

Programme

# Circular Bioeconomy Days

- new protein sources for Europe

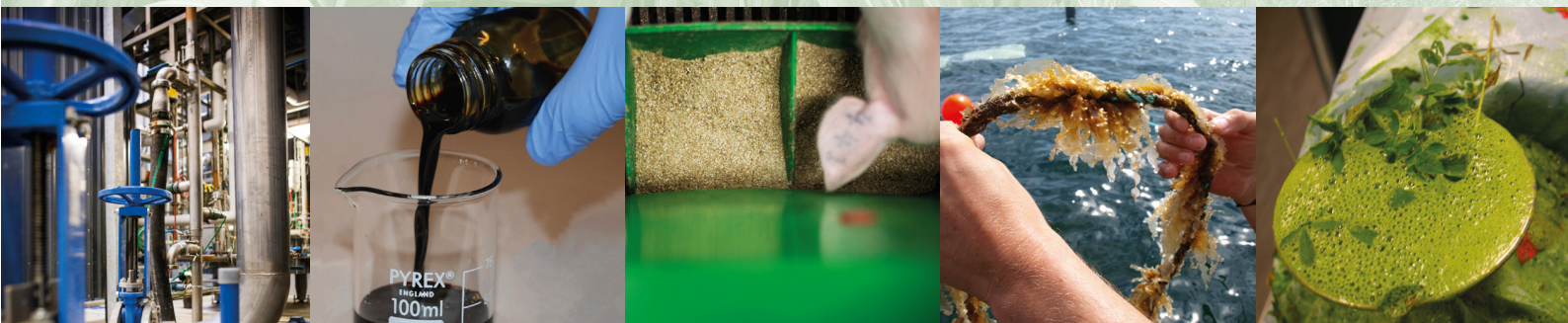
- How do we develop a circular bioeconomy, which supports a general sustainable development?
- What are the prerequisites for and the implications of the European protein strategy?
- What are the new protein sources for Europe?

**Grand opening of demonstration scale Green Biorefinery**

25-27 June at Aarhus University, Foulum, Denmark



**CBIO**  
AARHUS UNIVERSITY CENTRE FOR  
CIRCULAR BIOECONOMY





## **BIOECONOMY IN ACTION**

How do we develop a circular bioeconomy, that supports a general sustainable development? A series of top-notch presentations will set the scene for a debate on the challenges and opportunities ahead.

**11:00**      **Registration open**

**11:30**      **Lunch buffet**

**12:30**      **Interdisciplinary research to unlock the circular bioeconomy**

by Niels Halberg, Director of Danish Centre for Food and Agriculture

**The bioeconomy concept – and its implications**

by Dr. Dr. Christian Patermann, Director ret., European Commission

**The untapped potentials of the seas to contribute to the circular bioeconomy**

by Annette Bruhn, Senior Researcher, Marine Ecology, Aarhus Universitet

**Needs and requirements for realising bioeconomy 2.0 from a stakeholder perspective**

by Agnes Borg, Industrial Biotech Director, Europabio

**The dual bottom line in realising the circular bioeconomy**

by Mikael Skou Andersen, Professor, Environmental Science, Aarhus University

**14:15**      **Coffee**

**14:45**      **BIOECONOMY AT WORK**

How do we manage the economic potentials when using renewable biological resources? Four pioneers operating bioeconomy share their experiences

**Drivers on bioeconomy**

by Ejnar Schultz, Managing Director, SEGES, Danish Agriculture & Food Council

**Governance of big Bio Clusters - how to accelerate the green transition through a triple helix approach**

by Steen Hintze, CEO, Energifonden Skive

**Smart biomaterials from sustainable biomass**

by Lars Storm Petersen, Project director, Haldor Topsoe a/s

**Building a startup company on bioeconomy**

by Henrik Busch-Larsen, CEO, Unibio

**16:00**      **Visits at Aarhus University, Foulum pilot plants**

Experimental field crop research, Foulumgård

by **Uffe Jørgensen**, Centre Director, Centre for Circular Bioeconomy and **Poul Erik Lærke**, Senior Researcher, Agroecology

Biogas research facilities

by **Morten Dam Rasmussen**, Deputy Head, Dep. of Engineering and **Mogens Møller Hansen**, Buildings Manager, Biogas Plant

**17:00**      **Official inauguration of Aarhus University's new demonstration scale Green Biorefinery**

**18:00**      **Return to Viborg**

**19:15**      **Dinner and networking** at Nytorv Street Food, Viborg Snapsting

## THE PROTEIN CHALLENGE

A crucial element in the further development of the bioeconomy is the increasing demand for protein. Not only as feed for animals, but also as food ingredients. However, we need to grow or extract this protein in a way, that reduces the environmental footprint of the production.

08:30

**Coffee**

09:00

### **The market demand for new protein sources**

by Nan-Dirk Mulder, Associate Director, Rabobank International

### **Value creation in the protein ingredients market**

by Denis Chereau, General Manager, Improve

### **Green biorefinery as the tool for disruption of Northwestern European agriculture**

by Uffe Jørgensen, Centre director, Centre for Circular Bioeconomy, Aarhus University

10:00

**Coffee**

### **The development of plant proteins in the European Union**

by Silke Boger, European Commission, DG Agriculture and Rural Development

### **The Danish bioeconomy panel recommendations on protein**

by Asbjørn Børsting, Chairman of the Danish National Bioeconomy Panel

### **The future protein challenge - how to change strategies into action?**

by Roberta Iley, Principal Change Designer, Forum for the Future

### **System-mapping of a Nordic Alternative Protein Industry**

by Henrik Nørby Søndergaard, Innovation Lead - Climate KIC Nordic

### **An interactive session on the future education on bioeconomy**

by ABBEE project coordinator Gerlinde van Vilsteren, Wageningen University & Research

