October 2011 News from the International Biochar Initiative

27 October 2011

IBI Guidelines for Specifications of Biochars

On October 15, IBI posted for public review and comment the most recent draft IBI Guidelines for the Specifications of Biochars; IBI has posted and made available for public comment all previous drafts on our website. Formerly referred to as “Biochar Standards,” these guidelines were created by several different working groups of biochar experts who volunteered their time to draft and revise this document. The Guidelines are intended as voluntary, international guidelines that can be used by any local, national or regional body that wishes to adopt them as the basis for any regulatory or standards regime to advance the commercialization of biochar. Regardless of the use that any other entity may make of these guidelines, IBI will use them in an IBI Biochar Certification program, to be developed in 2012.

The comment period for the draft guidelines runs until November 15, and IBI encourages all interested parties to submit comments, corrections and suggestions for improving the document and the specifications to BiocharGuidelineIBI@gmail.com.

IBI held a series of webinars in the last half of October to acquaint reviewers with the document and answer questions. There is still time to join the final webinar that takes place on October 28, 2011 at 3:00 pm GMT. Click here to register for the webinar. The webinar presentation, FAQs and other background materials are all available online at http://www.biochar-international.org/characterizationstandard.

We would like to heartily thank the many people who have already submitted comments and suggestions to help improve the guidelines throughout their development, including during this current draft and comment period. Your input has helped us to consider new angles and to rethink some aspects of the guidelines and the specifications, as well as to improve the documentation of the decisions and the evolution of the guidelines during this process. The input we are receiving is a critically important part of the process of developing the guidelines in a manner that is global, inclusive, and transparent, and ensuring that they will be useful in building broad public acceptance of biochar as a well-understood material that is safe to apply to soil for agricultural purposes.

The next steps, after the comment period closes on November 15, will be to incorporate the suggestions and comments to produce a final draft document. IBI will submit the final document to IBI members in a balloting process to be undertaken during the month of December, 2011. Please make sure that you can participate in the balloting by ensuring that your IBI membership dues are up to date. If you have any questions about your membership, please contact Lourdes Haro at Lourdes@biochar-international.org.

Show your Support for Biochar by Joining IBI

IBI is a non-profit, member-supported organization with members around the world – and we depend on people like you. We appreciate the support of all our current members across a variety of membership categories, including: sustaining, business, professional and student.

There is a membership group specially designed for your needs, and your dues go directly toward accomplishing IBI's goals of continuing to bring biochar information to our full network, developing and advancing guidelines for specifications of biochars, increasing communication between the many biochar projects and groups around the world, and creating new opportunities for biochar research, project development, and ultimately, commercialization. If you are not a member, please join.

New IBI Business Members: Encendia™ Biochar and Sonnenerde

Encendia™ Biochar is a U.S.-based biochar development company located in New Haven, Connecticut. Its systems-based approach allows it to create prescriptive soil amendment products for farm and garden application, focusing on the crop and soil needs of its customers. Encendia plans to complement its work on biochar customization with a decentralized biochar development model that builds production capacity in locations that intersect feedstock availability and biochar end users. The company was founded at Yale University in the Fall of 2009. For more information on Encendia, or to order product, please visit www.encendia.com or contact the team directly at info@encendia.com.

Sonnenerde (or "sun-earth" in German) is an Austrian company which produces high quality soil from compost, selling about 20,000 tons annually. The company is looking to raise the carbon content of soils and is thus building a pyrolysis plant to use Terra Preta They are looking to convert 4000 tons of wet paper fiber sludge into up to 300 tons biochar per year. Starting in 2013, Sonnenerde will market this carbon-rich product in Austria. For more information please see: www.sonnenerde.at or contact Gerald Dunst at: g.dunst@sonnenerde.at.

A listing of all current IBI Business Members can be found on our website at: http://www.biochar-international.org/IBI-business-members. If your organization is interested in a business membership, please contact Kelpie Wilson at kelpie@biochar-international.org for more information.

Profile: Using Biochar to Improve Soil Health and Leaf Production at Tea Plantations in Sri Lanka

Sri Lanka has a long history of tea production—starting with one small plantation 250 years ago in the country then known as Ceylon. Sri Lanka is now considered a world leader in growing tea. Dilmah Tea incorporated in the 1950s with the intent to move away from larger scale tea processing to focus on tea picked and packed at origin. Even with onsite picking and packaging on smaller scale farms, tea monoculture can leave a large environmental footprint. To offset some of the negative impacts on the land due to tea plantations, Dilmah tea started a side organization called Dilmah Conservation. Dilmah Conservation works with the

International Union for Conservation of Nature (IUCN) as its main technical partner. The goal of Dilmah Conservation is “to assist in conserving the environment through interventions that at the same time serve humanitarian needs”.

