

GRACE

GRowing Advanced industrial Crops on marginal lands for biorEfineries



GRACE

Summary

The GRACE project will explore the potential of the non-food industrial crops miscanthus and hemp as a source of biomass for the bio-economy. Both miscanthus and hemp are relatively under-exploited, but offer an interesting business opportunity for farmers and industry. When cultivated on marginal, contaminated or unused/abandoned land, the impacts on food security can be minimized, and the potential introduction of pollutants into the food chain can be prevented.

GRACE will demonstrate and optimise the techno economic viability and environmental sustainability of ten promising miscanthus and hemp biomass-based value chains using marginal, contaminated and unused land at an industry relevant scale.

The aim is to identify hemp varieties suitable for marginal lands and to have commercial miscanthus cultivars available by the end of the project with several proven economically viable end uses creating a market pull for growth in the bio-economy.

<http://www.grace-bbi.eu>

Type of Action:
Innovation Action -
Demonstration

Value Chain: VC1 –
lignocellulose

Start date: 01 June 2017

End date: 31 May 2022

BBI JU contribution: €
12,324,632.86

Objectives

The GRACE project has set the following specific examples

- Supply 13 different near-to-market seed based miscanthus hybrids
- Further adapt and improve the miscanthus germplasm entries.
- Demonstrate large-scale crop production of novel seed-based miscanthus hybrids and hemp varieties on marginal, contaminated and/or unused land.
- Compare and demonstrate the feasibility of ten different promising biomass value chains.
- Assess and optimise the techno-economic viability, environmental and social performance of the demonstrated value chains.
- Optimise the value chain organisation of bio-based value chains.
- Implement an industry panel as a platform for knowledge and biomass exchange.
- Increase the business and innovation

Expected impacts

The GRACE project expects to make a major contribution to the EU bio-economy by increasing the biomass production from marginal lands and reducing the costs of crop establishment. This will enable current marginal land in the EU, around five percent of crop land and ten percent of grassland, to produce useful biomass. It aims to have the following specific impacts:

- Increase use of low-quality arable land, and by so doing, minimise the potential for food/fuel competition.
- Develop both land-use efficient crops and increase the sustainability of the European farming sector.
- Improve farmers' income by adding new crops to their crop portfolio.
- Create a sustainable feedstock supply
- Demonstrate biomass utilization options for contaminated land.
- Demonstrate that introducing biomass crops in the right places will increase the availability of agricultural land and the

Impact of the biobased industry.

efficiency its use rather than compete with food crop production.

“Reduce land use compared to current productivity for the same product categories, when obtained from crops or other conventional primary biomass sources.”

Achievements & milestones

A step towards greater biomass uptake in Europe

25 October 2019

The BBI JU GRACE project has successfully tested the usability of miscanthus for biofuel production. The technology used could help realise the full potential of this promising energy crop. [Read more](#)

Project coordination

- Universität Hohenheim (Germany)
- Wageningen University (Netherlands)
- Institut national de la recherche agronomique (France)
- Aberystwyth University (UK)
- Università Cattolica del Sacro Cuore (Italy)
- Sveučilište u Zagrebu Agronomski Fakultet (Croatia)
- Novamont Spa (Italy)
- Mycoplast Di Federico Maria Grati e Stefano Babbini S.n.c.. (Italy)
- AVA Biochem BSL AG (Switzerland)
- Addiplast SAS (France)
- INA - Industrija Nafta DD (Croatia)
- Indena Spa (Italy)
- C.M.F. Greentech Srl (Italy)
- Consorzio di Bonifica di Piacenza (Italy)
- Kuehn Uwe (Germany)
- Ecohemp Srl (Italy)
- Coöperatieve Vereniging MISCANTHUSGROEP U.A. (The Netherlands)
- Terravesta Assured Energy Crop Ltd (UK)
- Vandinter Semo B.V. (The Netherlands)
- Novabiom (France)
- Furtlehner Johannes (Austria)
- SPRING - Sustainable Processes and Resources for Innovation and National Growth (Italy)

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