News from the International Biochar Initiative

IBI is a non-profit organization supporting researchers, commercial entities, policy makers, farmers & gardeners, development agents and others committed to sustainable biochar production and use.

Help put the Earth Back in the Black

February 21, 2012

IBI Guidelines for Specifications of Biochars Update

Since September 2010, IBI and the international biochar community have been engaged in the process of drafting Guidelines for Specifications of Biochars for Use in Soils. While the process is nearing completion, IBI has decided to extend the current period of staff review and document revision by several weeks.

The new deadline for completing the Biochar Guidelines is yet to be determined, but we expect to begin the balloting process in either the last week of March or the first week of April. All registered IBI members will be invited to either approve or reject the Biochar Guidelines during a week-long balloting process.

The most recent comment period closed on February 10. We are extending the process timeline in order to give IBI staff and consultants more time to adequately review and incorporate the many excellent comments and suggestions received during the last comment period, and to allow for a legal review of the guidelines prior to their final posting.

The final Biochar Guidelines document will be posted online two weeks before balloting begins and IBI will conduct two webinars to explain the revisions and answer questions. These webinars have not yet been scheduled. IBI will send out an email announcement once the final schedule has been determined. To better meet the needs of the many participants in multiple time zones, please help us to identify the hours that work best for you by completing this short Webinar Times Survey.

New IBI Business Members: Arizona Public Service Company, Burdekin Bowen Management Advisory Committee, and Guangdong Dazhong Agricultural Science and Technology Co

Arizona Public Service Company (APS) is Arizona's largest and longest serving electric utility company, providing power to more than one million customers in 11 of the state's 15 counties. The APS Vision is centered on 'Creating a Sustainable Energy Future for Arizona.' APS has about 7100 employees and operates the second largest generation fleet in the western United States. In addition to nuclear and fossil

generation, APS explores the use of solar and other renewable generation technology. For more information, please see www.aps.com or contact Timothy McDonald at timothy.mcdonald@aps.com.

Burdekin Bowen Integrated Floodplain Management Advisory Committee Inc. (BBIFMAC) is a not for profit community natural resource agency covering the catchment areas of the Bogie, Don, Elliot, Burdekin, and Haughton Rivers in the Burdekin and Whitsunday Shires in North Queensland, Australia. BBIFMAC's overall vision is to assist in the management of the natural resources in such a way as to ensure social wellbeing, primary production, and ecological sustainability of the Burdekin-Bowen floodplain. For more information, please see http://www.bbifmac.org.au or contact Tom McShane at tom@bbifmac.org.au.

Guangdong Dazhong Agricultural Science and Technology Co. Ltd is an innovative fertilizer manufacturer, and is one of the leading organic fertilizer producers in China. As a leader of low carbon and eco-friendly agriculture in China, Guangdong Dazhong Agriculture Science Co. has adhered to the mission of a low carbon and high yield fertilizer to be a cost-effective agricultural products manufacturer. They are located in Dongguan, Guangdong Province, China and are looking to include biochar in their product range in the near future. For more information on the company, please visit: http://www.dazhongnk.cn/english/index.asp.

A listing of all current IBI Business Members can be found on our website at: http://www.biochar-international.org/IBI-business-members. For more information on this membership or to join, please see: http://www.biochar-international.org/join.

Profile: The Big Biochar Experiment; using widespread biochar trials for citizen-powered science in the UK

The Big Biochar Experiment is a UK-wide initiative and is the largest study on the use of biochar on British allotments to date. The Experiment aims to gather data to assess the effects of biochar on plant productivity and soil health of widely used fruit and vegetable varieties in the UK. The team is comprised of members of Oxford Biochar Ltd, Earthwatch, the Environmental Change Institute (Oxford University), and the UK Biochar Research Centre. Project partner Dr. Dan Bebber of Earthwatch said, "Biochar holds great potential for addressing some of our greatest challenges, including climate change and food security. This novel experiment will provide important insights on biochar's applicability to the UK farming industry, and allow people to get involved in real science."