Bio-Remediation through Biochar Use at Dilmah Tea Gardens

With the deteriorating soil conditions in many Sri Lankan tea plantations due to poor management practices, Dilmah Conservation believes that a Bio Remediation program will be a lifeline for the survival of the industry. This program is introducing techniques for tea plantations to reduce inputs (fertilizer and other chemicals) by at least 50% and increase the land productivity by at least 50%. The project was initiated by the IUCN Sri Lanka in 2008 in partnership with the Tea Research Institute of Sri Lanka (TRI). Subsequently, Dr. J.C. Krishnaratne of Dilmah Conservation has been leading this program to apply biochar at the Palmadulla field at Kahawatte and Nawalapitiya plantations—chosen for their different agronomic and climatic conditions. Dr. Krishnratne’s team produced a wood-chip biochar onsite with an updraft pyrolyzer made from steel drums.

To read the remainder of this story, please see:
http://www.biochar-international.org/profiles/Sri_Lanka

Photo: Increased shoot growth after biochar application, courtesy of Dilmah Tea

Profile: Greening Australia: Helping Restore Original Vegetation with Biochar and Bioenergy

In the last 200 years, crops and improved pastures have replaced much of the native Australian landscape. While this transformation has been good for the agricultural and pastoral industry, there is a growing realization that a productive landscape also needs to be a diverse landscape. Greening Australia is an environmental organization with state chapters across Australia working to strategically restore the natural vegetation of the country. To pursue this work, Greening Australia Victoria has partnered with the Victorian Department of Sustainability and Environment and the Alcoa Foundation to investigate the potential benefits of using biochar to help propagate currently difficult-to-germinate Australian native plant species. The project is setting up field and greenhouse trials with varying percentages of biochar and comparing those germination and growth results to smoke water treatments and standard practice growing media. The plant species consist of a number of regional eucalypt and acacia. Greening Australia hopes that the results generated from this investigation will lead to the ability to deliver much improved re-vegetation outcomes in the field. Two nurseries in Victoria have run parallel trials to monitor germination responses and ongoing seedling root development to determine if biochar is a beneficial additive.

To read the remainder of this story, please see:
http://www.biochar-international.org/profiles/Greening_Australia.

Photo: Biochar trial sites; courtesy of Greening Australia

Biochar Briefs - News Roundup for October 2011

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

Australia

Western Australian farmers gathered to hear speakers at a forum advise them on the potential for earning income from carbon farming, including biochar.

Small-scale island farmers are looking to create additional value from coconut by turning the shells into biochar, among other strategies to enhance their income.

Germany

Scientists at the Ruhr University in Germany are now exploring manufacturing processes and utilization possibilities of biochar made from green waste using a new patented process called Vapo-Thermal Carbonization (VTC).

A survey of innovative projects in Germany and Switzerland that are using pyrolysis to create "Terra Preta" while disposing of waste.

United Kingdom

An international group of scientists is proposing a new approach to the question of soil carbon to help answer the question: What will happen to soil carbon as the climate changes? Their roadmap is published in the October 6 issue of the journal Nature and it includes a discussion of biochar.

United States

Jason Aramburu and the team at *re:char* placed as First Runner Up in the 2011 ConocoPhillips Energy Prize, a joint initiative between ConocoPhillips and Penn State University. *re:char* will receive a total of $75,000 to develop their concept of mass producing recycled kilns that can produce up to 5 tons of biochar a year.

Steve Forbes, editor of Forbes Magazine, reviews the book *1491* by Charles Mann that describes the creation of Terra Preta soils by natives of the Amazon.

Students at the University of Washington have designed a new method to turn slash piles from forest thinning programs into biochar. The low-tech solution uses a thermal blanket to exclude oxygen from the piles and make biochar.

An article on "The Unreasonable Institute" a startup business incubator describes the struggles of biochar entrepreneur Moses Sanga, who is working on biochar in Uganda.

Plant scientist Dr. Debby Hanmer will head the new Sustainable Agriculture Program at the University of North Carolina. Hanmer's own research focus is on the production and use of biochar.

