



April 2015 News from the International Biochar Initiative

IBI to Launch an Online Biochar Classification Tool

Biochar may offer direct and indirect benefits when applied to soils. These benefits are based on diverse material properties of the biochar and are manifested when added to fulfil specific soil or crop needs. In order to better understand how a specific biochar may function when incorporated as a soil amendment, IBI has developed an online tool that allows producers and other stakeholders to classify their biochar materials [based on a set of physicochemical properties](#). IBI will launch this tool in the next week.

The IBI Biochar Classification Tool—derived from the paper *A Biochar Classification System and Associated Test Methods*¹—classifies four biochar properties: 1) carbon storage value, 2) fertilizer value (Phosphorous, Potassium, Sulfur, and Magnesium only), 3) liming value, and 4) particle size distribution. In addition, the tool provides the fertilizer grade for six plant nutrients (Nitrogen (N), Phosphorous (P), Potassium (K), Sulfur (S), Calcium (Ca), and Magnesium (Mg)). To classify a biochar with the tool, users must have laboratory-measured values of: hydrogen to organic carbon ratio (H/C_{org}) and organic carbon concentrations (C_{org}); plant-available levels of P, K, S, and Mg; calcium carbonate equivalent (% Calcium carbonate (CaCO₃-eq); and particle size distribution. To provide the fertilizer grade, users must have information on total and plant-available levels of N, P, K, S, Ca, and Mg.

¹Camps Arbertain M, J.E. Amonette, B. Singh, T. Wang, H-P. Schmidt. 2015. *A Biochar Classification System and Associated Test Methods*. In: *Biochar for Environmental Management - Science and Technology*, 2nd edition. J. Lehmann and S. Joseph (eds.). Routledge, New York.

IBI to Publish Second Annual *State of the Biochar Industry Report*

IBI is pleased to announce that the *State of the Biochar Industry 2014* will be available on our website in the coming days. This is the second year in which IBI has published a report documenting the current state of businesses operating in the biochar sector and year-over-year trends. This year's report focuses exclusively on for-profit biochar enterprises and includes case studies documenting the diversity of operations in the sector as well as comparisons between 2013 and 2014. The number of active companies identified in 2014 rose by over 10% from 2013 but there was also high turnover with numerous companies exiting the biochar space. Data on prices, volumes, revenues, and many other parameters are included. The report includes recommendations for future industry growth—beginning with an enhanced emphasis on building broader biochar awareness for the marketplace.

IBI dues-paying members will have access to the full report; for more information on joining IBI as a member, please see: <http://www.biochar-international.org/join>. IBI will make a public announcement when this report is available on our website for download.

ACR Methodology for Emissions Reductions from Biochar Projects Listed As Inactive

In late March, the American Carbon Registry (ACR) listed the *Methodology for Emissions Reductions from Biochar Projects* as inactive. This action was taken after the anonymous peer review panel assembled by ACR concluded that there was insufficient scientific evidence to support the Test Method for Estimating Biochar Carbon Stability (BC₊₁₀₀)—a core component of the overall methodology. BC₊₁₀₀ uses the ratio of hydrogen to organic carbon—as measured using standard analytical techniques—to estimate the fraction of biochar carbon that will persist in soil for 100 years.

IBI believes this outcome reflects the relative novelty of biochar science. Whereas biochar researchers around the globe largely agree on methods to estimate biochar carbon persistence utilized in the ACR methodology i.e., BC₊₁₀₀, the larger scientific community remains unfamiliar with recent advances in the field.

The methodology had been proceeding through the ACR approval process for 3 years. Its rejection represents a considerable setback in efforts to enable biochar projects to access carbon trading markets. Future efforts to revive the methodology in the ACR process—or other carbon offset registries—should focus on bolstering the evidence for BC₊₁₀₀, or developing novel methods to accurately estimate biochar carbon persistence under field conditions.

IBI, along with methodology development partners The Climate Trust and The Prasino Group, thank our partners and all stakeholders who contributed towards improving the methodology along the way. For further information, please contact info@biochar-international.org.

May IBI Webinar Series Event: Dr. Maria Luz Cayuela presents: When Biochar meets Nitrogen: exploring their interactions in the soil-atmosphere interface

Have you wondered about the interaction between Nitrogen and biochar in soil? IBI welcomes Dr. Maria Luz Cayuela of the Spanish National Research Council (CSIC) to address this interesting topic for our May IBI Webinar Series event. Dr. Cayuela will discuss the Nitrogen (N) cycle and how it has been modified since the beginning of the use of mineral N fertilizers. She will give a general overview on past research related to biochar and its interaction with N in soil, and more specifically on N₂O emissions. She will also explain the different experiments that her group in Spain, in collaboration with other scientists, has performed recently, aiming to understand if biochar could represent a viable option to mitigate N₂O emissions in fertilized soils by unveiling the mechanisms behind this phenomenon.



