

Biomass and Energy Crops VI

1st - 3rd October 2024

Aberystwyth University
Prifysgol Aberystwyth



PROVISIONAL PROGRAMME

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Association of Applied Biologists

Warwick Enterprise Park, Wellesbourne, Warwick CV35 9EF, UK

Registered Charity No. 1195899; <http://www.aab.org.uk>

Tel: +44 (0)2476 999485 Email: John@aab.org.uk

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ASSOCIATION OF APPLIED BIOLOGISTS
CROPPING AND THE ENVIRONMENT

Biomass and Energy Crops VI

Biomass and Energy Crops can provide feedstocks for bioenergy with carbon capture and storage (BECCS), sustainable aviation fuels (SAF), green manufacturing and construction materials. Biomass and Energy Crops are therefore important for not only renewable energy and transport fuels, but also for the decarbonisation of agriculture and other industries.

In response to the urgency of the climate emergency, biomass and energy crops are becoming an important part of the portfolio of negative emissions technologies, needed for meeting net zero targets. As a result, the size of the Biomass and Energy Crop community has significantly expanded in recent years. For example, in the UK this has been through the Biomass Feedstocks Innovation Programme, the Greenhouse Gas Removal Demonstrator Programme, the Supergen Bioenergy Hub and the AI for Net Zero Programme.

This meeting brings together researchers from these communities in the UK along with researchers involved in similar international programmes, and importantly industrialists and policymakers, to exchange ideas and foster closer collaboration, and to thereby ensure that Biomass and Energy Crops can fulfill their potential for people and planet.

Tuesday October 1st

Medrus Conference Suite, Penglais Campus Aberystwyth University, SY23 3BY

1000-1100 Registration Open

WELCOME & SCENE SETTING

1100-1110 **IAIN DONNISON** Aberystwyth University, UK

OPENING SESSION

CHAIR: Iain Donnison

1110- 1140 TBC
GERRY TUSKAN Oak Ridge National Laboratory USA

1140-1210 TBC
LUISA TRINDADE, Wageningen UR Plant Breeding, THE NETHERLANDS

1210-1240 Miscanthus germplasm exhibits great variation for overwintering ability and freeze-tolerance of dormant plants
ERIK SACKS, University of Illinois-Urbana USA

1240- 1345 LUNCH

SESSION 1: Land Use and Environment

Chair: TBC

1345-1415 Biomass crops and greenhouse gas removals: research, evidence, and impact
JEANETTE WHITAKER, Centre for Hydrology and Ecology UK

1415-1435 Biomass Crops and Farmland Birds, Understanding Spatial impacts across the UK
REBECCA ROWE, Centre for Hydrology and Ecology UK

1435-1455 Timing and permanence of land-based carbon dioxide removal: A comparison of BECCS and afforestation in the UK
ASTLEY HASTINGS, University of Aberdeen UK

1455-1515 Mapping the Wider Sustainability Benefits and Risks of Biomass & Energy Crops
ANDREW WELFLE, University of Manchester UK

1515-1545 BREAK

SESSION 2: Biology of Biomass Crops

Chair: TBC

1545-1605 Understanding the control of seasonal development for improved yield in the biomass crop Miscanthus
PAUL ROBSON, IBERS Aberystwyth University UK

1605-1625 Biomass potential of Miscanthus × giganteus native to southern Japan on Hokkaido Island, Japan
TOSHIHIKO YAMADA, Hokkaido University JAPAN

1625-1645 Off to a quick start: Breaking rhizome dormancy in Miscanthus
DANNY AWTY-CARROLL, IBERS Aberystwyth University UK

1645-1705 Tunable Editing of Leaf Inclination Angle in Highly Polyploid Sugarcane Defines the Ideotype for Biomass Yield
FREDY ALTPETER, University of Florida USA *Online presenter*

1705-1730 **SHORT POSTER TALKS**

1730-2000 **POSTER SESSION, HOT BUFFET and DRINK RECEPTION**
Medrus Conference Suite

Wednesday October 2nd

IBERS, Plas Gogerddan, Aberystwyth SY23 3EB

0915 Meet at **Aberystwyth Train Station**, Alexandra Rd, Aberystwyth SY23 1LH.

0929 Train journey to **Bow Street Station** (7 minutes)

0936-1000 Walk or Minibus to **IBERS**, Plas Gogerddan, Aberystwyth SY23 3EB

SESSION 3: Breeding of Biomass Crops

Chair: TBC

1000- 1030 Research Update and Introduction to IBERS
IAIN DONNISON, Aberystwyth University UK

1030-1100 TBC
STEVE HANLEY, Rothamsted Research UK

1100-1120 Implementation of Genomic Selection to accelerate breeding in Miscanthus species
KERRIE FARRAR, IBERS Aberystwyth University UK

1120-1140 Miscanthus genotypic variation in soil carbon sequestration
AMANDA HOLDER, IBERS Aberystwyth University UK

1140- 1200 Practical application of genomic selection in Miscanthus breeding programme
NELSON LUBANGA, IBERS Aberystwyth University UK

