Highlights from this Month’s News

In this month’s edition, look for news, ideas and trends like these:

- Rocky Mountain highlights (from Fort Collins)
- On the road in New Zealand
- Potting substrates that beat peat

Welcome to Our Renewing Corporate Member:

**PYREG** is a plant builder and solution provider for environmentally friendly carbon technology systems. We are the market leader in the field of carbonisation of biomass to biochar or sewage sludge to phosphorus fertilizer. Furthermore, the PYREG technology can produce high quality activated carbon and fodder coal from different regional biomass. Closed-loop recycling systems contribute to the reduction of CO\(_2\) emissions (improved CO\(_2\) footprint) through sustainable technology.

The carbonization of the sewage sludge also solves a global disposal problem in a cost-efficient manner while at the same time recovering valuable phosphorus as a fertilizer substrate. More than 25 PYREG systems are already in operation worldwide.

Long-standing IBI member, **Carbon Gold** also has an update:

Biochar’s role in achieving the UK’s goal of carbon neutrality by 2050 is recognised as critical by the Royal Society and The Royal Academy of Engineering, and the UN’s Intergovernmental Panel on Climate Change have described biochar as an important Negative Emissions Technology.

Simon Manley, CEO of Carbon Gold, says, “Carbon Gold is a first mover in this market; we’ve proven the concept in key sales channels and we are now ready to expand into this exciting opportunity. Sustainable agriculture and climate change have never been more front and centre in the news agenda and, with so many chemical pesticides, fungicides and stimulants being removed from the market in horticulture and sports turf, an established, well-known brand with a proven organic...
alternative presents a fantastic opportunity for a potential partner.” (See below under Opportunities if interested in a strategic partnership).

Carbon Gold’s products are enriched with fungi, beneficial bacteria and trace minerals. Treated plants have been shown to have increased tolerance to pests and diseases including ash dieback, honey fungus, horse chestnut leaf miner in trees, fusarium in turf and root mat in tomatoes, and environmental pressures including drought and transplant shock in third-party controlled trials.

The company’s products are approved as organic in the UK and other European markets. They are FSC certified and approved for use in biodynamic systems by Demeter and the UK’s Biodynamic Association. This year Carbon Gold’s Soil Improver received B-Exemption for use in Dutch Horticulture from the RHP.
Biochar & Bioenergy 2019, jointly organized by USBI and the Bioenergy Alliance of the Northern Rockies (BANR) was held in Fort Collins, CO at Colorado State University. Booth space and on-campus lodging sold out for the packed conference, which included tracks focused on Production, Environmental Remediation, Agriculture, Forestry, and Sustainability.


Booths for USBI, U.S. Forest Service, and Terra Char. Other exhibitors included: Cool Planet, ROI, Pyroli; Nebraska Forest Service, Oregon Biochar Solutions, Biogreen, Torresak, Biomass Controls, Agrinova, All Power Labs, Pacific Biochar, Symsoil; Great Plains Biochar, ARTi, Biochar Solutions, and Miller Soils.

Thanks to effective organizing by the team of Jim Ippolito, John Field, and Amy Swan, as well as Kim Chaffee’s recruitment of sponsors, the three days in Fort Collins were well spent.

Dr. Daniel C.W. Tsang spellbound the audience with a keynote speech on functionalized biochar.
A small British Columbian biochar company is looking to process 25 tonnes of wood per hour, having already successively scaled up from bench-top production to a current capacity of 1 tonne/hr. A full-scale plant will eventually include sewage sludge pyrolysis.

As grape growers seek to restore degraded land in California’s wine country, some have been introducing biochar into new or existing vineyards. We hope their newly resilient terroir will help the wine keep flowing from this historically productive region.

Cool Planet is embarking on a trial of their Cool Terra Organic biochar soil amendment to see how it performs on hemp fields in Maine.

Africa

Would you like to back a revolution? Alice LeBlanc cannot continue the African Soil Initiative without some financial help. With the incorporation of biochar into several forms of agriculture, a Third Green Revolution is possible in Africa. Contact Alice if you would like to contribute or help with fundraising.

Southern Asia

A biochar producer in Malaysia has entered into a 5-year agreement with a waste management company to cooperate in expanding biochar production.

Australia and the Pacific


A South African company has been pelletizing seeds with a biochar coating and shooting them from drones to plant trees. By swarming up to 32 drones at once, they hope to plant as many as 16,000 seeds per day. Since Australia allows swarming of drones, the company plans to set up shop there. Airseed Technologies will conduct a demonstration on day 3 of the October ANZ Biochar Conference.

The full programme for the 2019 ANZ Biochar Conference (see Calendar) is now available.

ANZBI First Public Officer Don Coyne took a biochar tour of New Zealand and published an educational and encouraging report full of names, places, and photographs.

