the mechanisms which are responsible for the manifold benefits of biochar in agricultural systems. Disciplines covered by members of the iBRN include soil chemistry, plant nutrition, plant physiology, organic chemistry, phytopathology, soil microbiology, soil physics, agricultural engineering, agricultural economics, agronomy, and post harvest food quality. For information about the activities of the network, enquiries into the possibility of international and national collaboration, or to join the network, [please see our site \(iBRN\)](#) or contact [Ellen Graber](#).

### China Biochar Network (CBN)

The China Biochar Network (CBN) was officially inaugurated June 12, 2010. The CBN is comprised of more than 20 organizations within China, which are universities, institutes of China Academy of Science, and local agricultural research institutes. They come from Anhui, Beijing, Chongqing, Tianjin, Guangzhou, Hunan, Hubei, Inner Mongolia, Jilin, Shanxi, Shengyang, Sichuan, Xinjiang, Yunnan, and Zhejiang, covering most of the country. The China Agricultural University (CAU) will be the headquarters of CBN.



The CBN will carry out experiments on biochar's effect on soil processes. The experiments will focus on the ecological impact of biochar, yield and quality of vegetable and fruit under biochar application, and grain production with biochar. The CBN will also pay attention to the carbon balance in biochar production and application.

The CBN will be an organization to serve all CBN members on information exchange, project cooperation, method development, and training. The objective of CBN is to develop biochar technology in agriculture and environment protection in China. It will be a center of biochar research and related topics. For more information, please see:

<http://www.biochar-international.org/chinanetwork>

### Australia/New Zealand Biochar Researchers Network (ANZBRN)

ANZ Biochar Researchers Network will hold a one day biochar workshop in Hobart, Tasmania on the 28th of June. ANZ joins forces with a range of Tasmanian stakeholders to host this workshop with the aim to provide a forum to review the role of biochar in agriculture and land management activities, as a greenhouse gas mitigation strategy as well as considering opportunities to reduce the cost of, or develop income from, management of organic wastes.

For more information on the workshop and to register, see:  
<http://www.anzbiochar.org/TASBIOCHARWORKSHOP.pdf>.  
For updates on ANZ, see: [www.anzbiochar.org](http://www.anzbiochar.org)

#### **South East Asia Biochar Interest Group**

A new biochar project funded through the Asia Pacific Network for Global Change is focused on multi biochar field trials in India, Philippines and Cambodia. Partners include ARTI India, IRRI, SME Cambodia and the University of Edinburgh's UK Biochar Research Centre.

Back in Cambodia, since the rainy season is approaching, trials for rain fed paddy field rice are being prepared. Control plots, and plots amended with 40t/ha biochar will be set up (a similar design to the trials in the Philippines). Dry season rice has already been tested with biochar application, and showed a good response. As well as field trials, pot trials with lettuce and cabbage have already yielded results at the research farm of the APSARA Authority in Cambodia. Amendments of between 20 and 120t/ha were used in combination with additions of compost and lake sediment.

Different methods of biochar production are being used for the trials, using feedstocks of rice husks, sugar cane leaves and maize trash. In Cambodia biochar for the trials is produced from rice husk in a 150kW continuous feed gasification unit.

For more information please see the project blog: <http://biocharm.wordpress.com/>

*Assessing Opportunities for Biochar in Yunnan, China and the Greater Mekong Sub-region*  
Biochar Systems Ltd (BSL) and SaafConsult have started a biochar study for FAO-RAP in the Greater Mekong Sub-Region (GMS) under the GMS Economic Cooperation Program. The objective of this study is to examine opportunities to use biochar for the benefit of rural communities with a focus on Yunnan Province, China. Planned outputs from the study include a report, project proposals and a GSM workshop. A further announcement will be made on this very soon.

For more information and details on the group's activities, please see:  
<http://www.biochar-international.org/regionalgroups/southeastasia>.

#### **Mongolian Biochar Initiative (MoBI)**

We are happy to announce that Byatshandaa of the Mongolian Women Farmer's Association has received a follow on grant from the Australian Embassy to continue her biochar work on field trials with potatoes and to add the trials to greenhouse conditions in order to extend the short Mongolian vegetable growing season. For those interested in low tech biochar production, pictures and text for making simple UBI biochar ovens have been posted on <http://www.biochar-international.org/regional/ubi>

#### **United States Biochar Initiative (USBI)**

USBI is pleased to host Biochar 2010. The U.S. Biochar Initiative Conference at Iowa State University on June 27 - 30 is designed to advance our understanding of the science and policy issues related to biochar as both an agent for carbon sequestration as well as an amendment for soils. The conference is dedicated to bringing together researchers, industry professionals, and entrepreneurs to learn of recent advances in biochar science, technology, and policy. The event will have presentations, displays, networking opportunities and the chance to tour field plots and the research farm at Iowa State University.