1200-1300 LUNCH

SESSION 4: Agronomy of Biomass Crops

Chair: TBC

1300- 1320 Investigating novel agronomic practices to establish perennial biomass crops
CHRIS ASHMAN, IBERS Aberystwyth University UK

1320-1340 Effects of perennial biomass crop establishment practices on soil N₂O emissions
KELLY MASON, Centre for Hydrology and Ecology UK

1340-1400 Navigating Challenges and Achievements in Commercial Miscanthus Seed Production
MICHAL MOS, Energene Seeds Limited, Plas Gogerddan UK

1400-1420 Early development of perennial Miscanthus established with different methods in strip cropping system with annual crops
KUJTIM GASHI, Justus-Liebig University Giessen GERMANY

1420-1445 BREAK

1445 Tours of Facilities

Delegates split into two groups for two visits

1. [Frongoch Biomass Connect site](#)

2. Tour of IBERS facilities

- [Biorefining Centre](#)
- National [Plant Phenomics Centre \(NPPC\)](#)
- [IBERS Seed Bank](#)

1700 Return to **Aberystwyth** by bus

1900 Conference Dinner
Medrus Conference Suite, Penglais Campus

Thursday October 3rd

Medrus Conference Suite, Penglais Campus Aberystwyth University, SY23 3BY

SESSION 5: Valorisation and Chemistry

Chair: TBC

0900- 0930 TBC
PATRICIA THORNLEY, Aston University UK

0930-0950 Conversion of under-resourced crops, bio-waste, and other biomass into high value products using a yeast fermentation
DARREN GREETHAM, University of Leeds UK

0950-1010 Soft sensor for rapid analysis of biomass fractionated with ionic liquids
SUHAIB NISAR

1010-1030 Factors Determining Hydrogen Production from Bioenergy Crops via Photoreforming
LAN LAN, The University of Manchester UK

1030-1050 Multifunctionality: The ace up bio-energy's sleeve
DAVID CHRISTOPHERSON, Future Biogas Ltd Guildford UK

1050- 1120 BREAK

SESSION 6: Woody Biomass Crops & Environmental Impacts

Chair: TBC

- 1120-1150 TBC
GAIL TAYLOR, University College London, UK
- 1150-1210 Dehydration Tolerance Of Black Cottonwood Poplar For Sustainable Biomass Product
TIM TSCHAPLINSKI, Oak Ridge National Laboratory USA
- 1210- 1230 Understanding environmental impact of aeroponically producing short rotation cop
JAMES SUCKLING, University of Surrey UK
- 1230-1250- Predictive modelling of willow biomass production in aeroponic systems
YUQING XIA, University of Surrey UK
- 1250-1320 High-throughput phenotyping for productivity traits in *Populus trichocarpa* – A remotely interesting story
JACK BAILEY-BALE, UC Davis, USA
- 1320- **LUNCH and DEPARTURE**

Poster Presentations (as August 14th)

- P1 Development of tools for cell autonomous and non-autonomous assays in *C. sativa*
PAWAN KUMAR, The University of Chicago USA
- P2 Reality check on the role of biomass in net-zero: reflections from industry-wide
CASPAR DONNISON, University of Southampton UK
- P3 Machine learning-based prediction of biochemical methane potential of agricultural residues utilizing feedstock composition
DANIEL FASHEUN, Instituto Nacional de Tecnologia, Rio de Janeiro BRAZIL
- P4 Assessing the Regenerative Capacity of Leaf, Meristem, and Nodal Explants in Different Hormonal Combinations for *Miscanthus×giganteus*
MUHAMMAD BAQIR HUSSAIN, University of Agriculture Multan INDIA
- P5 Potential of *Miscanthus × giganteus* for abiding saline irrigation and drying under arid climatic conditions
MUHAMMAD BAQIR HUSSAIN, University of Agriculture Multan INDIA
- P6 Rapid multiplication of saplings for woodland creation and establishment using novel aeroponic technology
OKANLAWON JOLAYEMI, University of Surrey UK
- P7 Genomic prediction to accelerate willow breeding
FUNMI LADEJOBI, Rothamsted Research UK

P8 Nitrogen recycling and its role in biomass production in *Miscanthus sinensis* progeny: a pathway to sustainable bioenergy

SHEHRYAR IQBAL, Cross-border BioEcoAgro UMR FRANCE

Special Issue of Annals of Applied Biology on Biomass and Energy Crops

We are organising a special issue of the AAB-owned journal to coincide with this conference. We hope that you and your colleagues will be interested in submitting a manuscript to this special issue.

The submission deadline is December 31st 2024

Guest Editors:

Dr. **Andrew Welfle**

University of Manchester, UK

Dr. **Jon McCalmont**

University of Aberdeen, UK

Dr. **Caspar Donnison**

Lawrence Livermore National Laboratory, USA

Annals of Applied Biology

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Announcing a Special Issue on:

Biomass and Energy Crops

in association with the

Biomass and Energy Crops VI

Paper Submission Deadline: 31 December 2024

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