The Fannie and John Hertz Foundation located in Livermore, California awards $250,000 fellowships to about 15 innovative doctoral students each year. This year a team made up of several Hertz fellows won an award from the Bill & Melinda Gates Foundation for a plan to turn human waste into biochar in Africa.

Whispering Winds Bamboo Cooperative Corporation in Hawaii was awarded funds through a US Department of Agriculture Conservation Innovation Grant to convert bamboo timber waste into biochar using a farm-scale Adam retort kiln.

This editorial urges that job creation in the United States and elsewhere should focus on large scale public works programs that have carbon sequestration as a prime focus, mentioning biochar as one important method.

Recent Biochar Conferences in China, the EU, and Honduras

International Symposium on Biochar Research, Development and Application in Nanjing, China

More than 120 participants coming from universities, institutes and industries of China, the US, Australia, the UK, Denmark, Japan and New Zealand participated in a recent International Symposium on Biochar Research in Nanjing China October 10 – 12, 2011. Under the leadership of the Symposium chairman Jianmin Zhou, deputy chairman Renfang Shen, Yunhan Xiao, Jiqiang Zhang and Jiaman Jin, and under the financial support of the Natural Science Foundation of China, the State Key Laboratory of Soil and Sustainable Agriculture and the Blue Moon Fund USA, the International Symposium was a success. The Symposium was co-organized by the State Key Laboratory of Soil and Sustainable Agriculture, Jiangsu Biochar Engineering Center, the Institute of Soil Science and the Research Center of Clean Energy and Power and chaired by Symposium general secretary Zubin Xie.

Participants gave reports on biochar research, development and application in the areas of soil science, agronomy, energy science and biochar production techniques, and interacted actively with each other. Highlights were reports on the progress of biochar impacts on soil productivity enhancement, greenhouse gas emissions, soil carbon turnover, water pollution treatment, heavy metal remediation, organic pollutant degradation, and cleanup of non-point pollution. Participants repeatedly stressed the importance of land remediation for China, a country that is challenged to feed 20% of the world's people with only 7% of the world's arable land. The Symposium also discussed the IBI draft Guidelines for the Specifications of Biochars, following a presentation by IBI's Project Development Director, Kelpie Wilson. To read the remainder of this story, please see:
http://www.biochar-international.org/conferences/China_Symposium_2011

Photo: Graduate student Qi Liu explains a long-term biochar field experiment in rice-wheat rotation fields at the Jiangdu field station, Institute of Soil Science. Photo courtesy of Kelpie Wilson.

European Biochar Symposium 2011 Halle (Saale), Germany

By Dr. Bruno Glaser, Martin-Luther-Universität Halle-Wittenberg

More than 100 participants coming from universities, institutes and industries of Germany, Austria, Switzerland, The Netherlands, Belgium, France, Italy, UK, and Denmark, participated in a recent International Symposium on Biochar Research in Halle (Saale) Germany September 26 – 27, 2011. Under the leadership of the Symposium organizers Bruno Glaser, Daniela Busch and Katja Wiedner (Soil Biogeochemistry, Martin-Luther-University Halle-Wittenberg) and under the financial support of the German Ministry for Education and Research (BMBF) the International Symposium was a big success.

The main focus of the symposium was to bring forward basic biochar research. Ongoing commercial biochar production and implementation will benefit from continued work on key

biochar questions ranging from definition, standardization, toxicological effects, and biochar's physical, chemical and biological processes. New results from basic and applied research were presented and intensively discussed among participants. Highlights were reports on the progress of biochar impacts on soil productivity enhancement, greenhouse gas emissions, soil carbon turnover, water storage capacity and potential toxic effects. The detailed conference program and available presentations can be seen at the conference web site at: www.landw.uni-halle.de/biochar2011.

Photo: Dr. Glaser welcomes attendees; courtesy of Bruno Glaser.

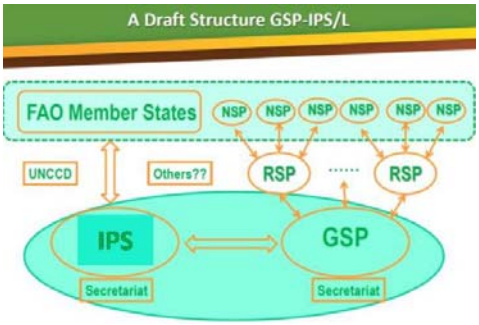
Micro-gasification Camp in Honduras Building Biochar Stoves
By Jorge Espinosa, Gaia University, Zamorano University

