FINAL MEETING EU-COST ACTION „BIOCHAR" & 76. SYMPOSIUM DES ANS e.V.

„UNDERSTANDING BIOCHAR MECHANISMS FOR PRACTICAL IMPLEMENTATION"

28TH - 30TH SEPTEMBER 2015
HOCHSCHULE GEISENHEIM UNIVERSITY

Under the patronage of
Federal Environment Minister Dr. Barbara Hendricks
unter der Schirmherrschaft von
Bundesumweltministerin Dr. Barbara Hendricks

Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit

cost EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Hochschule Geisenheim University

ANS Arbeitskreis zur Nutzung von Sekundärrohstoffen und für Klimaschutz e.V.

HAWK

Technische Universität Braunschweig

B. Glaser · C. Kammann · A. Loewen (Hrsg.)

„UNDERSTANDING BIOCHAR MECHANISMS FOR PRACTICAL IMPLEMENTATION"

Veranstalter:

- Arbeitskreis zur Nutzung von Sekundärrohstoffen und für Klimaschutz e.V. (ANS)
- COST Action TD1107 "Biochar for Sustainable Environmental Management"
- Hochschule Geisenheim University

verlegt durch ANS e.V. 2015
ISBN 978-3-92-4618-47-6

Development of EU/MS/REACH mandatory permits and policy support towards improved European regulations and law harmonization for biochar industrial production, safe products and placing on the market.

Edward Someus

Terra Humana Ltd., BIOFARM AGRI CENTER
e-mail: biochar@3Ragrocarbon.com web: http://www.refertil.info

Abstract

During three decades the Terra Group has pursued the field of biochar science with the specific aim of converting results towards the technology readiness level TRL9, which implies a proven operational production system enabeling market competitive biochar products and applications. In this respect, a number of large-scale EU biochar research projects have since 2002 successfully combined science, industrial engineering and market competitive biochar product developments. Both plant-based biochar and Animal Bone bioChar (ABC) systems and products have been developed and tested. However, our main focus and specialization is on the ABC systems with phosphorus recovery towards economical industrial scale. This requires a high technological level beyond plant-based standard biochar processing and application. The most recent project is the REFERTIL for conversion of biochar applied science into economical industrial practice and EU biochar policy support according to revision of the EC 2003/2003 Fertilizer Regulation, for which a comprehensive biochar law harmonization proposal has been reported to the Commission. The objective driven goal of this SME farmer targeted project is to reduce mineral fertilisers and chemicals use in agriculture by recycling treated organic waste as biochar and compost products, with particular attention to the low carbon economy and recovery of nutrients. Hence, this objective contributes to decrease the EU dependence on phosphorous and nitrogen fertilizer import by substitution, recycling and added value reuse of organics, nutrients and energy from the large volumes of organic waste generated in the EU28. The REFERTIL project also aims to ensure that the applied biochar quality and safety criteria are consistent with the mandatory EU-wide Directives and EU/MS regulations. So far,

the Terra Group has completed and qualified an original and proprietary IPR protected "3R" zero emission biochar technology at TRL8 and prepared a TRL9 implementation at economical 20,000 t/y throughput capacity. The approved first EU biochar mandatory authority permit for Terra biochar products (worked out between 2005-2009) has been CLP upgraded in 2015; applications at 12 Authorities have been filed for comprehensive industrial authority TRL9 industrial replication model installation permits; REACH registration above 1000 t/y capacity has been prepared; and biochar product market uptake is organized. As the biochar market is rapidly developing a continued focus in on economical sustainable technologies including product optimization in relation to safety, environmental improvement and climate protection. In this context there is no one fit for all biochar solution. In the continued endeavor towards successfully recycling treated organic waste as biochar, stakeholders from science to industrialization are welcome for long-termed cooperation targeting, e.g., mandatory biochar EU/MS Authority permitting and joint REACH registration.

