



## September 2013 News from the International Biochar Initiative

### [American Carbon Registry Announces Public Comment Period Open for \*Methodology for Biochar Projects\*](#)

The Methodology for Biochar Projects (aka the Biochar Carbon Offset Methodology) [has just been posted for public comment on the American Carbon Registry's \(ACR\) website](http://americancarbonregistry.org/carbon-accounting/methodology-for-biochar-projects) (link to <http://americancarbonregistry.org/carbon-accounting/methodology-for-biochar-projects>). The American Carbon Registry (ACR) is a non-profit enterprise of Winrock International and is seeking feedback from members, stakeholders, project proponents, and other interested parties by **October 25, 2013**.

The methodology was prepared by a project team consisting of The Climate Trust, The Prasino Group, The International Biochar Initiative (IBI), and Carbon Consulting. Several rounds of initial revisions and clarifications requested by ACR to the draft methodology have been completed by the methodology project team. During the current public comment period, ACR will also offer a stakeholder consultation webinar to solicit additional public input; IBI will widely announce the webinar date to our members and stakeholders. The project team will then respond to public comments in a further revision of the document, and this version will then undergo at least two rounds of comment-and-response by a scientific peer review panel convened by ACR. Upon completion of the peer review and approval by ACR, the final methodology will be published on ACR's website and available for use by project proponents.

The methodology embeds the International Biochar Initiative's *IBI Biochar Standards* (2013) as a requirement to use only biochar materials that meet IBI's globally developed standards to ensure biochar material and safety requirements are met.

Projects using this methodology must comply with all requirements of the *ACR Standard*, submit a GHG Project Plan for certification by ACR, and secure independent validation and verification by an ACR-approved third-party validation/verification body.

For more information on this public comment period, please see: <http://americancarbonregistry.org/carbon-accounting/methodology-for-biochar-projects>. The full Methodology for public comment can be found at: <http://americancarbonregistry.org/carbon-accounting/biochar-public-comment>.

## Technical Program Revision to PAH and PCB Test Methods in IBI Biochar Standards

IBI has just published a technical note describing a technical program revision to the *Standardized Product Definition and Product Testing Guidelines for Biochar That Is Used in Soil* (aka *IBI Biochar Standards*) version 1.1. The revision allows for additional test methods to analyze polychlorinated biphenyl (PCB) and polycyclic aromatic hydrocarbon (PAH) contents of biochars as required in Test Category B – Toxicant Assessment. A full explanation and rationale is given in the technical note describing the revision. This revision is effective immediately and all users of the IBI Biochar Standards are now able to choose the appropriate test method for PCBs and PAHs in their biochar samples. Standards will be able to choose the appropriate test method for PCBs and PAHS in their biochar samples. You can view the technical note on the *IBI Biochar Standards* website directly at: [http://www.biochar-international.org/sites/default/files/Technical\\_Note\\_PAHs\\_PCBs\\_Test\\_Method.pdf](http://www.biochar-international.org/sites/default/files/Technical_Note_PAHs_PCBs_Test_Method.pdf).

## Business and Organization Member Profiles

A listing of all current IBI [Business](#) and [Organization](#) Members can be found on our website. For more information on membership opportunities and benefits, or to join, please see: <http://www.biochar-international.org/join>. Please note, Business and Organization descriptions are submitted by each individual entity, and are not developed or written by IBI.

### **New Organization Member: International Center for Biosaline Agriculture (ICBA)**

ICBA is a non-profit, autonomous international agricultural research center headquartered in Dubai, UAE. ICBA conducts research and development programs that aim to improve agricultural productivity and sustainability in marginal environments.



ICBA's multi-pronged approach to address the closely linked challenges of water, environment, income, and food security include research innovations in the assessment of natural resources, climate change adaptation, crop productivity and diversification, aquaculture and bio-energy and policy analysis. ICBA is working on a number of technology developments including the use of conventional and non-conventional water (such as saline, treated wastewater, industrial water, and seawater); water and land management technologies and remote sensing and modeling for climate change adaptation. Building capacity and sharing knowledge is an important part of all ICBA does. ICBA's work reaches countries, including least developed countries, in Central Asia and the Caucasus, the Middle East and North Africa (MENA), South and South East Asia, sub-Saharan Africa and Gulf Cooperation Council countries.

For more information on ICBA, please visit our website: [www.biosaline.org](http://www.biosaline.org) or contact F.J.C. Chandler at [f.chandler@biosaline.org.ae](mailto:f.chandler@biosaline.org.ae).

