



## September 2011 News from the International Biochar Initiative

30 September 2011

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### **IBI Helps Two Biochar Projects Receive Funding through the National Geographic Great Energy Challenge**

IBI is thrilled to announce our assistance in gaining funding of over \$140,000 from world-renowned National Geographic for two biochar projects. IBI collected details on potential projects and then narrowed down the selection to best fit National Geographic's Great Energy Challenge. National Geographic opted to fund two projects: the Estufa Finca project in Costa Rica and the African Christians Organization Network (ACON) in Kenya. IBI helped the projects in Costa Rica and Kenya to articulate their ideas and write full proposals. National Geographic decided to fund both programs and each group has received a grant of \$72,000 to expand their respective biochar stove programs.

The Estufa Finca project will focus its funding from National Geographic to replicate successes with biochar gasifier stoves in the Santos region by holding trainings and stove building workshops in the Talamanca region of southeastern Costa Rica. The project will partner with a local organic cacao growers coop, and will train local women's organizations to build stoves from locally-sourced materials, market the stoves, and use the biochar produced by the stoves at the cacao farms.

In Kenya, ACON is already working with farmers and villagers to produce biochar as a soil amendment. With the funding from National Geographic, ACON is able to increase their project scope and develop more advanced biochar stoves that are better suited for local conditions and feedstocks. The stoves will be produced and sold locally; ACON will also perform outreach and further help farmers set up field trials to examine the impact of the biochar on their soils. The two projects will share results to learn what project components are universal and what are site- and culture-specific.

For more information on the National Geographic Great Energy Challenge, please see: <http://environment.nationalgeographic.com/environment/energy/great-energy-challenge>.

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### **Save the Date: IBI to Host Informational Webinars on Guidelines for Biochar Specifications**

IBI will hold informational webinars during the month of October for those who wish to contribute or continue contributing to IBI's ongoing, global, transparent process of establishing guidelines for biochar specifications (formerly referred to as "standards"). The webinars are provided free of charge and are open to the public, and are intended to educate and inform the public, stakeholders, and potential reviewers prior to the final public comment period before the guidelines are finalized. The webinars will also provide an opportunity for questions and answers and to clarify the guidelines and their development and intended uses. The final open public comment period for the guidelines will open on October 15, 2011 and run until

November 15, 2011.

The following four dates for the informational webinars were selected to allow as many people as possible across the globe to participate, and at least one of the webinars will be recorded and made available online in an archive. The informational webinar presentation schedule is as follows:

- October 12, 2011 at 3:00 pm GMT
- October 17, 2011 at 3:00 am GMT
- October 26, 2011 at 3:00 am GMT
- October 28, 2011 at 3:00 pm GMT

The IBI Guidelines for Biochar Specifications were formerly referred to as biochar “standards”, but received comments from many reviewers that the previous terminology was confusing and implied a regulatory or mandatory intent, when in fact IBI has developed these specification guidelines with the intention of providing voluntary, international guidelines for use and adaptation to any national or local regulatory and specification obligations or circumstances.

Next week (October 3rd week) IBI will circulate instructions for registration for the informational webinars, and the link to the final draft guideline document, which will be posted online. For further information, and to see earlier drafts of the guidelines, and follow the course of development of the guidelines, please go to <http://www.biochar-international.org/characterizationstandard>. IBI would like to thank all who have participated thus far and all who will take the time to review and comment on the document in the coming weeks.

At the close of the final comment period, and after all applicable changes to the guidelines are incorporated, IBI will host a balloting process to allow all *paying IBI members* to vote on adoption of the final guidelines. The dates and process for the balloting will be announced in the near future. [Click here to join or renew your membership.](#)

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## New IBI Business Member: Agri-Tech

Agri-Tech Producers, LLC is based in Columbia, SC, United States and manufactures commercial-grade torrefaction machines to produce both bio-coal as well as biochar. For more information on Agri-Tech, please see: <http://www.agri-techproducers.com>.

All 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](mailto:kelpie@biochar-international.org) for more information.