Zamorano University, also known as the Panamerican Agricultural School, was founded on the principle of applied knowledge and learning by doing. During the last week of September, 2011, Paul Anderson better known as Dr. TLUD, and Christa Roth took a diverse group of stove enthusiasts through a week long intensive biochar stove camp that lived up to Zamorano's traditional learn by doing standards. Christa Roth showed up a week early to hammer down the final touches on the Spanish translation of the GIZ-HERA Manual "Micro-gasification: Cooking with gas from solid biomass" as the camp was to be held entirely in Spanish. Due to the relative dearth of material available in Spanish, Roth and her team of translators took it upon themselves to coin a number of terms to equip the Spanish-speaking stove world with adequate terminology for their ongoing learning journey.

The stove camp was attended by representatives of El Salvador, Nicaragua, Costa Rica, Panama, Colombia and of course Honduras. Once the basic concepts of micro-gasification had been covered and some simple TLUDs were demonstrated, the group was divided into three smaller sections to work on projects that went well beyond the basics of micro-gasification, something that made this stove camp special. One team developed an institutional gasifier/biochar maker, another a T-Rocket merging the rocket stove with the TLUD, and the third design was the innovative TChar: a TLUD gasifier designed over a charcoal cooker to give people the option of saving the char for application to soil as biochar, or to continue cooking with the charcoal for greater versatility and near complete energy use. To read the full article, please see: http://www.biochar-international.org/Gasification_camp/Honduras.

Photo: A TLUD gasifier designed over a charcoal cooker gives people the option of saving the char for application to soil as biochar, or to continue cooking with the charcoal; courtesy of J. Espinosa.

The Launch of the Global Soil Partnership at FAO Headquarters, Rome, Italy, September 2011



By IBI Board Member Marta Camps Arbestain

A major meeting was organized last September by the Food and Agriculture Organization (FAO), in collaboration with the Joint Research Centre of the European Commission, to launch the Global Soil Partnership (GSP). The main objective of this meeting

was to discuss the terms of reference of the GSP with FAO member countries and key stakeholders to obtain reactions and recommendations on the way forward towards the establishment of this partnership. The meeting lasted three days and was attended by participants representing soil institutions from all over the world, as well as associations, project leaders, FAO permanent representative/country delegations, and civil society organizations.

Mr. Alexander Müller, Assistant Director General (ADG) of FAO Natural Resources Management and Environment Department acted as the secretary of the meeting. During the three-day meeting there was very active discussion among attendees and organizers. There was unanimous support for the GSP and for the urgent need for action (the fact that we have reached a "peak soil" was mentioned several times). To read the full article on this launch, please see: http://www.biochar-international.org/FAO_GSP_Report.

Graphic: A tentative draft structure of the GSP is presented below (where NSP = National Soil Partners; RSP = Regional Soil Partners); courtesy of the FAO.

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.

PhD Student Opportunity: Australian Agency CSIRO has a PhD scholarship opportunity in "Enhancing fertility in sandy soils using Biochar and Protected Diffusion Zones"; for more information, please see: http://www.csiro.au/partnerships/SAF-Postgrad-Scholarships.html.

PhD Student Opportunity: Japan Society for the Promotion of Science is looking for Ph D. students to work in Japan; for more information, please see: http://www.jsps.go.jp/english/e-fellow/postdoctoral.html#short

Submit abstract for conference: 2011 International Symposium on Biochar for Climate Change Mitigation and Soil and Environmental Management (South Korea). **Abstract deadline Oct 31**;
http://www.biochar-international.org/node/2838

Submit abstract for conference: The Biochar Symposium at the EuroSoil 2012 Conference (Bari, Italy): will be held July 2 – 6, 2012. **The abstract deadline has been extended to Oct. 30, 2011**. More information is available at:
http://www.biochar-international.org/node/2623.

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

Upcoming Calendar Events

November 1 – 3: Southeast Biomass Conference and Trade Show; Location Atlanta, GA, United States; more information: www.biomassconference.com/southeast.

November 7 – 9: 2011 Carbon Expo Australasia; Location Melbourne, Australia; more information: www.carbonexpo.com.au.

November 7: Illinois Biochar Group Fall Meeting; Location Urbana-Champaign, Illinois, United States; more information:
http://www.biochar-international.org/node/2794.

November 9 – 10: Nordic Biochar Seminar; Location Oslo, Norway; more information: http://www.biochar-international.org/node/2769

December 8 – 9: 2011 International Symposium on Biochar for Climate Change Mitigation and Soil and Environmental Management; Location Biochar Research Center (BRC) at Kangwon National University, Korea; more information: http://www.biochar-international.org/node/2837.