## Profile: Big Biochar Experiment Update

The Big Biochar Experiment is the first large-scale citizen science study on the use of biochar in allotments and gardens in the United Kingdom. The study aims to gather quantitative data on productivity, and qualitative data on plant and soil health of widely used fruit and vegetable varieties. Ultimately, the project aims to combine these data with existing information on weather and soil quality, to understand the effects of biochar on the productivity of plants across a range of soils. Dr. Girardin, lead scientist of the experiment, reflects on their first year of sampling (for an overview of the project from 2012, please see: <http://www.biochar-international.org/profile/bigbiochar>).

Preliminary results showed a significant increase in yields from most produce. The project administrators estimated a mean increase of about 15% across the dataset and reported positive results from 87% of trials. They learnt a lot about the experimental design in this first year. The promotion of the experiment was very successful, with 344 sign ups within the first few months of launching the study. However, 2012 was a difficult year for horticulturalists in the UK due to weather and the project only received 72 responses from participants. In terms of data quality for those that did participate, the experiments were carried out in a meticulous way and the data were reliable, demonstrating the great potential for citizen science as a low cost option for gathering data over a large geographical area. They continue to receive data from participants, but are also changing their approach to data collection. This year, they are working with Garden Organics on a member's experiment and working with school programs that will take students from experimental design to paper writing on their biochar trials.



*Photo: Results from a participant shows remarkable results on beetroots and radishes: yields were an astonishing 70.6% and 69.8% higher in the biochar plot; courtesy of the Big Biochar Experiment.*

## Biochar Briefs: News Roundup for September

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

### **Australia**

Biochar has been used on Australian farms, but rarely as far north as Darwin. A local organic

farm there is conducting field trials (with help from Earth Systems) on a two hectare block of zucchinis, cucumbers, and watermelons at application rates of 10, 25, and 45 tonnes/hectare. Says farmer David Boehme, "The biochar is basically pure carbon and that's what we're lacking, the whole country up here is carbon poor, so by applying this we hope to see some big differences... we'd like to see some great changes to the crop, especially during this time of year when we're really heat stressed." (Link to: <http://www.abc.net.au/news/2013-08-30/biochar-trial-northern-territory/4924164>).

### **Canada**

A biochar research project being undertaken at Collège Boréal is looking at how biochar could provide income to northern forestry companies by replacing dolomitic limestone that is typically used in the area's re-greening projects. Biochar has a higher pH level than limestone, and the researchers are studying if using biochar instead of limestone could help reduce the acidity of the soil, while reducing the cost of limestone and fertilizer used in the reseeded process. (Link to: <http://www.northernontariobusiness.com/Industry-News/forestry/2013/09/Research-project-studying-potential-of-biochar-on-regreening.aspx>).

### **Portugal**

A team of scientists is currently working on the first biochar field trials in Portugal. In the region of Bairrada, the researchers are studying the use and impact of biochar on vineyards throughout the 2013 growing season. The first results indicate that, in addition to a positive effect on soil nutrients, the biochar helps to improve water retention and filtration which are both essential factors in combating drought and erosion. (Link to: <http://noticias.universia.pt/ciencia-tecnologia/especial/2013/09/23/1051191/universidade-aveiro-apresenta-biochar-um-milagre-solos-e-clima.html>).

### **Switzerland**

Nestlé is looking at new ways to be more sustainable—even with its coffee capsules. The aluminum of the capsules is recycled, and in Switzerland, much of the remaining coffee grounds are being delivered to Swiss Biochar in Lausanne. Since 2010, the company has operated a facility to produce biochar from the coffee grounds. Local farmers purchase the biochar and spread it in their barns to eliminate animal odors and are also using it in the fields to increase humus content. (Link to: <http://derstandard.at/1376535516915/Schwammerln-aus-dem-Kaffeesatz>).

### **United States**

Emily Cole, a graduate student at the University of Massachusetts-Amherst Stockbridge School of Agriculture, is setting up large scale field trials in cornfields to study the effects of various concentrations of biochar on the crop. While not yet ready for empirical analysis, the trials have already demonstrated positive effects in the past two years. "We are beginning to see promising results even in the first year of data collection," she said. (Link to: <http://dailycollegian.com/2013/09/26/biochar-a-solution-to-climate-change-soil-fertility-and-energy-production/>).