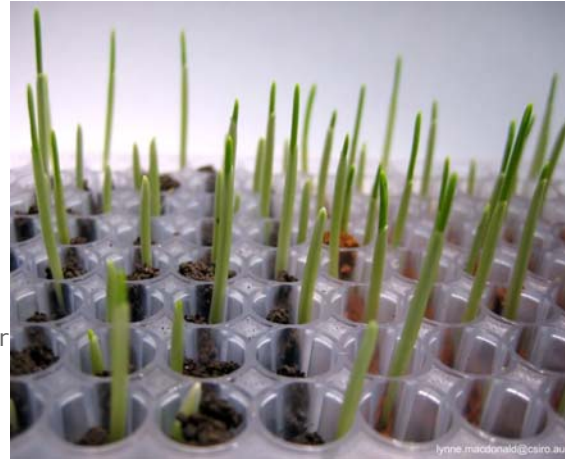
IBI continues to grow. We welcome new members. [Click here for more information.](#)

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## Profile: CSIRO Sustainable Agriculture Flagship: Leading Biochar Research Activities in Australia

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency and one of the largest and most diverse research agencies in the world. As part of CSIRO's National Flagship Program, under the Sustainable Agriculture Flagship (SAF), two national biochar research projects are being carried out by the biochar research team, led by Dr Evelyn Krull, and funded by the Australian Government through the Department of Agriculture, Fisheries and Forestry's Climate Change Research Program and the Grains Research & Development Corporation.

CSIRO's step into biochar research was initiated through a Visiting Fellowship granted to Dr. Johannes Lehmann, Cornell University, USA in 2007. The CSIRO group had been working on charcoal in soils for many years (which was a component of the research with Dr. Lehmann). The first international biochar conference, held in Terrigal Australia, corresponded with Dr. Lehmann's visit to CSIRO. That international conference, combined with the fact that Dr. Lehmann was in the process of editing and writing *Biochar for Environmental Management* with Dr. Stephen Joseph, enticed the CSIRO team to contribute a chapter to the book. These events and experiences highlighted the important role of biochar and motivated CSIRO to commission a biochar review in collaboration with biochar researchers Saran Sohi, Roland Bol and Eliza Lopez. This review was essential to start communicating with funding agencies and to document the importance of investment by the Australian government into biochar research.



Click here to read the remainder of this story:  
<http://www.biochar-international.org/profiles/CSIRO>

Photo: Close up of microplantation trial; courtesy of CSIRO

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## Biochar Project Registration: Help IBI Help You!

Are you starting a biochar production company? Are you a researcher looking for funding? Are you a teacher wanting to network with other schools doing biochar science projects? Are you a philanthropist or investor looking for interesting projects? The IBI Project Registry is for you!

IBI staff members get requests for information and help every day. Being in at the center of this information flow has allowed us to help a number of projects get connected to resources and partners, like the National Geographic funding opportunity. Help us connect your project to others by letting us know about your work and your needs. We invite you to fill out the IBI Biochar Project Registration form online:

<http://www.surveygizmo.com/s3/581013/IBI-Biochar-Project-Database>

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## New Document: *Poultry Litter Biochar - A US Perspective* has been posted on IBI's Website

*Poultry Litter Biochar: A US Perspective* is a new IBI publication that highlights potential benefits and challenges to utilizing poultry litter for biochar in the United States through examining characteristics specific to poultry litter biochar as well as alternative uses for poultry litter. This paper is found at: [http://www.biochar-international.org/sites/default/files/Poultry\\_litter\\_final.pdf](http://www.biochar-international.org/sites/default/files/Poultry_litter_final.pdf) or on the IBI Publications page at: <http://www.biochar-international.org/publications/IBI> under **Information Papers**.

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## Show your Support for Biochar: Become an IBI Member

IBI a non-profit, member-supported organization with members around the world. We appreciate the support from all our current members: sustaining, business, professional and student. Membership dues enable IBI to bring biochar information to our full network; develop and advance biochar specification guidelines; increase communication between the many biochar projects and groups around the world, and create new opportunities for biochar research, project development, and commercialization.

[Click here to join or renew your membership.](#)

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## Biochar Briefs - News Roundup for September 2011

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

### Australia

[The Biochar Project has won the United Nations Millennium Project Award](#) for the Australian Node 2011/2012 for its various projects including the Biochar Development group, Biochar Action Learning Circles, and Biochar Adult and Community Learning engagement.

### Canada

[Diacarbon Energy Inc. won two cash prizes](#) at the British Columbia Innovation Council's New Ventures Competition, the \$20,000 first prize and a second prize in the "Innovation" category worth \$10,000. The company wants to provide technology to convert waste biomass into biochar, bio-oil and syngas in small to medium-sized biorefineries.

