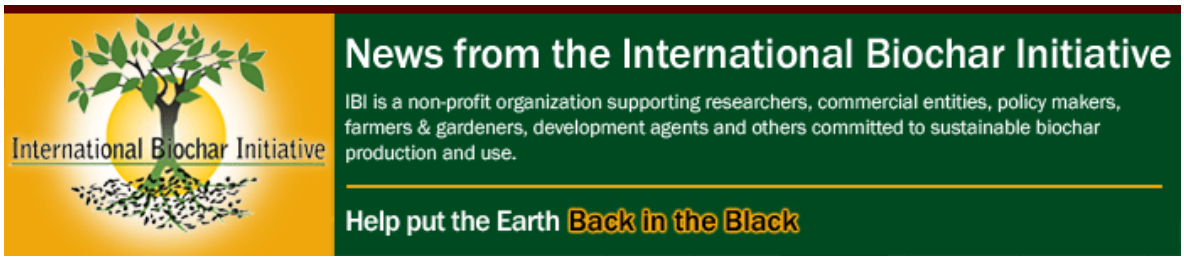

May 25, 2012

IBI Biochar Standards and Testing Guidelines Completed and Approved

On May 6, 2012 the membership of the International Biochar Initiative approved the first international *Biochar Standards and Testing Guidelines* after a two-week open ballot. These are the result of a multi-year development process that was global, transparent, and inclusive, and that involved the input and participation of hundreds of research scientists, entrepreneurs, farmers, and other stakeholders in the drafting, review, and approval of the document. The *Standardized Product Definition and Product Testing Guidelines for Biochar That Is Used in Soil* may be freely distributed and used for non-commercial purposes under a Creative Commons copyright license that is included in the document for reference. Please see the Biochar Standards page on the IBI site for more information.

Biochar Standards Documents for Download:

- Standardized Product Definition and Product Testing Guidelines for Biochar That Is Used in Soil
- FAQ - Frequently Asked Questions on the Standards
- Slides from Webinar - Overview of the IBI Biochar Standards - Final Version
- IBI Biochar Standards and Testing Guidelines - Process History

(Please note that in this final version, the title of the document has changed from: *Guidelines for Specifications of Biochars for Use in Soil* to *Standardized Product Definition and Product Testing Guidelines for Biochar That Is Used in Soil*. The shorthand reference to the document has also changed from *Biochar Guidelines* to *Biochar Standards and Testing Guidelines* or just *Biochar Standards*.)

Publication of the *Final Biochar Standards and Testing Guidelines* is not the conclusion of the process, but rather the beginning of a new phase where the *Biochar Standards and Testing Guidelines* will be tested in practical applications. IBI expects over time that the document will evolve in an iterative fashion as science and further developments in the biochar field warrant updates and revisions. IBI welcomes your comments and suggestions at any time for improvements to the *Biochar Standards*. You may send those by email to: BiocharGuidelineIBI@gmail.com.

Note if you downloaded a copy of the final *Biochar Standards* before May 15, 2012, please download again. A recent technical amendment was made to Appendix 2 to correct the

instructions on how to prepare samples for measuring pH (they are to be diluted using a w:v process, not a w:w or v:v process, as previously stated. Full explanation of this issue is found in the appendix.) IBI will keep a log of any technical amendments made before the next revision on a Biochar Standards Archive page.

IBI would like to sincerely thank the global biochar community for their participation and support throughout this entire process. We would especially like to thank our funders, our members, our Board of Directors, Leading Carbon, Ltd, Brooks Pierce, LLP and the working group participants and collaborators who dedicated themselves to the process and the development of this document.

IBI Biochar Certification Program

Additionally, progress on IBI's Biochar Certification Program continues, and we anticipate that we will be ready to make announcements on the program, including timing and roll-out activities in the very near future. The Certification Program will be based on the *Biochar Standards and Guidelines*, and we are grateful for the high level of interest that the biochar community and our members have shown in this program already. We are very eager to begin sharing details of the program with you. Be looking for details in future IBI announcements.

New IBI Organization Member:

The Center of Biochar and Green Agriculture, Nanjing Agricultural University

The Center of Biochar and Green Agriculture was launched in September 21-23, 2011 during the International Workshop on Biochar and New Green Agriculture of China. This center is a multi-discipline research and technology development unit with special focus on issues with biochar production from crop straw and applications in agriculture. Being coordinated by Dr Genxing Pan, a senior scientist of soil science and climate change research of China, the center is based in the Institute of Resource, Ecosystem and Environment of Agriculture and the Provincial Key lab of Greenhouse gas mitigation and low carbon agriculture of Jiangsu within the Nanjing Agricultural University system.
For more information, please see:
http://www.biochar-international.org/Conference/China_Green_Agriculture_2011 or contact Genxing Pan or Xinyan Yu.