## [Register Now for the 2013 USBI North American Biochar Symposium](#)

Farmers, foresters, researchers, biochar producers, entrepreneurs, and environmentalists will convene in Amherst, Massachusetts, US on October 13 – 16, 2013 to learn more about biochar

and share the latest research and application techniques with their peers. The [2013 USBI North American Biochar Symposium](http://symposium2013.pvbiochar.org) (link to <http://symposium2013.pvbiochar.org>), titled “*Harvesting Hope: The Science and Synergies of Biochar*,” will take place on the UMass-Amherst campus and include farm tours and a “carbon negative” banquet of delicious foods grown with the help of biochar. The conference is sponsored by the U.S. Biochar Initiative (USBI).

The conference will feature keynotes by Congressman James McGovern, renowned author Frances Moore Lappe, as well as plenaries with Doris Hamill of NASA Langley, IBI Board Chair Johannes Lehmann of Cornell University, and author and biofuels producer since 2002, Lyle Estill. Activities will range from an introductory half-day [workshop](http://scholarworks.umass.edu/biochar/2013/All_Plenaries/1/) (link to: [http://scholarworks.umass.edu/biochar/2013/All\\_Plenaries/1/](http://scholarworks.umass.edu/biochar/2013/All_Plenaries/1/)) for farmers and gardeners on Sunday, October 13, that is open to the public, to presentations from scientists and researchers from around the globe.

“Expanding the use of biochar can simultaneously help address food security, conserve water, and reduce our dependence on fossil fuel,” said Ted Wysocki, chair of the Pioneer Valley Biochar Initiative, which is hosting the conference. “Attendees won’t just be chewing on information about biochar, they’ll be savoring delicious local produce grown in biochar-conditioned soil, as well as a variety of meat and beverages enhanced by biochar at the ‘Biochar Banquet’ on Monday, October 14<sup>th</sup>, which is open to the public.” Wysocki explained.

To view the conference schedule, visit <http://scholarworks.umass.edu/biochar/2013/>. To register, go to <http://symposium2013.pvbiochar.org/register>.

## Opportunities in Biochar

- Vote for Biochar Project in Kenya in the Solution Search Contest: Congratulations to the African Christian's Organization Network (ACON) which is 1 of 10 finalists in Solution Search's contest on Climate Change. ACON's work centers on using invasive water hyacinth as a feedstock for biochar stoves in Kenya. You can vote once a day at: <http://solutionsearch.org/vote>. To read more about the contest, please see: <http://www.solutionsearch.org/contest/adapting-changing-climate>.
- The Philippine Biochar Association is looking to explore the use of biochar to rehabilitate mined lands. The Philippines has seen an increase in mining activity in the past decades and this has left vast areas of land bare and highly acidic to the point that it can no longer sustain plant life. The Association would like to collaborate with a company or individual with experience and technical expertise on the rehabilitation of mined or deforested areas. Please contact them at attn: James Burke Ong at [philippinebiocharassociation@gmail.com](mailto:philippinebiocharassociation@gmail.com).
- New job postings can be accessed at: <http://www.biochar-international.org/network/jobs>.

## Upcoming Calendar Events

- October 13 – 17: 2013 USBI North American Biochar Symposium: Harvesting Atmospheric Carbon: the Science and Synergies of Biochar. Location: Massachusetts, US. For more information: <http://www.biochar-international.org/node/3694>.
- October 14 – 18: 10th Meeting of the Grupo Brasileiro da Sociedade Internacional de Substâncias Húmicas (IHSS), Brazil. For more information: <http://www.biochar-international.org/node/4048>.



- October 17 – 20: International Conference on Biochars, Composts, and Digestates/2013 International Biochar Conference. Location: Bari, Italy. For more information: <http://www.biochar-international.org/node/4096>.
- October 25 – 31: The Second International Biochar Training Course held at Nanjing Agricultural University (NJAU). Location: Nanjing, China. For more information: <http://www.biochar-international.org/node/3844>.
- October 27 – 30: 2013 Geological Society of America's Annual Meeting with a session on "Pyrogenic black carbon, or biochar, in soils and sediments, its characterization and fate, its effects on the carbon cycle and carbon sequestration, and its effects on soil properties". Location: Colorado, US. For more information: <http://www.biochar-international.org/node/4128>.
- October 29 – 30: "bioenergy+recycling" Conference with Exhibition American-European Technology and Business Exchange. Location: Pennsylvania, US. For more information: <http://www.biochar-international.org/node/4101>.
- November 17 – 20: SETAC North America 34th Annual Meeting with "Environmental implications of biochar" symposium. Location: Tennessee, United States. For more information: <http://www.biochar-international.org/node/4094>.

See the [IBI Calendar page](#) for more events. To add an event to the calendar, send the information to [info@biochar-international.org](mailto:info@biochar-international.org).