Believing that biochar could be a solution to safely and permanently sequester carbon in the soil, the Big Biochar Experiment is looking for hundreds of UK residents to enroll in the program and participate in citizen-powered science. Biochar will be provided free of charge. The participants will investigate whether biochar will work for their gardens and plants, and receive instructions and support on how to record the data from their plots and send it in to the experiment. To read the remainder of this article, please see: http://www.biochar-international.org/profile/bigbiochar.

Photo: Plot pre-planting; courtesy of Dr. Cécile Girardin of Oxford Biochar Ltd

Bright Prospects for Biochar Offsets in Australia

By: Annette Cowie, Director of Rural Climate Solutions: A partnership between the University of New England and NSW Department of Primary Industries

The Carbon Farming Initiative (CFI) has been introduced in Australia to allow landholders to generate offset credits from activities that reduce emissions or sequester carbon, including biochar application. The CFI operates under the National Carbon Offset Standard (NCOS). Public confidence in carbon offset schemes had been shaken by scams in the voluntary market, so the Australian government introduced NCOS. As a government-backed scheme, it will provide confidence to those purchasing offsets, and regulate those making claims of “carbon neutrality”. Eligible activities that can earn offset credits include a range of land management and agricultural practices, promoted through the CFI, which commenced in December 2011. Under the CFI, building soil carbon, reforestation, and reducing livestock emissions are some of the activities that could generate carbon credits. Application of biochar to soil is listed as an eligible activity.

But before offset credits from biochar can be generated, a methodology for calculating the credits has to be accepted by the Domestic Offsets Integrity Committee. So far three methodologies for other project types have been approved: planting native trees, managing methane from manure in piggeries, and capturing landfill gas. A biochar methodology has not yet been submitted for consideration, but the new Biochar Capacity Building Fund includes support for development of an offset methodology for biochar.

The carbon offset market in Australia will receive a huge boost when the carbon tax commences later in 2012. Last November the Australian parliament passed legislation to price carbon: a national “carbon pricing mechanism” (strictly speaking, it is not a tax) will commence from 1 July 2012, under the Clean Energy Future Act. To read the remainder of this story, please see: http://www.biochar-international.org/biochar_offsets_Australia.

Biochar Briefs: News Roundup for February

Australia

Australia's agriculture sector is benefiting from a new research program to find ways for agriculture to reduce carbon emissions. The program includes a $2 million Biochar Capacity Building Program, which has received 29 applications from universities, land managers, industry, and government agencies.

Australian Farm Journal profiles three biochar producers in its February 2012 issue. Barry Batchelor of Black Earth Products is producing and selling chicken litter biochar and biochar-compost blends. Ray O'Grady is offering "Moso Biochar", a bamboo biochar sourced through the China National Bamboo Research Center in Hangzhou, China. Barry Hayes is marketing two pelletized biochar-nutrient blends, "Geomite" and "SuperChar" made from bamboo in Indonesia.

Pacific Pyrolysis (PacPyro) aims to generate profits without undue reliance on carbon credits. Revenues will come from a range of sources - landfill avoidance, carbon credits, sales of biochar and energy production. A commercial pilot plant is planned for Melbourne's southeast and the company has been awarded a $4.5 million State Government grant to help build it.

Germany

The Ihringen community is working with energy utility company Badenova on a number of new initiatives including a research project investigating whether mobile pyrolysis can be used in the countryside to make biogas and biochar.

New Zealand

The Forest Industry Engineering Association will showcase new forest products including biochar at its Future Forestry Finance conference, taking place in Sydney on 13-14 March at the Novotel Brighton Beach, and in Auckland on the 7-8 March.

United Kingdom

For reviewer Andy Goldring, Coordinator/CEO of the Permaculture Association in Britain, biochar was one of the highlights of the International Permaculture Convergence 10 (IPC10) in Jordan.

Using the People Fund It platform (peoplefund.it), 110 people backed Oxford Biochar, allowing the company to raise over £8000 to help their innovative soil enhancing product get to market.

United States

A meeting in Northern California's Trinity County brought together agencies, timber interests, local governments, and environmentalist to discuss better ways to use small-diameter timber to make products like biochar.