IBI Webinar: Stormwater Management – August 9 @ 1 pm ET

Chuck Hegberg of Infinite Solutions, L3C, Hanover, PA and Dr. Marc Teixido, from UC Berkeley will teach on Green Infrastructure (GI) and Stormwater Capture, treatment, and groundwater recharge (CTR). Mr. Hegberg will discuss opportunities and benefits of integrating biochar into GI practices along with project examples. Dr. Teixido will describe novel pilot-scale unit-process column CTR systems amended with biochar and manganese oxides for passive attenuation of trace organic contaminants and
metals from stormwater. Past and ongoing pilot studies are located across California, from Sonoma to Los Angeles, and being supported by multiple local partners.

Registration includes access to the slides and a recording of the webinar.

**IBI Members** register by first logging into your membership accounts [here](http://biochar-international.org), then proceed to the [Webinar Announcement](http://biochar-international.org). Your event link will be emailed to you after successful confirmation about your membership status. **Non-IBI members** can register [here](http://biochar-international.org).

### News of the Initiative

IBI is forming a volunteer committee charged with helping regular followers to choose to become paid IBI members with all the attendant benefits. Currently, we have 416 members, but the potential for many thousands more who may lack only a personal invitation. If you would like to participate on this committee, please drop us a line at [info@biochar-international.org](mailto:info@biochar-international.org).

We have issued a new form (appended to this newsletter) to give interested parties the opportunity to benefit from working closely with IBI to publicize work they do in line with our mission.

### Biochar-related opportunities, jobs, and education

The Canadian government is seeking to identify and develop bio-based (at least 60% derived from Canadian forest residue) [foam insulation materials](http://biochar-international.org) for buildings. Grants of up to $1 M CAD are available to Canadian small businesses. Cost of proposed products must not exceed 120% of the cost of currently available petroleum-based versions. **Closing date:** August 27, 2019, 14:00 Eastern Daylight Time.

Kungliga Tekniska högskolan in Stockholm, Sweden is [accepting applications for a PhD candidate](http://biochar-international.org) to conduct research on upcycling of sewage sludge and other biomass using pyrolysis to produce activated carbon for removal of phosphorus and other impurities from water. Applications due by 12 August.

**Park City, Utah** has a project, “Evaluating the Effectiveness of Biochar for Carbon Sequestration, Soil Productivity, Water Retention, and Wildfire Risk Reduction,” that requires pro-bono support from a scientist with a background in organic chemistry, environmental engineering, soil science, and/or forestry. To alleviate administrative overload, correspondence with USBI’s [Ronal Larson](http://biochar-international.org) or [Tom Miles](http://biochar-international.org) is recommended prior to completing the application.

The international workshop **“Innovative Forest-Based Bioeconomy for the Future”** provides a platform for all initiatives engaged in the forest-based bioeconomies of Europe and South/Central America. The workshop will be held in Buenos Aires, Argentina on Oct 8th and 9th. European and Central/South American Ministries, funding agencies, and initiatives
interested in a joint funding of R&D projects in the field of forestry and sustainable use of wood are invited.

**Carbon Gold**, world leader in carbon-rich soil amendments, is seeking investment from a strategic partner to accelerate growth in new and existing markets. The company is seeking a partner who can offer the resources and efficiencies to scale up operations and maximise potential in this fast growth market. Simon Manley, CEO of Carbon Gold, says: “The market for carbon-rich soil amendments is at a tipping point. We have a proven product range in markets that offer significant scale and regulatory drivers are furthering demand. We are now seeking a strategic partner that shares our mission to support sustainable agriculture and combat climate change.”
StormCon 2019
August 18–22, 2019 Atlanta, GA. Network with stormwater and surface water quality professionals from all over the world.

Bio-Char II: Production, Characterization and Applications
September 15-20, 2019 Cetraro (Calabria), Italy.
http://www.engconf.org/conferences/energy-technology/bio-char-ii-production-characterization-and-applications/#header0

IBI Biochar World Congress 2019
Developing the Global Market
November 10 - 14, 2019, Seoul, Korea. Sharing knowledge on all aspects of biochar among a broad international scientific community, policy makers and industrial personnel.
http://biocharworldcongress.com/
Abstracts due: 15 August 2019

Bois Energie

AGU Fall Meeting
https://www2.agu.org/en/Fall-Meeting
Abstracts due: 31 July 2019

Compost 2020
January 28 -31, 2020 Charleston, SC. US Composting Council conference will include a panel and presentations on the synergies of biochar and compost.
https://compostconference.com/

Third ANZ Biochar Conference
October 20-26, 2019 Green Triangle Region & Melbourne Metro, Australia. In conjunction with the first ANZBi Study Tour. Conference theme is “Mainstreaming Biochar.”
https://anzbc.org.au/
An IBI Biochar Study Tour, co-sponsored by the Ithaka Institute, is scheduled for 4 - 6 September in Tampere, Finland. Topics to be included are biochar production, carbon sink trading, district heating, biochar-based materials, circular economies, and more! The first day will be conducted in Helsinki with presentations on carbon sink trading. Participants will travel by bus to Tampere for days 2 and 3 to see and hear about the many ongoing projects and gain insight on various urban uses of biochar. For more details and registration*, see the IBI webpage at: https://biochar-international.org/event/ibi-biochar-study-tour-finland/. More details will be announced over the next few months.