ABBEE; Accelerating the transition towards the Bio-Based Economy via Education

12:00

**Lunch**

13:00

### **Technical tours**

Indicate your choice upon registration

Note – there is a limited no. of participants on each tour

**Arla Foods Ingredients** - their largest production site, Danmark Protein. A unique environment for process development and test production

**Greenlab Skive** - an industrial business park for companies working actively with integrated green energy, intelligent grid and sustainable production

**KMC Food Innovation Centre** - a creative base for trials, tests and evaluations on highly refined ingredients with specialized functions

**Madsen Bioenergi** - one of the first biogas plants in Denmark upgrading biogas to bio-natural gas and delivering to the natural gas network on a full scale

**Dinner on the return-trip**

22:00

**Return to Viborg/Foulum**

## NEW PROTEIN SOURCES FOR EUROPE

Insights and outlooks on the development of new protein sources – what are they and how far are we in tapping their potentials?

Three parallel sessions on **new sources of protein** elucidating the circular perspective on their production and value chains mapping the state of the art, and identifying knowledge gaps in key processes.

08:30

**Coffee**

**Proteins from green biomass**  
Room: Auditorium

**Proteins from algae**  
Room: ML 2

**Proteins from mussels, starfish, worms and insects**  
Room: ML3-4

09:00

Bringing protein to the market - the case of alfalfa concentrated extract  
**Valentine Claudon**,  
Development Manager,  
Lucerne Research and Development; L-RD (FR)

Cultivation of microalgae  
**Malene Fog Lihme Olsen**,  
Senior Specialist, Danish  
Technological Institute (DK)

Opportunities and challenges of producing insects at industrial scale  
**Lars-Henrik Heckmann**, Head of Section, PhD, Danish Technological Institute (DK)

Functional proteins from vegetable and arable crop residues  
**Paulus Kusters**, GreenProtein  
Project manager, Royal Cosun (NL)

Production of macroalgae in the open ocean  
**Urd Grandorf Bak**, Research Manager, Ocean Rainforest (FO)

Status, challenges and opportunities in the production of mussels and mussel protein in Denmark  
**Jens Kjerulf**, Professor, National Institute for Aquatic Resources (DK)

10:00

Green biorefinery technology development, Pilot and demo-scale facilities at Aarhus University  
**Morten Ambye-Jensen**, Assist. Prof., Biorefinery, Aarhus University (DK)

Extraction of protein from macroalgae  
**Ingrid Undeland**, Professor, Biology and Biological Engineering, Food and Nutrition Science, Chalmers (SE)

Blue Mussel cleaning and processing  
**Margrét Geirsdóttir**, Northlight Seafood (IS)

Effects of ensiling on quality parameters in grass  
**Marketta Rinne**, Professor, Natural Resources Institute Finland (Luke) (FI)

Differences in protein fractionation from aquatic and green biomass  
**Angelica Tamayo Tenorio**, Food Process Engineering, Wageningen University (NL)

Processing insects for the production of protein  
**Dirk Sindermann**, Head of Process Technology - Renewables, GEA Group (DE)

Mealworm biorefinery and processing for food products  
**Marieke Bruins**, Senior Scientist, Wageningen Food and Biobased Research (NL)

11:00

Parallele events

**Poster session** with pitches and Q&A's to exchange new results and ideas with CBIO Ph.D. Students  
Climate KIC workshop **Challenges and opportunities in developing a systemic perspective on sustainable proteins**

12:00

**Lunch**

13:00

Quality requirements and nutritional value of protein products for feed from biorefined green biomass

**Søren Krogh Jensen**, Senior researcher, Molecular nutrition and reproduction, Aarhus University (DK)

Microalgae in fish feed

**Mette Sørensen**, Professor, Faculty of Bioscience and Aquaculture, Nord University (NO)

Can we turn decomposing seaweed into valuable worm protein for fish feed?

**Martin Holmstrup**, Professor, Soil Fauna, Ecology and Ecotoxicology, Aarhus University (DK)

Improved quality of soluble proteins from green biomass

**Trine Kastrup Dalsgaard**, Assoc. Prof., Food Chemistry and Technology, Aarhus University (DK)

Biorefining of micro- and macroalgae

**Rósa Jónsdóttir**, Research group leader, Ingredients & product development, Matis (IS)

Mussels, starfish and insects as feed protein sources

**Jan Værum Nørgaard**, Assoc. Prof., Animal Nutrition and Physiology, Aarhus University (DK)

14:00

System analysis of green biorefinery

by **Morten Birkved**, Professor, University of Southern Denmark, Life Cycle Engineering (DK)

Environmental impact of seaweed cultivation

by **Göran Nylund**, Researcher, Dep. of Marine Science, University of Gothenburg (SE)

Production of mussels as a tool to reduce eutrophication

by **Karen Timmermann**, Senior researcher, Applied Marine Ecology and Modelling, Aarhus University (DK)

15:00-15:10

Concluding remarks and goodbye

by **Uffe Jørgensen**, Centre director, Centre for Circular Bioeconomy, Aarhus University (DK)

**Venue: Aarhus University, Foulum, Blichers Allé 20, 8830 Tjele, Denmark**

**Any questions regarding the conference, please contact:**  
**bioeconomydays2019@agro.au.dk**

**[www.cbio.au.dk](http://www.cbio.au.dk)**