Three Cornell researchers will discuss mitigating climate change, biochar and the challenges of wheat rust, respectively, at the 2012 American Association for Advancement of Science (AAAS) annual meeting in Vancouver, Canada, Feb. 16-20.

A technology being developed by the U.S. Navy in conjunction with Terragon Environmental Technologies, Inc. and the Canadian Department of Defense will pyrolize waste and produce syngas and biochar.

Encendia Biochar has unveiled its 2012 product line, which features two products: "Urban Blend" and "Spring Blend," both proprietary biochar blends developed by the company. The 1/3 cubic ft. bags are available at encendia.com and in garden stores around Connecticut.

Avello Bioenery in Des Moines, Iowa, has been assigned a patent developed by four co-inventors for "methods for integrated fast pyrolysis processing of biomass." The integrated fast pyrolysis

process includes biomass storage, preparation, pretreatment, and conversion, product recovery, and processing to create and store stable biochar and bio-oil fractions.

John-Paul Maxfield started Waste Farmers, a company that takes organic waste collected from around Denver and produces organic agricultural inputs like fertilizer, potting soil, biochar, and compost tea. Waste Farmers currently sells products in bulk and is preparing to move into the retail home and garden market in 2012.

We update the website daily with new articles on biochar. For more information, please see: http://www.biochar-international.org/newsbriefs

Report from New Zealand 2012 Biochar Workshop

From Science to Stakeholders: the New Zealand 2012 Biochar Workshop was organized by the NZ Biochar Research Centre and held on the 9th and 10th of February at Massey University, Palmerston North. It attracted over 45 attendees, mainly from New Zealand with a few from Australia, China, and The Philippines. The workshop included more than 30 presentations (both oral and poster) arranged into sessions on (i) Biochar Economics, (ii) Life-Cycle Assessments, (iii) Production Technology, (iv) Biochar and Soil Carbon, (v) Characterization of Biochars, (vi) Biochar in Agriculture, and (vii) Other Uses of Biochar. In addition to a demonstration of a 5 liter capacity rotating kiln carried out by the biochar engineering team, attendees enjoyed a convivial meal at a local restaurant and, on the second day, the workshop was concluded with an open forum. The program and abstracts are available at www.biochar.co.nz.

Photo: Prof. Jim Jones explaining the functioning of the 5-L capacity rotating kiln during the demonstration session; courtesy of Marta Camps.

Highlighting Biochar at One Day Colloquium in New York

By Kathleen Draper of Finger Lakes Biochar

A one day Biochar Colloquium was held at the Pfeiffer Institute as part of a series of Carbon Farming workshops in Chestnut Ridge, NY, US on February 3, 2012. The event was hosted by Biochar Northeast and Jason Aramburu from re:char. More than forty participants learned about the benefits of biochar for soils in the developing world as well as biochar in local soils. They also discussed the importance of ethically producing biochar from waste streams for local application. A ‘Char-B-Que’ was held the evening prior to the event to demonstrate a variety of cook stoves that produce biochar.

Aramburu highlighted some of re:char’s work in Kenya where 750 – 1000 farmers are already using biochar made from sugar cane trash which is otherwise burned in the field causing air quality problems. Aramburu said that over the past six years the farmers have seen a 200% increased crop yield by using biochar combined with fertilizer. The project is working with Kiva, a

micro lending organization funded by individuals around the world, to assist farmers in the purchase of the “Rutuba” biochar kiln (produced by re:char). A typical loan gets funded within 15 minutes and the farmer has the funds within 24 hours delivered directly to their cell phone; the average farmer is able to pay back the loan within six months. To date, re:char has sold approximately 700 units and is importing off grid, scalable manufacturing capabilities housed in old shipping containers to produce more Rutuba kilns locally. To read the remainder of this article, please see: http://www.biochar-international.org/New_York_Colloquium.

