The Biochar Summit 2023

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The Biochar Summit 2023 was held in Helsingborg in Sweden on the 12th-15th of June 2023, uniting industry, municipalities, and researchers to discuss the topic of biochar. Over 400 attendees from 25 different countries were gathered, following a packed program throughout the two days. After finishing my master's thesis on the sorption potential of sludge biochar for the removal of pharmaceuticals from water, I was excited to expand my knowledge of production, characterization, and the many different applications of biochar.

Biochar is a carbon-rich material, produced through pyrolysis, a thermal-chemical treatment of organic waste. It has a porous structure, and large surface area, and can therefore be used as an adsorbent for water pollutants among others, offering a sustainable, efficient, cost-effective, and environmentally friendly solution for water contamination issues. It can be derived from a variety of sources, including sewage sludge, reducing the cost and contamination of sludge disposal.

The conference opened with the welcome by the Major of Helsingborg and the organizers of the Summit, European Biochar Industry, and Nordic Biochar Network, setting the tone with the keywords sustainability, innovation, collaboration, and carbon dioxide removal (CDR). Throughout the conference there were sessions with many different speakers, presenting their research on biochar, or challenging the industry and municipalities to work towards not only carbon neutrality but carbon negativity.

During the conference, the topic that interested me the most was sewage sludge-derived biochar for the decomposition of organic contaminants, immobilization of heavy metals, and the adsorption of toxic compounds. Gerard Cornelissen from NGI and NMBU talked about PFAS, the "forever chemical", a persistent, present, mobile, and toxic compound which is a big threat to our world and our drinking water. However, sewage sludge biochar can be valorized as an effective PFAS sorbent. In the master research of Katinka Krahn and Clara Mader Lade, they found that sludge biochar removes PFAS better than commercial activated carbon and wood-based biochar, due to high surface area and optimal pore size.

Another interesting topic was presented by Helmut Gerber from PYREG, talking about regulations regarding biochar and sewage sludge biochar as a fertilizer with carbon-negative potential. Phosphorus, an essential nutrient and critical resource for food production can be recovered in sewage sludge biochar, and work as a significant soil fertilizer. He also mentioned that carbon is geologically stable, cost-effective, and a scalable CDR method.

Between the sessions, there were coffee and lunch breaks where networking was happening. It was exciting to hear from other people working on the same topic with the same goal of promoting biochar. At the end of the first day, a gala dinner was held, with a 3-course meal and great entertainment from a live band. The conference was held at a seapoint hotel, and I was lucky to catch the sunset during the evening.

A huge thanks to Norsk Vannforening for funding my attendance at this conference. I had such a great time, learning from extremely skilled scientists and it was amazing to meet so many interesting people who all work towards a more sustainable future.

Website for the conference https://www.biochar-summit.eu/