COSMOS
ADDING VALUE TO CAMELINA AND CRAMBE OIL

Press release

nova-Institute GmbH (www.nova-institute.eu)
Hürth, 8 April 2015

EU research project on underutilised oil crops kicks off: COSMOS – Camelina & crambe Oil crops as Sources for Medium-chain Oils for Specialty oleochemicals

On 24-26 March 2015, the eighteen partners involved in the EU funded research project COSMOS held their kick-off meeting in Wageningen, The Netherlands. Led by Wageningen UR Food & Biobased Research, this 4.5-year project aims at reducing the dependence of Europe's oleochemical industry on imported plant oils by turning camelina and crambe into profitable, sustainable, multipurpose, non-GMO European oil crops.

The European oleochemical industry currently relies on imported coconut and palm kernel oils and fatty acids and on castor oil as sources for medium-chain fatty acids (MCFA, C10–C14) and medium-chain polymer building blocks. These are needed for the production of plastics, surfactants, detergents, lubricants, plasticisers and other products.

COSMOS aims at reducing this dependence by turning the currently underutilised domestic oil crops camelina and crambe into profitable, sustainable, multipurpose, non-GMO European oil crops for the production of oleochemicals. Seed properties will be screened and optimised through genetic techniques aiming at high yield, low resource inputs, optimisation of the value generated from vegetative tissues and fatty acid profiles adapted to industrial needs. Large-scale field trials will be performed at different locations in Europe to assess the potential of the crops in terms of cultivation practices, seed yield, oil content, ease of harvesting, and resource inputs.

Extracted oils will be fractionated into various fatty acid types (monounsaturated versus polyunsaturated) by selective enzyme technologies and extraction processes. The monounsaturated long-chain fatty acids so obtained will be converted to medium-chain fatty acids (MCFA) and high-value building blocks for bio-plastics and flavour and fragrance ingredients through chemical and enzymatic chain cleavage processes. The ω3-rich polyunsaturated fatty acids (PUFA) fraction will be purified for use in food and feed ingredients. Vegetative tissues such as straw, leaves and press cake will be fed to insects producing high-value proteins, chitin and fats. Insect fats and proteins will be isolated and prepared for use in food and feed products. The overall economic, social and environmental sustainability as well as life cycle of the whole value chain will be assessed. The impact of the project for Europe will be assessed in terms of value chain potentials for value creation and number of jobs that can be created.

Project partners

The project comprises eighteen partners, of which 50% are SMEs and large enterprises and the remaining 50% are universities and research institutes. The research consortium is being managed by Wageningen UR Food & Biobased Research.

Institutes and universities include Alma Mater Studiorum – Università di Bologna (Italy), Ernst-Moritz-Arndt-Universität Greifswald (Germany), Uniwersytet Warminsko--Mazurski w Olsztynie (Poland), Wageningen University and Stichting Dienst Landbouwkundig Onderzoek (The Netherlands), Université de Rennes (France), Centre for Physical Sciences and Technology (Lithuania), Centre for Renewable Energy Sources and Saving (Greece) and Imperial College of Science, Technology and Medicine (UK).

Companies include Enzymicals AG, Institut für Energie- und Umweltforschung Heidelberg GmbH and nova-Institut für Politische und Ökologische Innovation GmbH from Germany, InCatT B.V. (a spin-off company of the University of Amsterdam), Kreca Ento-Feed B.V. and Linnaeus Plant Sciences B.V. from the Netherlands, Solutex GC, S.L. from Spain, Apeiron Synthesis from Poland and Arkema from France.

A project website will be available soon at: www.cosmos-h2020.eu.

COSMOS receives funding from the European Community's Horizon 2020 (H2020) under the grant agreement No. 635405. For more information, contact the project coordinator, Rolf Blaauw, Wageningen UR (University & Research centre, Netherlands) via rolf.blaauw@wur.nl or by telephone: +31 (0)317 48 01 55, or the Dissemination and Exploitation Officer Stephan Piotrowski, nova-Institute, via stephan.piotrowski@nova-institut.de or +49 (0) 2233 48 14 53.

Responsible under press legislation (V.i.S.d.P.):
Dipl.-Phys. Michael Carus (Managing Director),
nova-Institute GmbH, Chemiepark Knapsack,
Industriestrasse 300, 50354 Huerth (Germany)
Internet: www.nova-institute.eu and www.bio-based.eu
Email: contact@nova-institut.de
Phone: +49 (0) 22 33-48 14 40