Report: Biochar Stoves Make a Splash at the ETHOS Conference

By Amanda Joy Ravenhill; founder of Biochar Association of the Bay Area

The ETHOS (Engineers in Technical and Humanitarian Opportunities of Service) conference, held annually in Seattle for the past 12 years, draws improved cook stove designers, implementers, and aficionados from all over the world to discuss the latest in cook stove research, efficiency, field tests, commercialization and policy. I attended for a second time this year and was once again impressed with the diversity of people attracted to this field. All conference proceedings will be posted shortly.

This year biochar was everywhere. The Friday prior to the conference, the Biomass Energy Foundation (BEF) hosted a Micro-Gasification workshop at the Mckinstry Innovation Center in South Seattle. Participants heard from President Kathy Nafie on the CAFDA model (Culture, Application, Fuel, Device, and Acceptance) of cook stove dissemination and from Paul Anderson (of BEF) on the wide variety of Micro-Gasifiers around the world. We then made a TChar prototype (part charcoal stove/part top lit up draft micro-gasifier or TLUD) and cooked lunch on three different biochar stoves from Malawi, Germany, and India.

On Saturday, Tom Miles (of TR Miles Technical Consultants and the bioenergylists.org) moderated a panel on biochar that included a presentation by Jim Grob of Seachar and a panel discussion on five major questions surrounding biochar stoves. Participants Ron Larson, Jim Grob, Christa Roth, Paul Anderson, Dean Still and I discussed the benefits and obstacles of biochar producing cook stoves. To read the remainder of this article, please see: http://www.biochar-international.org/conferences_ethos2012.

Photo: Cooking lunch at the conference on TLUDs; courtesy of Amanda Ravenhill.

Highlight your work at the upcoming 4th International Biochar Conference in Beijing, China, September 2012

The organizing committee of Biochar: The Road to Richer Food and a Safer Environment, is pleased to announce that they are accepting abstracts for presentations until March 31, 2012. The event will be held September 16 – 20, 2012 in Beijing China at the Friendship Hotel. Presentations must focus on the following topics: biochar production and characteristics, biochar and plant/food production, biochar and soil physical processes, biochar and soil chemical processes, biochar and soil biological processes, biochar and environmental quality, biochar and climate change, biochar and policy, and a special theme on biochar producing equipment. For more information, including registration dates, sponsors, and other information, please see the conference website at: http://www.ibi2012.org/En/Welcome.html.

US Biochar Conference Announces a Second Call for Abstracts

The organizing committee of the US Biochar Conference is committed to the presentation of scientific and other scholarly papers and have received over 70 abstracts in response to our first Call for Papers. Their goal for the 2012 conference is to enhance the typical conference model in format as well as substance and ask that applicants propose the following topics in developing an abstract for the Second Call for Papers: Biochar Finance and Entrepreneurship; Biochar Case Studies; Biochar Policy Perspectives; Biochar: Small is Beautiful; Biochar Art and Culture; and Biochar "FarmOut" Sessions. **The Second Call for Papers closes March 10th.** Click here for more information.

Opportunities in Biochar

Opportunities in Biochar showcases announcements for the public to apply for funding, jobs, publications, conferences, etc. These announcements are also posted on the IBI website in two places: Biochar Updates and the Member Bulletin Board.

- Apply for funding: United Nations Convention to Combat Desertification (UNCCD) Announces Land for Life Award: **due Feb 29, 2012**. For more information, please see: http://www.biochar-international.org/node/3045.
- Submit letter of intent: Looking for Biochar technologies for European Union Contest; **due Feb 29, 2012**. For more information, please see: http://www.biochar-international.org/node/3098.
- Second call for Abstracts: US Biochar Conference in Sonoma CA; **due March 10, 2012**. For more information, please see: http://2012.biochar.us.com/present.

- Submit Abstract for Conference: The International Symposium on Reclamation, Restoration and Rehabilitation Towards a Greener Asia call for presentation abstracts: **due March 31, 2012**. For more information, please see: http://green-asia.blogspot.com.
- Submit Abstract for Conference: 4th International Biochar Congress Beijing, China 2012 announces call for presentation abstracts: **due March 31, 2012**. For more information, please see: http://www.biochar-international.org/node/2985.
- Submit Abstract for Conference: The European Geosciences Union General Assembly 2012 will have a session on biochar for soil remediation and global warming mitigation (Vienna, Austria from 22 – 27 April 2012). For more information, see: http://www.biochar-international.org/node/2904.