Biochar Greenhouse Gas Protocol Development

The International Biochar Initiative is pleased to announce that it will be collaborating with its partners The Climate Trust and The Prasino Group to develop a biochar greenhouse gas offset protocol for voluntary carbon markets. The protocol work will build on the existing work of the Biochar Protocol Initiative to finalize a market-ready biochar protocol which will qualify and quantify biochar projects to receive greenhouse gas offset credits. The protocol development process will be transparent, and will continue to engage the global biochar community. It will also incorporate key elements of IBI's recently-completed Biochar Standards. The collaborators will announce two parallel efforts in the coming weeks: (1) a draft protocol will be posted for public comment for a 4-week period, during which time IBI will host two public webinars to review the protocol and to answer questions about the draft and the overall protocol development effort; and

(2) IBI will convene a group of experts to assist in the identification of a test methodology to measure the long term stable carbon contained in biochar. This carbon stability methodology is a critical component of the biochar protocol. Additional information about these efforts, including nominations to participate in the stable carbon methodology assessment, will be announced in the coming weeks.

Send us your story

Are you working in biochar and have a story to tell? Our staff is always on the lookout for good profiles and if you would like to work with us on a profile story highlighting your work, please contact Thayer Tomlinson. We publish 1 – 2 profiles a month in our newsletter, on our home page, and at: http://www.biochar-international.org/projects/practitioner/profiles.

Hands-on Biochar Workshop Held in Byron Bay, NSW, Australia, April 2012

The second annual Biochar Boot Camp was held April 20 – 22, 2012, at Star Seed Gardens Nursery in Byron Bay. There were 24 registrants with Paul Taylor, Stephen Joseph, and Dan Schreiber (Star Seed Gardens host) facilitating. The workshop focused on how to make, test, and apply special biochar mixtures to work in Australian soils.

Friday evening presentations included a slide show featuring information from The Biochar Revolution, by Paul Taylor. Saturday was devoted to hands-on workshops. Participants broke into two groups, one to explore assembling and firing some new biochar oven designs, the other to assemble mixtures of straw, clay, manure, and minerals in bamboo to be fired in those new ovens. With sparks flying, recycled drums, mesh, metal plates, and tubes were cut up and welded into new biochar machines. The day ended with a Bamboo Feast, including fish curry cooked in bamboo on TLUD heaters, and marinated chicken wings on TLUD BBQ. On Sunday morning the metal workers and welders remained focused on assembling the new oven, while others experimented with TLUD driven retorts. See the IBI Open Source Technology page for pictures and a description of the new biochar oven design. You can also view a seven-minute video report on the workshop.

Participants left the workshop with a greater understanding of how to make a simple biochar reactor, produce a range of different biochars at different temperatures, carry out basic tests, make biochar/compost/mineral blends, understand the properties of different biochars, and effectively apply biochar in different ways in vermi-ponics, hydroponics, and aqua-ponics. For additional information contact Paul Taylor.

Biochar Briefs: News Roundup for May

We update the website daily with new articles on biochar. For more information, please see:

http://www.biochar-international.org/newsbriefs.

Australia
Five new research projects will share $2 million of Federal Government funding to investigate the impacts of biochar in reducing farm-scale carbon emissions.

Austria
The European Geosciences Union (EGU) General Assembly 2012, held April 22 – 27 in Vienna, addressed the release of carbon from soil into the atmosphere and ways to enhance soils' ability to sequester carbon, including the use of biochar.

Canada
An entrepreneur from Prince George has applied to appear on the reality TV show Dragon's Den. IBI Advisory Committee member Scott Scholefield is the President of Out of Ashes Bioenergy, which sells a unit that provides hot water heating to greenhouses while producing biochar. If Scholefield is selected for the show, he will appear on television on June 3, 2012.

Germany
German cemeteries could generate energy by using their abundant open space to grow biofuel crops. Adding biochar to the soils will help.

Ghana
Five start-up entrepreneurs from Ghana have received the prestigious SEED Award, founded by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the International Union for Conservation of Nature (IUCN). The "Rural Transportation and Renewable Products Conversion Centres for Agro-residues" initiative will provide cargo bikes for the collection of crops as well as agro-residues which are converted to biochar, charcoal, and biofuels in a facility also set up by the initiative.

Indonesia
Scientists working in Indonesian Borneo have found the first evidence of terra preta in Asia, with many similar features to the anthropogenic dark earths found in the Amazon.