[Registration is open now](#). The webinar will be held on Tuesday, May 12th at 16:00 GMT (which is 12:00 p.m. U.S. Eastern Time). Note: Please convert the 12:00 p.m.ET start time to your [local time by using this time converter tool](#). You must be a dues-paying member to participate in these special events. If you are not an IBI member and would like to join, [please click here](#).

For more information on this webinar program, including links to prior presentations by Dr. Steven McGreevy (Research Institute for Humanity and Nature, Kyoto, Japan), Dr. Johannes Lehmann (Cornell University, USA), Dr. Isabel Lima (US Department of Agriculture), Art Donnelly (Estufa Finca Project Director & Seachar), Dr. Andreas Hornung (Fraunhofer Institute for Environmental, Safety, and Energy Technology (UMSICHT) leader), Jonah Levine (Manager at Confluence Energy LLC), Doug Phillips/Dave

Warne/Anna Carrucan (Greening Australia), and Dr. Sai Bhaskar Reddy Nakka (Geoecology Energy Organisation (GEO)), please see: http://www.biochar-international.org/webinar_series.

Renewing IBI Business and Organization Members

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.

Dr. Rick Davies

Dr. Rick Davies is a Monitoring and Evaluation consultant, specializing in the evaluation of development aid programs in Africa and Asia. He is not directly engaged in biochar research, but is supportive of research into its potential uses for carbon sequestration, soil enhancement and carbon negative energy. For more information on his work, [visit his own personal website](#) and the [Monitoring and Evaluation NEWS website](#), which he manages.



Guangdong Dazhong Agricultural Science and Technology Co. Ltd

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 the most 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>.



Testing Feedstocks and TLUDs in Thailand—a Report

Jay White, a US Peace Corps Volunteer stationed in Chiang Mai Thailand, conducted a series of experiments on producing biochar from different feedstocks in Thailand in the spring of 2015. Working with the organizations SAO Soppoeng and Mae Lod Royal Project, and with funding assistance by Friends of Thailand, Mr. White recently published his findings in a report entitled [Promotion of Clean Emissions Charcoal Production and Use of Biochar](#).

The project organizers were interested in promoting the TLUD kiln technology and the use of biochar in the local community and agreed that before promoting these technologies, they needed to better understand the operation of the TLUD kiln and test pyrolysis of different locally available feedstocks. As the primary goal of this project was to promote continued use of biochar and the TLUD kiln among community members, the organizers knew that they need to test the kiln to ensure usability.

The project's design had three objectives to meet the goal of promoting the TLUD kiln and biochar use.

1. Build two TLUD kilns with counterparts in the SAO and Royal Project and test their use on five locally available feedstocks: hardwood waste from fruit trees, bamboo, corn cobs, rice husks, and rice straw.
2. Promote the TLUD kiln design and the production of biochar in two trainings, at the Sao and the Royal Project, open to the local public and select 10 participants from the most interested attendees.
3. Provide free TLUD kilns and personal training for the 10 participants in the use of their TLUD kiln and in the incorporation of resulting charcoal into organic soil amendments.

Biochar Briefs: News Roundup for April

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

Australia

[The No Till Farmers Association based in South Australia has found that crops](#) are showing a significant positive response when fields are amended with only 35 kilograms of biochar per hectare. Research and development manager Greg Butler said the supply of biochar has been limited because the Australian Federal Government's Emissions Reduction Fund has yet to approve biochar as a carbon mitigation method. Mr. Butler also noted that the industry is not producing enough biochar to sell it at a cost-effective price—it is now about \$1,000 a tonne, and his organization's economic modeling shows that most farmers could afford to use biochar in commercial cropping applications at a price of \$400 per tonne.

Germany

[Dr. Claudia Kammann of the Justus-Liebig University \(JLU\) shares her history](#) conducting research on biochar (she first heard about biochar in 2006). She notes that there are numerous benefits to biochar including carbon sequestration, as an addition to compost, and use in soils. To have the greatest environmental impact, biochar systems should be circular in concept—in that feedstocks are acquired at the site of production and then used in local systems. However, this has to be balanced with the economic reality of biochar production and use systems.