*Registration closes August 29th!

New Research

Here are just a few of the papers recently published regarding biochar. These are selected by IBI staff from the 230+ articles included in the latest monthly list available on your IBI Member homepage. The list contains highlights and selected quotes from abstracts to make it easy for you to find articles of interest. You can automatically receive the full research paper list by e-mail every month - just join IBI!

- **Sedimentary Block:**

  **Highlights:** “Dredged sediment could be recycled into value-added construction products. Particle size distribution of sediments determined strength of sediment products. Biochar incorporation had a beneficial effect on cement hydration reaction. Yet biochar addition may incur micro-crack and reduce mechanical strength. Biochar immobilized contaminants and promoted environmental acceptability.”
Sustainable Substrates:

From the Abstract: “In the present review, we summarize a clearer and practical approach for substituting different materials especially biochar to fulfill the need of modern potting substrate industry. Biochar has the potential to sustain the substrate production on a long-term basis.”

Don’t Overthink It:

From the Abstract: “The [random forest] model showed better accuracy and predictive performance for adsorption efficiency ($R^2 = 0.973$) than [artificial neural network] model ($R^2 = 0.948$). The biochar characteristics were most significant for adsorption efficiency, in which the contribution of cation exchange capacity (CEC) and pH$_{H2O}$ of biochars accounted for 66% in the biochar characteristics. However, surface area of the biochars provided only 2% of adsorption efficiency.

No Fouling Out:

From the Abstract: “Without chemical cleaning of membrane, the flux was fully recovered at a dose of 10 g/L BC or 0.3 g/L of PAC.”

Topping up Tomatoes:

From the Abstract: “Average fruit weight (66.12 g), fruit yield (38.85 t/ha), fruit dry matter (5.22 t/ha) and haulm dry matter (3.19 t/ha) was recorded highest in the treatment ... 100% RDF + B @ 4 t/ha + VC @ 2.5 t/ha which were significantly higher over all other treatments indicating that the application of biochar @ 4 t/ha in combination with vermicompost @ 2.5 t/ha and 100% RDF was most effective in increasing tomato yield in acid soil than sole application of biochar or biochar in combination with recommended doses of chemical fertilizers.”

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Work with IBI!

IBI offers the following options for collaboration with scientific projects. Select the package best for your organization and complete the accompanying payment form.

☐ Silver Package 1

a) IBI is posting a project description on its website with contact details, links, photos; the website can be updated once per year.
b) IBI is sending out a project update in the monthly newsletter twice per year of the project
c) Publications published by the project are guaranteed to be listed in the monthly IBI publications update.
d) In-depth discussion of one publication per year by a member of the IBI Scientific Committee, sent out in the monthly IBI publication update and posted on the project site of IBI.

Costs: $1,000 per project year, payable at the beginning of the project year

☐ Gold Package 2

a) Includes all services of Package 1.
b) Webinar on project plans, progress or outcomes with a topic appropriate for IBI audience (one-hour webinar with about 50-100 participants worldwide), moderated by IBI, advertised globally, with Q&A session). Webinar is archived on the IBI website and can be seen by IBI members (add $1,000 for open access).

Costs: $4,000 per project year, payable at the beginning of the project year

☐ Platinum Package 3

a) Includes all services of Packages 1 and 2.
b) IBI excursion to your project at a time when it is attractive to a diverse audience ranging from scientists to industry representatives and policy makers, typically 40 attendees, who will pay for their own travel and a registration fee (see https://biochar-international.org/study-tour-austria/ for an example of previous excursions).

Costs: $15,000 per project year, payable at the beginning of the project year

Packages can vary for each project year (i.e., a project may opt for Package 1 in year 1 and 2 of their project and for Package 2 in year 3). Please inquire for additional options and combination of services not mentioned above.

IBI will provide a letter of commitment that can be included in your proposal to a donor. If the proposal is approved and funded, IBI can work with purchase orders or contracts, as is easiest for the project.
PLEASE PROVIDE YOUR NAME AND CURRENT BILLING ADDRESS:

Collaboration Options (Prices in U.S. Dollars)

☐ Platinum: $15,000
☐ Gold: $4,000
☐ Optional open webinar access (+$1,000)
☐ Silver: $1,000

Total amount enclosed: $_____

☐ check in U.S. dollars  ☐ cash in U.S. dollars  ☐ MC/Visa number:_____________________________________

Exp. Date: ________  3-Digit Security Code: _________  Name on Card: ________________________________

Email receipt to: __________________________________ / Phone #: ___________________________

Please enclose check or cash or provide credit card information, and send to the IBI Office:
by email (bschorr@ttcorp.com), fax (1-202-223-5537), or U.S. mail
(1211 Connecticut Avenue, NW, Suite 650, Washington, DC 20036, USA).

Thank you for your support!