United Kingdom
Young Irish entrepreneur Elaine Doyle has made it to the semi-final round of Ben & Jerry's Join Our Core initiative with her biochar business. Five finalists will win a €10,000 cash prize, business mentoring, and the chance to see their name on tubs of Ben & Jerry's ice cream in 2013.

Heriot-Watt University in Edinburgh has been awarded £105,056 from the Leverhume Trust to investigate the carbon capture potential of biochar.

United Nations
Biochar is one technology that can help nations in Asia cope with climate change, according to a new report from the United Nations Development Programme (UNDP).

United States
The Agricultural Biomass Center in California is helping small farmers learn how to produce

energy and biochar from agricultural waste. Building projects at the right scale is key to economic viability.

Scientists, river advocates, and homesteaders in the Redwood forest region of California met to solve watershed problems. Biochar made from young trees thinned from overstocked forests could help stabilize and restore soils.

Washington-based Whitfield Biochar LLC is developing a biomass thermal technology that can use multiple feedstocks to produce syngas, as well as biochar. It is designed to be scalable and meet local thermal demand.

"Focus on the soil, nurture its biodiversity, spike it with biochar and stop it from washing away (partially by stopping the wholesale slaughter of microbial life with pesticides)." So concludes Scientific American writer David Biello after attending a conference on the future of food.

An Iowa-based turkey farmer has partnered with the U.S. DOE and the University of North Dakota's Energy & Environmental Research Center (EERC) to test and further develop a fixed bed, downdraft gasifier to produce energy and biochar from poultry litter.

Biochar is featured at "Dirt-O-Rama: Intriguing Tales from the Underground", a summer exhibition at the Minnesota Landscape Arboretum, running June 2 – October 14.

Cool Planet Biofuels has persuaded Google, General Electric, BP, ConocoPhillips, NRG Energy, Exelon, and venture capital firms Shea Ventures and North Bridge Venture Partners to invest millions of dollars in the company to produce liquid fuel while sequestering carbon in soils as biochar.

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.

- Submit an Expression of Interest: Organizers for the upcoming International Training Course on Biochar Production, Testing and Utilisation (Nanjing, China) Sept 10 - 15, 2012 are looking for expressions of interest from potential participants. 20 spots have been taken and there are only 5 left. For more information on this opportunity as well as a current draft agenda, please see: http://www.biochar-international.org/node/3239.
- Receive a free biochar consultancy/research for your company. If you have a company address in Wales, Bangor University is offering free biochar consultancy and research under the European Union SEREN program. For more information, please see: http://www.biochar-international.org/node/3233.
- Submit an abstract for the Biomass Waste Management as a Source of Renewable Energy, Agriculture Sustainable, and Global Warming Mitigation conference; location East Java, Indonesia; **due May 1, 2012**. For more information, please see: http://www.biochar-international.org/node/3156.

- Submit an abstract for the 30th International Activated Carbon Conference, Pittsburgh, PA USA October 4 – 5, 2012. For more information, please see: www.pacslabs.com/conferences/iacc.

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

Subscribe to the Northwest Biocarbon Initiative (NBI) e-digest

The Northwest Biocarbon Initiative (NBI) is galvanizing the region's top biocarbon innovators – farmers, foresters, community leaders, and thinkers – to demonstrate the essential role that natural systems can play in reducing carbon dioxide levels in the atmosphere to ensure long-term climate stability. NBI's e-digest helps highlight what Northwest biocarbon innovators are doing to advance cutting-edge practices in order to increase carbon storage in forests, farms, and communities.

The best biocarbon solutions offer multiple-benefits – they work from a number of different angles – saving money, enhancing habitat, improving water quality, and controlling stormwater, for example. Biochar solutions are multi-benefit, too – generating sustainable energy, enhancing soil fertility, improving water retention, and storing carbon for the long-term.

NBI therefore supports the use of biochar and IBI's mission to develop sustainable biochar production, and will feature future biochar blogs and updates in the e-digest. Sign up for the Northwest Biocarbon Initiative e-digest here or drop a line to Jeannette Allan.

Upcoming Calendar Events

- May 24 – 25, 2012: Biochar: The soil is the limit!; location Wageningen, the Netherlands; more information: http://www.biochar-international.org/node/3274
- June 18 - 22, 2012: 20th European Biomass Conference and Exhibition; location Milan, Italy; more information: http://www.biochar-international.org/node/2952.
- June 26 – 27, 2012: Biomass Waste Management as a Source of Renewable Energy, Agriculture Sustainable, and Global Warming Mitigation; location East Java, Indonesia; more information: http://www.biochar-international.org/node/3156.
- July 2 – 6: Biochar Symposium at the EuroSoil 2012 Conference; location Bari, Italy; more information: http://www.biochar-international.org/node/2622.
- July 3 – 5: International Symposium on Reclamation, Restoration & Rehabilitation Towards a Greener Asia; location Kuala Lumpur, Malaysia; more information: http://www.biochar-international.org/node/3091.
- July 29 – August 1: United States Biochar Conference; location Sonoma, CA, United States; more information and registration: http://2012.biochar.us.com.