Ghana

[Smallholder farmers in the Northern Region are using biochar blends](#) made from rice husk, chicken droppings, and charcoal on their fields through an ongoing project of the Abokobi Society of Switzerland. The group is a local farming organization, who has been assisting farmers with sustainable farming practices.

United States

[Phoenix Energy with its joint venture, North Fork Community Power](#), was recently awarded a \$4.9 million grant by the California Energy Commission. The grant will be used to construct one of the first forest-sourced biomass gasification plants which will utilize local forest biomass sustainably sourced from restoration and fuel reduction activities on local forest lands, including the Sierra National Forest. The biomass will be used to make electricity, heat, and biochar. "This project is a fantastic community story and an example of what can be accomplished with a robust a public/private partnership," said Phoenix Energy CEO Gregory Stangl.

[California Lutheran University students have launched a campaign](#) to get the city of Thousand Oaks (California) residents to save water by using biochar. The city, Cal Lutheran, and community members provided the students \$3,000 to fund their "Take CHARge" campaign which promotes residential use of biochar. The students surveyed residents about their attitudes and habits around water use, and based on the responses, are developing key messaging on the reduced need for water with biochar/associated cost savings. They also created a slogan and logo as well as print, online, and video ads for local newspapers and movie theaters. Thousand Oaks has established itself as a leader among cities in the use of biochar, which it credits for cutting the Civic Arts Plaza water bill in half.

[Storm King Art Center in New York is presenting a large-scale outdoor installation](#) by Luke Stettner made with biochar. The artist filled large trenches with biochar and arranged the biochar trenches into a series of geometric patterns over an 80-square-foot expanse on Storm King's South Fields. The trenches range in length from one to 48 feet, and are visible from Storm King's Museum Hill. Stettner made the biochar for the installation at a small farm in Vermont.

Opportunities in Biochar

- Take advantage of a free subscription to Biomass Magazine. More information is available at: <http://www.biochar-international.org/node/5537>.
- Download the open access biochar book: *Biochar Culture*, by Dr Sai Bhaskar Reddy Nakka. The text highlights the use of biochar in communities and its potential for increased sustainable agriculture in smaller scale farmsteads and homes, focusing on work in India. The book can be accessed at: <http://www.biocharculture.com>.
- Job postings in biochar (as well as research/educational opportunities) can be accessed at: <http://www.biochar-international.org/network/jobs>.
- Looking for potential grant funding? Check out the Terra Viva Grants Directory which develops and manages information about grants for agriculture, energy, environment, and natural resources in the world's developing countries at: <http://www.terravivagrants.org/Home>.

Upcoming Calendar Events

- May 18 – 21: Japan Biomass Power Market. Location: Tokyo, Japan. For more information: <http://www.biochar-international.org/node/6647>
- May 28 – 29: Biochar – Contribution to Sustainable Agriculture. Location: Potsdam, Germany. For more information: <http://www.biochar-international.org/node/5510>
- June 1 – 4: 23rd European Biomass Conference and Exhibition. Location: Vienna, Austria. For more information: <http://www.biochar-international.org/node/5361>
- June 23: Compost and biochar safety, economy and EU law harmonization conference. Location: Brussels, Belgium. For more information: <http://www.biochar-international.org/node/6656>
- June 24 – 27: Biochar: a sustainable solution for agriculture and environment at BiocharEXPO 2015. Location: Milan, Italy. For more information: <http://www.biochar-international.org/node/5950>
- July 5 – 10: Soil interfaces for sustainable development (with colloquium on Biochar in Agriculture and Environment). Location: McGill University, Montreal, Quebec, Canada. For more information: <http://www.biochar-international.org/node/6250>

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 58 regional and national biochar groups, please see IBI's website (link to: <http://www.biochar-international.org/network/communities>). This month's report is from a new group—Biochar Lithuania.

Biochar Lithuania

The Department of Environmental Protection at Vilnius Gediminas Technical University has joined the COST Action work with biochar research. University researchers are conducting work on biochar focused on characterization, remediation of heavy metals in soils and from water, and biochar for carbon sequestration. The group is interested in the greater use of biochar in Lithuania due to the country's rich biomass resources for potential biochar production (forests cover 33.3% of the country). Biochar Lithuania will contribute more updates soon on specific research activities. For more information, please see: http://www.vgtu.lt/uploads/files/dir614/dir30/dir1/19_0.php or contact Edita Baltreinaite at baltreinaite@yahoo.com.

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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