REFERTIL project summary

Edward Someus

Terra Humana Ltd., BIOFARM AGRI CENTER
e-mail: biochar@3Ragrocarbon.com web: http://www.refertil.info

Abstract

The objective driven goal of the 4 years SME targeted REFERTIL project (October 1, 2011 – September 30, 2015) is to improve the currently used compost and biochar treatment systems, towards advanced, efficient and comprehensive bio-waste treatment and nutrient recovery process with zero emission performance. The REFERTIL core work science and technology elements are to provide comprehensive EU policy support related to mandatory biochar regulations, EU/MS law harmonization (most importantly EC2003/2003 Fertilizer Regulation revision), REACH registrations and develop mandatory permits for biochar manufacturing, safe product specifcation and placing on the market. The REFERTIL project mandate is to make clear order and transparency of the biochar case for all the elements and preparing an true value agri application oriented, legal and market competitive structure for producers and users. The improved output products are safe, economical, ecological and standardized compost and bio-char combined natural fertilizers and soil amendment agricultural products used by farmers. The added value and energy efficient transformation of urban organic waste, farm organic residues and food industrial by-product streams made by improved carbonization, biotechnological formulation and upgraded composting technologies, with particular attention to the recovery of nutrients, such as phosphorous and nitrogen. The targeted high quality output products aiming to reduce mineral fertilizers and intensive chemicals use in agriculture; enhancing the environmental, ecological and economical sustainability of food crop production; reducing the negative footprint of the cities and overall contributing to climate change mitigation. In this context the improved bio-waste treatment process opens new technical, economical, environmental and social improvement opportunities, while improving the use, effectiveness and safety of the resulting compost and bio-char products in agriculture. The output products developed in a standardized way to meet all industrial, agricultural and environmental norms

and stands in European dimension. Proactive and coherently integrated cooperation made between multi level stakeholder in Europe, with result oriented potential benefit to SMEs and farmers for more efficient utilization of the final products by the end-users.

Refertil biochar analytical accreditation

Edward Someus, Dr. Zoltan Palotai, Dr. Zsolt Hantosi, Gabor Bordos

Terra Humana Ltd., BIOFARM AGRI CENTER – Wessling Hungary Ltd.
e-mail: biochar@3Ragrocarbon.com
web: http://www.refertil.info , https://hu.wessling-group.com/en/

Abstract

Biochar is new product; therefore material specific consideration is needed for all analytical items to determine product quality-safety-performance with internationally accredited methods and standards. The REFERTIL partner "The Environmental Testing Laboratory of WESSLING" is the first laboratory in Europe who obtained accredited status, under Wessling-NAT-1-1398/2012(2014.10.08), for comprehensive analyses of biochar samples. The accreditation has been developed for the both types of biochar ("PBC" Plant Based Biochar and "ABC" Animal Bone bioChar) for organic Phosphorus fertiliser, soil improver and growing media applications. Accreditation of the biochar analytical activities is an important step to obtain mandatory EU/MS Authority permits and support the mandatory EU standardization and law harmonization process for biochar industrial manufacturing, determination of safe product performance/labelling, applications, placing on the market and legal conditions, including producers extended responsibility and product liability.

Bundesministerium
für Umwelt, Naturschutz,
Bau und Reaktorsicherheit

cost
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

Hochschule
Geisenheim
University

ANS
Arbeitskreis zur Nutzung von
Sekundärrohstoffen und für Klimaschutz e.V.

HAWK

Technische
Universität
Braunschweig

Herausgeber

Prof. Dr. Bruno Glaser
Institut für Agrar- und Ernährungswissenschaften
Bodenbiogeochemie
Martin-Luther-Universität Halle-Wittenberg

Prof. Dr. Claudia Kammann
Fachausschussleiterin Biokohle des ANS e.V.
Klimafolgenforschung-Klimawandel in Spezialkulturen
Hochschule Geisenheim University

Prof. Dr.-Ing. Achim Loewen
Vorstandsvorsitzender des ANS e.V.
Leiter des Fachgebiets Nachhaltige Energie- und
Umwelttechnik NEUtec | HAWK Hochschule für Angewandte
Wissenschaft und Kunst Hildesheim / Holzminden / Göttingen

Arbeitskreis zur Nutzung von
Sekundärrohstoffen und für Klimaschutz e.V.

ISBN 978-3-924618-47-6