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 43 regional and national biochar groups, please see IBI's website. This month includes an update from the Illinois Biochar Group (United States).

Illinois Biochar Group (United States)
The summer meeting of the Illinois Biochar Group will be held on Thurs., June 14 from 1 pm – 3:30 pm at the Illinois Sustainable Technology Center on the campus of the University of Illinois (UI) at Urbana-Champaign. There will be presentations on current biochar research projects and other biochar/stove activities by members, including Paul Wever of Chip Energy discussing the new grant to start construction of the Biomass Conversion Facility in Goodfield, Illinois; Paul Anderson talking about work with stoves in Haiti and also Uganda/Kenya; and several UI researchers presenting their research. Any person doing work on biochar in the Midwest who would wish to talk about their project can contact Nancy Holm, IBG coordinator, before May 31. There will also be discussion about the new IBI Standards. A list of presenters and the agenda will be posted on the IBG website by June 1. There will be tours of ISTC laboratory facilities at 12:30 pm and 3:30 pm that day as well.

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.

- Borchard, N., A. Wolf, V. Laabs, R. Aeckersberg, H. W. Scherer, A. Moeller, W. Amelung (2012). Physical activation of biochar and its meaning for soil fertility and nutrient leaching – a greenhouse experiment. Soil Use and Management.
- Case, Sean D. C., Whitaker Jeanette, McNamara Niall P., and Reay David S. (2012). The effect of biochar addition on N2O and CO2 emissions from a sandy loam soil – The role of soil aeration. Soil Biology and Biochemistry.
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- Chih Chun Kung (2012). Biochar Utilization in Poyang Lake Eco-Economic Zone: Chances and Difficulties. Journal Advanced Materials Research (Volumes 512 - 515) Volume Renewable and Sustainable Energy II. Pages 347-350.
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- Da Quan Sun, Meng Jun, Wei Ming Zhang, Xue Chao Guan, Yu Wei Huang, Yu Lan, Ji Ping Gao, Wen Fu Chen (2012). Implication of Temporal Dynamics of Microbial Abundance and Nutrients to Soil Fertility under Biochar Application – Field Experiments Conducted in a Brown Soil Cultivated with Soybean, North China. Journal Advanced Materials Research (Volumes 518 - 523). Pages 384-394.

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- Kwang Ho Kim, Jae-Young Kim, Tae-Su Cho, Joon Weon Choi (2012). Influence of pyrolysis temperature on physicochemical properties of biochar obtained from the fast pyrolysis of pitch pine (Pinus rigida). Bioresource Technology
- Leach, Melissa, Fairhead James, and Fraser James (2012). Green grabs and biochar: Revaluing African soils and farming in the new carbon economy. Journal of Peasant Studies. Volume 39, Number 2, p.285-307.
- Mahtab Ahmad, Sang Soo Lee, Xiaomin Dou, Dinesh Mohan, Jwa-Kyung Sung, Jae E Yang, Yong Sik Ok (2012). Effects of Pyrolysis Temperature on Soybean Stover- and Peanut Shell-derived Biochar Properties and TCE Adsorption in Water. Bioresource Technology.
- Niggli C, Schmidt HP (2012). Biochar in European Viticulture: Results of the Season 2011. Ithaka Journal 1/ 2012: 250–261. Delinat-Institute for Ecology and Climatefarming, CH-1974 Arbaz. ISSN 1663-0521. http://www.ithaka-journal.net/druckversionen/e022012-bc-viticulture.pdf.
- D. Noguera, S. Barot, K.R. Laossi, J. Cardoso, P. Lavelle, c, M.H. Cruz de Carvalho (2012). Biochar but not earthworms enhances rice growth through increased protein turnover. Soil Biology and Biochemistry.
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Temperature on Biochar, Liquid and Gas Fractions. Journal Advanced Materials Research (Volumes 518 - 523) Volume Advances in Environmental Science and Engineering. Pages 3412-3420.

- Tian-Yu Jiang, Jun Jiang, Ren-Kou Xu, Zhuo Li (2012). Adsorption of Pb(II) on variable charge soils amended with rice-straw derived biochar. Chemosphere.
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