[Lloyd Helferty of Biochar Ontario](#) is trying to encourage Japanese officials to use a biochar to speed up the growth of plants, such as fungus, to help absorb radioactive materials as part of decontamination following the Fukushima nuclear accident.

### Colombia

[A group of botanists and archeologists](#) from the Universidad Nacional de Colombia is working to understand terra preta soils found in Colombia and study ways to improve soils today using the ancient techniques.

### Germany

[Scientists at the Fraunhofer Institute](#) are now testing biochar on soils contaminated by coal mining, funded by a 2.5 million euro federal program.

### Scotland

[Nobel winner and former US Vice President Al Gore](#) was a guest speaker at the Scottish Low Carbon Investment conference in Edinburgh. Mr. Gore praised Scottish leadership in renewable energy and its support for leading biochar research taking place in Scotland.

### United States

[The USDA has awarded \\$136M for advanced biofuels development](#) to five different groups led by universities in different regions of the country. The funding received by Iowa State University will be used in part to evaluate the biochar co-product of biofuels production for its

use as soil amendment and for carbon sequestration.

In Hawaii, the [Aina Koa Pono company](#) has plans to use microwave technology to vaporize biomass for biodiesel production with a biochar co-product.

[Chicago Ideas Week \(CIW\)](#), in association with the Bluhm-Helfand Social Innovation Fellowship, has announced the 2011 Social Innovation Fellowship Winners, including Jason Aramburu of re:char, for his biochar project in Kenya.

[Re:char announces new Home Biochar Kits available for order](#). The kit will convert a 55 gallon drum into a kiln that will process yard waste into biochar.

[Eric Reynolds, founder of Inyenyeri, a social business venture](#), is working with World Stove to bring biochar stoves to Rwanda. Reynolds' vision is to see over 300 Inyenyeri stove manufacturing and distribution hubs across the country by 2020.

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## Recent Conference Reports from Japan, China, Italy, and the United States

### Asia Pacific Biochar Conference: Kyoto 2011

*By Debbie Reed, Executive Director, IBI*

Kyoto, Japan is lovely any time or year, but provided an especially warm, inviting, and historical backdrop for the recent Asia Pacific region biochar conference, hosted by the Japan Biochar Association (JBA). Held at the contemporary facilities of Ritsumeikan University's Suzaka Campus in Kyoto, the conference ran from the 15th of September through the 18th, culminating with joint sessions on biochar held concurrently with the Japanese Association of Human and Environmental Symbiosis (JAHES), followed by afternoon study tours to view biochar projects in the surrounding areas.



With over 100 participants from across the Asia Pacific region and globally, the conference captured the excitement and growth evident in the biochar field in general, and provided excellent updates in research, policy, project, and organizational activities across the biochar field.

Country reports from the Asia Pacific region were particularly exciting to hear, given the breadth of activities and depth of involvement from a diverse cross-section of individuals, organizations, universities, students, and others. To read the remainder of this story, including keynote summaries and country activity reports, see: [http://www.biochar-international.org/Conference/Asia\\_Pacific\\_Biochar\\_2011](http://www.biochar-international.org/Conference/Asia_Pacific_Biochar_2011).

Photo: A musician plays music at the opening ceremony on a Yamaha xylophone whose wooden bars have been replaced with melodic bars of biochar; courtesy of Debbie Reed.

### **Biochar and New Green Agriculture in China Workshop, Nanjing**

*by Genxing Pan*

The international workshop "Biochar and New Green Agriculture of China" was held in Nanjing September 20 – 23rd at the International Conference Hotel, Jiangsu Province. Organized by the International Biochar Initiative and the Nanjing Agricultural University, the workshop was co-sponsored by a number of key agricultural education and research institutes and biochar

production enterprises including Shenyang Agricultural University, Zhejiang Academy of Agricultural Sciences and Sanli New Energy Company. Dr David Crowley from the University of California, Riverside, and Dr Genxing Pan, from Nanjing Agricultural University lead the conference organization.

Eighty-eight participants attended the conference representing 14 Chinese universities, 17 research institutes including the Chinese Academy of Agricultural Sciences, and 8 biochar enterprises including Sanli New Energy and Shanghai Zhongke Anda Environmental Technology.