December 10 – 11: Hands on Biochar Workshop; Location Dunedin, New Zealand; more information: http://www.biochar-international.org/node/2796

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 regional and national biochar groups, please see IBI's website at: www.biochar-international.org/network/communities. This month features regional group updates from China Agricultural University (CAU) Biochar, the United States Biochar Initiative (USBI), the Seattle Biochar Working Group SeaChar (Seattle, US), and the Pioneer Valley Biochar Initiative (PVBI, US).

China Agricultural University (CAU) Biochar

CAU-Biochar is pleased to announce that the group will host the 4th IBI International Biochar Congress in Beijing China, September 16 - 20, 2012. The congress topic is: Biochar, the Road to Richer Food and Safer Environment. The main organizers of the Congress are the China Agricultural University (CAU), the Chinese Society of Soil Science (CSSS), the China Academy of Agricultural Science (CAAS), the China Academy of Forest Science (CAFS), and the China Biochar Network for Agricultural and Environmental Management (CBN). In addition to a full conference, the organizers are planning many cultural tours around Beijing. More details on the congress can be found at: www.ibi2012.org. IBI will be announcing important dates and submission deadlines as they occur.

United States Biochar Initiative (USBI)

The Sonoma Biochar Initiative (SBI), in partnership with the Sonoma Ecology Center, has been selected by USBI to host the 2012 US Biochar Conference in Sonoma County, California from July 29 to August 1, 2012. USBI director Gloria Flora notified the Sonoma organization of the Advisory Board selection. Sonoma was selected for its practical, enterprising focus on biochar opportunities, the abundance of agricultural partners in the region and the County's national standing as a leader in addressing climate change. For additional information on this announcement, please see:
http://www.biochar-international.org/node/2870

The Seattle Biochar Working Group (SeaChar), United States

After 9 months of hard work and perseverance by SeaChar and IBI, SeaChar has been awarded a $72,000 grant by the National Geographic's Great Energy Challenge. This money will broaden the work with the biochar producing Estufa Finca cook-stove project in Costa Rica. The grant will help SeaChar and local partners refine the hardware and develop a training and follow-up protocol, which will rely on an innovative biochar "buy-back" program to incentivize new stove users. Additionally, SeaChar's most important Costa Rican partner, the community association APORTES, was awarded a $10,000 contract by the International

Organization for Immigration (IOM) to build and install Estufa Finca cook-stoves in the households of migrant coffee bean pickers located in three different areas of the coffee growing highlands. SeaChar has matched the IOM contract with $10,000 to develop, test, and document marketing, training, follow-up, and monitoring protocols which can improve new technology acceptance. To read more about this work and SeaChar, please see: http://www.biochar-international.org/regional/seattle.
Photo courtesy of Art Donnelly.

The Pioneer Valley Biochar Initiative (PVBI), United States
PVBI member Ted Wysocki has arranged for biochar (charcoal from Canada blended with local manure) to be delivered to Massachusetts (MA) Congressman Olver. Congressman Olver has provided a personal grant to PVBI member Alan Page to set up forest trials with the product on a woodlot. Mr. Wysocki is also arranging for more shipments of biochar to be made available to local farmers in MA in order to carry out further field studies.

Through interaction with the University of Mass Center for Public Policy and Administration, PVBI has secured the services of a graduate student, Nataliya Kulyk, to help with a study of policy and economic aspects of biochar use. She has begun to carry out interviews with farmers, foresters, regulators, and politicians to explore understanding, and concerns about biochar use and to suggest ways of dealing with these. Additionally, conversations are underway with the University of Massachusetts Agricultural Center to continue the successful Spring 2011 Biochar Seminar Series into spring 2012. For more information, please see: http://pvbiochar.org/.

Recently Published Biochar Research

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

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Fabbri, Daniele, Torri Cristian, and Spokas Kurt A. (2011). Analytical pyrolysis of synthetic chars derived from biomass with potential agronomic application (biochar). Relationships with impacts on microbial carbon dioxide production. Journal of Analytical and Applied Pyrolysis. 10/2011.

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Taghizadeh-Toosi, Arezoo, Clough Tim J., Sherlock Robert R., and Condron Leo M. (2011). A wood based low-temperature biochar captures NH3-N generated from ruminant urine-N, retaining its bioavailability. Plant and Soil. 10/2011.