New job opportunities and PhD postings are updated at: http://www.biochar-international.org/network/jobs

Upcoming Calendar Events

- February 29 – March 1: European Pellet Conference 2012; location Wels, Upper Austria; more information: http://www.wsed.at/en/programme/european-pellet-conference.
- March 1: Joint meeting of the IL Biochar Group and IL Biomass Working Group; location Illinois Sustainable Technology Center at the University of Illinois-Urbana-Champaign, USA; more information: www.biochar.illinois.edu
- March 14 – 16: Fifteenth Anniversary Humic Science & Technology Conference; Boston MA, US; more information: http://www.biochar-international.org/node/3096.
- March 21 – 23: Northeast Biomass Heating Expo; location: Saratoga Springs, NY, United States; more information: http://nebiomassheat.com/registration.html.
- April 16 – 19, 2012: International Biomass Conference & Expo; location Denver, CO, United States; more information: http://www.biochar-international.org/node/2690.
- April 22 – 27, 2012: Biochar for Soil Remediation and Global Warming Mitigation at European Geosciences Union General Assembly 2012; location Vienna, Austria; more information: http://www.biochar-international.org/node/2903.

See the IBI Calendar page for more events. To add an event to the calendar, send the information to info@biochar-international.org.

Regional Biochar Group Updates

To read more on the 41 regional and national biochar groups, please see IBI's website. This month includes an update from the Illinois Biochar Group.

Illinois Biochar Group (United States)

The Illinois Biochar Group (IBG) is hosting a joint meeting of IBG with the Illinois Biomass Working Group (IBWG) on March 1, 2012, at the Illinois Sustainable Technology Center in Champaign, Illinois. The meeting is an opportunity to learn more about biochar and biomass research and use in Illinois and the Midwest, exchange information, and discuss ways to collaborate on projects. The agenda and registration information for the meeting can be found at www.biochar.illinois.edu. There will be eight speakers on biomass/biochar topics as well as a

panel discussion on “Biochar as a Value-added Strategy”. Please contact Nancy Holm, Illinois Biochar Group Coordinator, if you have any questions.

Recently Published Biochar Research

IBI tracks all published research on biochar and includes it in our online bibliography. 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.

- HX, Chen, ZL Du, W Guo, and QZ Zhang (2011). Effects of biochar amendment on cropland soil bulk density, cation exchange capacity, and particulate organic matter content in the North China Plain. Ying Yong Sheng Tai Xue Bao. Volume 22, Number 11; p.2930-4 (in Chinese).
- Dempster, D. N., Jones D. L., and Murphy D. V. (2012). Organic nitrogen mineralisation in two contrasting agro-ecosystems is unchanged by biochar addition. Soil Biology and Biochemistry. 02/2012.
- Fischer, Daniel, and Glaser Bruno (2012). Synergisms between Compost and Biochar for Sustainable Soil Amelioration. Management of Organic Waste. Volume Section 10; p.167 – 198.
- Maia, Claudia B. F., Madari Beata, and Novotny Etelvino H. (2011). Advances in Biochar Research in Brazil. Dynamic Soil, Dynamic Plant. http://www.alice.cnptia.embrapa.br/bitstream/doc/915016/1/AdvancesinBiocharResearchinBrazil.pdf
- Shenbagavalli, S., and Mahimairaja S (2012). Production and Characterization of Biochar from Different Biological Wastes. International Journal of Plant, Animal, and Environmental Sciences. 01/2012.
- Stavia, I. (2012).The potential use of biochar in reclaiming degraded rangelands. Journal of Environmental Planning and Management. 01/2012.
- Y, Yao, B Gao, H Chen, L Jiang, M Inyang, AR Zimmerman, X Cao, L Yang, Y Xue, and H Li (2012). Adsorption of sulfamethoxazole on biochar and its impact on reclaimed water irrigation. J Hazard Mater. 01/2012.