Advised by an international board headed by Dr Johannes Lehmann of Cornell University (and Chairman of the IBI Board), the workshop offered an open forum for exchange and discussion on biochar production technology and systems, biochar's role in mitigation of greenhouse gases in agriculture, soil enhancement, crop productivity and soil pollution remediation for green agriculture in China. The two-day workshop included a plenary session with seven keynote speakers (three IBI Board Members—Dr. Johannes Lehmann, Dr. Stephen Joseph and Dr. Saran Sohi were among the speakers), three voluntary sessions including 12 oral presentations and a poster session with 19 posters, mainly from China.

To read the remainder of this story, please see: [http://www.biochar-international.org/Conference/China\\_Green\\_Agriculture\\_2011](http://www.biochar-international.org/Conference/China_Green_Agriculture_2011).

### **"Fuoco Perfetto" and Trentino Stove Camp, 9th-10th September 2011**

*by Paola Rosà*

After several biochar stove workshops held earlier in the year, researchers, artisans, engineers and young academics from several Italian universities and other groups gathered in San Michele all'Adige close to Trento (Italy) on 9th and 10th of September. The event helped almost 25 Italian "stovers" to get in touch, exchange information and build a promising network of stove developers and enthusiasts. A number of biochar-making stoves were featured at the workshop. For more information and pictures, see the report at

[http://en.netlog.com/groups/nature\\_first/blog/blogid=4750398#blogbuona](http://en.netlog.com/groups/nature_first/blog/blogid=4750398#blogbuona).



Photo: A conference demonstration of a pellet stove burning gases at 537 degrees Celsius out of a couple of handfuls of pellets. The whole process lasted about 50 minutes; courtesy of mikiferrandino.

### **Biochar Sessions at the American Chemical Society (ACS) annual meeting in Denver, United States**

*By Carolyn Hoagland*

Twenty topics about Biochar production, quantitative analysis and applications were presented during the "Black Carbon and Biochar for Soil Fertility and Carbon Sequestration" session at the ACS meeting in Denver on Aug 29, 2011. These sessions were part of the division of the environmental chemistry meetings that examines how chemistry can be used to monitor, measure, and mediate environmental issues caused by humans and by natural causes.

The presentations about biochar quantification focused on the need to record data for all of the variables involved in its production (pyrolysis temperature, heating rate, particle size and feedstock) and tools and techniques for quantifying the resulting biochar products. Other presentations focused on regional approaches to understand the greenhouse gas (GHG) emissions of different types of gasifiers and pyrolysis systems. There were also several presentations about biochar and activated chars as a mediator of contaminants.

To read a full synopsis of presentations, please see: [http://www.biochar-international.org/Conference/ACS\\_2011](http://www.biochar-international.org/Conference/ACS_2011).

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## 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 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>

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## Upcoming Calendar Events

October 10 - 15: Biochar Research, Development and Application International Symposium; Location: Nanjing, China; more information: <http://www.biochar-international.org/node/2761>

October 11 – 13: Northeast Biomass Conference & Trade Show; Location Pittsburgh, PA, United States; more information: [www.biomassconference.com/northeast](http://www.biomassconference.com/northeast)

October 18 - 19: Washington Future Energy Conference; Location Seattle, WA, United States; more information: <http://www.futureenergyconference.com/cities/seattle/>

October 18 – 19: Restoring the West Conference; Utah State University, Logan, UT, United States; more information: <http://www.restoringthewest.org/>

October 24 – 26: Carbon in a Changing World; Location Rome, Italy; more information: <http://www.biochar-international.org/node/2748>

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

November 7 – 9: 2011 Carbon Expo Australasia; Location Melbourne, Australia; more information: [www.carbonexpo.com.au](http://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 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](mailto:info@biochar-international.org).

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## 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](http://www.biochar-international.org/network/communities). This month features new regional groups from the Philippines, South Korea, and Haiti and updates from the Illinois Biochar Group (United States) and the Sonoma Biochar Initiative (United States).

### **The Philippines Biochar Association (PBiA)**

The Philippine Biochar Association (PBiA) is working with a range of partners to introduce a carbon offset program in the Philippines using biochar. Working on this project are local government units (LGUs), local non-governmental organizations (NGOs), and people's organizations (POs). The vision is to create local biochar networks all over the country to convert rice hulls and rice straw (traditionally burned in the open) into biochar to improve soils at small farm plots while sequestering carbon. The program uses a "Carbon Negative Sticker" to allow donors to showcase their support for these small projects. For more information on this group, their projects, and the sticker program, please see: <http://philippinebiocharassociation.com>.

