MISCOMAR+

MISCANTHUS FOR CONTAMINATED AND MARGINAL LANDS PLUS

Colourbox

3° Call:	2019
Project period:	01/03/2020 – 28/02/2022
Topic:	Sustainable bioenergy and bioproducts with land remediation
Keywords:	Perennial bioenergy, biomass feedstock, metal recovery, agronomy for contaminated and marginal land types, phytostabilization
Coordinator:	Dr Elaine Jensen
	Email: elaine.jensen@aber.ac.uk
Project partners:	Institute for Ecology of Industrial Areas, Poland; Research and Innovation Centre Pro-Akademia, Poland; University of Hohenheim, Germany; French National Institute for Agricultural Research, France; Gießereitechnik Kühn, Germany; University of Nottingham, UK; Imperial College of London, UK; Terravesta Assured Energy Crops Ltd, UK; TerrAffix Soil Solutions Ltd, UK; Novabiom, France.
Total funding:	1.344.000 €
Website:	http://www.miscomar.eu/

FACCE SURPLUS
SUSTAINABLE AND RESILIENT AGRICULTURE
FOR FOOD AND NON-FOOD SYSTEMS

miscomar+

BACKGROUND

Bioenergy is a key element of the EU renewable strategy and exists at the interface of policies on agriculture/land use and energy generation. Currently the majority of biofuels are produced from annual food crops grown on agricultural land, whereas the majority of solid biomass used for heat and power is woody and comes from forests. To avoid tension between food and fuel production, changes to the current approach are proposed by the European Commission to grow perennial energy crops on medium or low quality agricultural land wherever possible.

OBJECTIVE

MISCOMAR+ will extend the evidence-base for Miscanthus as a leading perennial bioenergy crop for Marginal, Contaminated, and industrially damaged Land (MaCL) using interdisciplinary academic and industrial expertise, with novel Miscanthus hybrids bred for climate change resilience.

The MISCOMAR+ consortium comprises Miscanthus breeders, agronomists, physiologists, soil scientists, and biomass conversion engineers in the UK, France, Germany and Poland. Academics will work closely with SMEs to deliver robust agronomies for crop establishment on challenging MaCL, with innovative biorefinery options for the circular bioeconomy. Miscanthus on MaCL represents smart bioenergy because biomass is produced by the most sustainable means on land that is currently unsuitable for food production. Our approaches have potential to boost productivity from poorly functioning land whilst improving ecosystem services.

METHODOLOGY

MISCOMAR+ builds on knowledge from FACCE SURPLUS projects MISCOMAR and Supervalue to maximize valorization. MISCOMAR showed the potential of Miscanthus on MaCL, but highlighted knowledge gaps in optimizing establishment. Supervalue studied the recovery of elements from biomass ash in a small-scale biorefinery setting, but will now address metal recovery and added value from 'waste' residues. In MISCOMAR+ we aim to de-risk crop establishment by developing innovative agronomies for MaCL, and develop innovative biomass value chains, evaluated for environmental, social, and economic sustainability with standard LCA approaches using real data.

FUTURE

Our expected overarching outcome is that Miscanthus biomass produced on MaCL provides ecosystem benefits, and commercially attractive biomass yield and quality thresholds for conversion to specific bio-based products that can be used to replace non-renewable and less sustainable alternatives.

MISCOMAR+ members will provide evidence for expert consultations by farming and industrial associations, environment groups and policy makers. MISCOMAR+ drives innovation for a number of new technologies through our SME partners. Research translation from this project can deliver on most United Nation Environment Programme Sustainable Development Goals.