USBI member Ron Larson says:

"I find these Biochar conferences (this will be my fourth) to be by far the best way to learn and keep up with the most current results (and a lot is happening in the biochar world). I look forward to seeing a lot of you there. It is hard to imagine that you won't enjoy it - each conference has new exciting information you won't see for years in the technical journals. Spread the word!"

The Bioeconomy Institute of Iowa State University is lead sponsor, organizer, and host for the conference. USBI, the United States Biochar Initiative, is co-sponsor of the event.

Check the website, [www.biochar2010.org](http://www.biochar2010.org), for the full program, speaker profiles, exhibitor, and sponsorship opportunities. Iowa State University is located in Ames, Iowa.

### **Biochar Northeast (United States)**

Biochar Northeast will be participating in the 16th Annual SolarFest ([www.solarfest.org](http://www.solarfest.org)) in Tinmouth, Vermont July 16 - 18. Board member David Yarrow spoke on biochar at the last two Solarfests to enthusiastic audiences. Last year, David arranged to add to the program burner demos by Peter Hirst and Bob Wells of New England Biochar (NEB). Bob and Pete did two burns with their 100-gallon "Tinman," and added biochar to test plots at Forget-me-not Farm.

Biochar Northeast will host a Biochar Theater, maintain an information and sales booth and make presentations in the education tents. We are looking for volunteers for our information and sales booth and for Biochar Theater demonstrations. Biochar New England will be producing more or less continuous demonstrations at the Biochar Theater. If you would like to display or demonstrate in the Biochar Theater, contact Peter Hirst at [peter@newenglandbiochar.org](mailto:peter@newenglandbiochar.org). To volunteer at the display booth, contact Doug Clayton at [dnclayton@wildblue.net](mailto:dnclayton@wildblue.net). For more information on the group, please see: [www.biochar-international.org/regional/northeast](http://www.biochar-international.org/regional/northeast).

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## **Recently Published Biochar Research**

IBI tracks all published research on biochar and includes it in our online bibliography: [www.biochar-international.org/biblio](http://www.biochar-international.org/biblio). The following articles were added in the last month. Please visit the website bibliography for more information on any of these articles. Due to copyright, we cannot provide full copies of articles unless we have permission from the publisher. If you have published work that is not included, please email us at [info@biochar-international.org](mailto:info@biochar-international.org).

Clough, T.J., Bertram, J.E., Ray, J.L., Condron, L.M., O'Callaghan, M., Sherlock, R.R., Wells, N.S., 2010. Unweathered Wood Biochar Impact on Nitrous Oxide Emissions from a Bovine-Urine Amended Pasture Soil. *Soil Science Society of America Journal* 74, 852-860.

Ertas, M., Alma, M.H., 2010. Pyrolysis of laurel (*Laurus nobilis* L.) extraction residues in a fixed-bed reactor: Characterization of bio-oil and bio-char. *Journal of Analytical and Applied Pyrolysis* 88, 22-29.

Free, H.F., McGill, C.R., Rowarth, J.S., Hedley, M.J., 2010. The effect of biochars on maize (*Zea mays*) germination. *New Zealand Journal of Agricultural Research* 53, 1-4.

Fruth, Darrell A and Ponzi Joseph A, 2010. Adjusting Carbon Management Policies to Encourage Renewable, Net-Negative Projects such as Biochar Sequestration. *William Mitchell Law Review*, 992 - 1013.

Mullen, C.A., Boateng, A.A., Goldberg, N.M., Lima, I.M., Laird, D.A., Hicks, K.B., 2010. Bio-oil and bio-char production from corn cobs and stover by fast pyrolysis. *Biomass & Bioenergy* 34, 67-74.

Navia, R., Crowley, D.E., 2010. Closing the loop on organic waste management: biochar for agricultural land application and climate change mitigation. *Waste Management & Research* 28, 479-480.

Uzun, B.B., Apaydin-Varol, E., Ates, F., Ozbay, N., Putun, A.E., 2010. Synthetic fuel production from tea waste: Characterisation of bio-oil and bio-char. *Fuel* 89, 176-184.