## Regional Biochar Group Updates

To read more on the 55 regional and national biochar groups, please see IBI's website (link to: <http://www.biochar-international.org/network/communities>). This month includes updates from the Philippine Biochar Association and the Illinois Biochar Group (United States).

### **The Philippine Biochar Association (PBA)**

The Philippines, being prone to natural disasters especially during the monsoon seasons, is currently abuzz with activity regarding climate change and disaster preparedness and the PBA is in the forefront of pushing for the use and support of biochar as an effective counter to climate change effects. The Philippine Biochar Association puts great effort into exploring new partnerships with groups from diverse backgrounds to move the whole Philippine society forward into the biochar movement. The success of the First National Biochar Conference held in April 2013 put the PBA one step closer to achieving this goal. The conference was attended by representatives of the private and public sectors, including major government agencies that participated both as guests and speakers. The Japan Biochar Association and the International Rice Research Institute also provided substantial inputs throughout the conference. Building on this momentum, in April the PBA presented information on biochar to the national government's Climate Change Commission and their partner organizations. This impressed attendees from the national government and representatives from the United Nations World Food Programme Philippines (UNWFP). The PBA was then approached by the program director for the Disaster Risk Preparedness/Climate Change Adaptation Program to be a partner in a biochar information dissemination project. The PBA and UNWFP Philippines signed a Memorandum of Agreement to provide biochar presentations and consultations in the UNWFP partner provinces from June to August, areas that were identified as the most disaster prone in the country. These provincial biochar consultations were designed to evaluate local community interests in starting their own community-based biochar programs. To date, the PBA has completed five consultations in the

provinces of Cagayan, Laguna, Sorsogon, Batangas, and Benguet. If the interest level in the provinces is evaluated to be high enough for communities to achieve a sense of ownership with biochar programs, a second implementation phase will occur. For more information on the PBA, please see: <http://philippinebiocharassociation.com/>.

### **The Illinois Biochar Group (United States)**

The Illinois Biochar Group fall meeting will be held on Nov. 15, 2013, at the National Center for Agricultural Utilization Research (NCAUR), 1815 University Ave., Peoria, IL. The meeting will begin at 1:15 p.m. Prior to that, from 11:15 a.m. – noon there will be lunch available and networking opportunities. From noon – 1 pm there will be tours of the Center and also additional tours at 3:45 p.m., after the meeting. Please contact Steve Peterson, Research Chemist at NCAUR, with any questions ([Steve.Peterson@ars.usda.gov](mailto:Steve.Peterson@ars.usda.gov) or 309-681-6325). The agenda for the meeting will be posted shortly on the IBG website at [www.biochar.illinois.edu](http://www.biochar.illinois.edu). The meeting is open to anyone interested in biochar production and applications.

### 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 infringement laws, 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](#).

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Cai, Dongqing; Longhai Wang; Guilong Zhang; Xin Zhang; and Zhengyan Wu (2013). Controlling pesticide loss by natural porous micro/nano composites: straw ash-based biochar and biosilica. *ACS Appl. Mater. Interfaces*.

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Dehkhoda, Amir Mehdi; Naoko Ellis; Elod Gyenge (2013). Electrosorption on activated biochar: effect of thermo-chemical activation treatment on the electric double layer capacitance. *Journal of Applied Electrochemistry*.

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Jiang, Jin Ping; Xian Bin Yuan; Li Li Ye; Shu Chang Liao; Xue Hong Zhang (2013). Characteristics of Straw Biochar and its Influence on the Forms of Arsenic in Heavy Metal Polluted Soil. *Applied Mechanics and Materials* (Volumes 409 - 410).

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Lee, Yongwoon; Jinje Park; Changkook Ryu; Ki Seop Gang; Won Yang; Young-Kwon Park; Jinho Jung; Seunghun Hyun (2013). Comparison of Biochar Properties from Biomass Residues Produced by Slow Pyrolysis at 500 °C. *Bioresource Technology*.

Li, Sihan; Zhengrong Gu; Evan Brady Bjornson; Arthy Muthukumarappan (2013). Biochar Based Solid Acid Catalyst Hydrolyze Biomass. *Journal of Environmental Chemical Engineering*.

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Manyà, Joan Josep; Sergio Laguarda; and Miguel Angel Ortigosa (2013). Study on the Biochar Yield and Heat Required during Pyrolysis of Two-Phase Olive Mill Waste. *Energy Fuels*.

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Sika, M. P.; A. G. Hardie (2013). Effect of pine wood biochar on ammonium nitrate leaching and availability in a South African sandy soil. *European Journal of Soil Science*.

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