### **Biochar Research Center (BRC), South Korea at Knagwon National University**

The BRC is a newly formed regional group focusing on expanding shared knowledge and research on material exploration and manufacturing, environmental technology, energy technology, and climate change. For more information on the group and their research, please see: <http://www.biochar.co.kr>.

### **UBI: Haiti**

UB International (UBI) is a program dedicated to testing the concept that thinly distributed feedstock can be utilized to significantly contribute to global climate change mitigation through low tech biochar production in sustainable rural development. UBI Haiti is one such project and will test the UBI concept under the diverse ecological and social environment types present in Haiti. The initial pilot community will be at Carbon Roots International's Haiti CharBon Project site at La Coupe. For more information, please see: [http://www.biochar-international.org/regional/UBI\\_Haiti](http://www.biochar-international.org/regional/UBI_Haiti).

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

The Illinois Biochar Group (IBG) will hold its fall meeting from 10 am - noon on Nov. 7 at the Illinois Sustainable Technology Center in Champaign, Illinois. The meeting will include brief presentations by researchers on their work with biochar, stoves, sorption studies of PAHs, methane mitigation, and various field studies. The meeting is open to the public; IBG welcomes new members. Contact Nancy Holm, IBG Coordinator, with questions or for more information ([nholm@istc.illinois.edu](mailto:nholm@istc.illinois.edu) or 217-244-3330) or visit the website [www.biochar.illinois.edu](http://www.biochar.illinois.edu).

### **The Sonoma Biochar Initiative (SBI) (United States)**

The SBI has just unveiled a new website complete with a blog, resource postings and other important information on biochar in the Sonoma region of California. For more information, please see: <http://sonomabiocharinitiative.org>.

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## Recently Published Biochar Research

IBI tracks all published research on biochar and includes it in our online bibliography: [www.biochar-international.org/biblio](http://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](mailto:info@biochar-international.org).

Bushnaf, Khaled M., Puricelli Sara, Saponaro Sabrina, and Werner David (2011). Effect of biochar on the fate of volatile petroleum hydrocarbons in an aerobic sandy soil. *Journal of Contaminant Hydrology*.

Ching Wu, Shi, Lin Fenghsiu, and Yu Yang Jhe (2011). Modular Biochar Torrefaction System for Rural Taiwan. 2011 International Conference on Management and Service Science (MASS), 09/2011.

Hossain, Mustafa K., Strezov Vladimir, Chan Yin K., Ziolkowski Artur, and Nelson Peter F. (2011). Influence of pyrolysis temperature on production and nutrient properties of wastewater sludge biochar. *Journal of Environmental Management*. Volume 92, p.223-228.

Liu, Jingyu, Meng Jingjing, and Huang Shaopeng (2011). The development and prospect of biochar carbon sequestration based on agriculture and forestry resources in China. Second International Conference on Mechanic Automation and Control Engineering (MACE); Inner Mongolia, China.

Luo, Y., Durenkamp M., Nobili De M., Lin Q., and Brookes P. C. (2011). Short term soil priming effects and the mineralisation of biochar following its incorporation to soils of different pH. *Soil Biology and Biochemistry*. Volume 43, Number 11. p.2304-2314.

Mumme, J.; Eckervogt, L.; Pielert, J.; Diakité, M.; Rupp, F.; Kern, J. (2011): Hydrothermal carbonization of anaerobically digested maize silage. *Bioresource Technology* 102, 9255 - 9260.

Ungera, Rachel, and Killorna Randy (2011). Effect of Three Different Qualities of Biochar on Selected Soil Properties. *Communications in Soil Science and Plant Analysis*. Volume 42, Number 18, p.2274-2283.

XY, Yu, CL Mu, C Gu, C Liu, and XJ Liu (2011). Impact of woodchip biochar amendment on the sorption and dissipation of pesticide acetamiprid in agricultural soils. *Chemosphere*. 08/2011.

Xiao, Xiaoyu, Sheng Daniel G., and Qiu Yuping (2011). Improved understanding of tributyltin sorption on natural and biochar-amended sediments. *Environmental Toxicology and Chemistry*. 09/2011.

Zhang, Afeng, Liu Yuming, Pan Genxing, Hussain Qaiser, Li Lianqing, Zheng Jinwei, and Zhang Xuhui (2011). Effect of biochar amendment on maize yield and greenhouse gas emissions from a soil organic carbon poor calcareous loamy soil from Central China Plain. *Plant and Soil*.