



Crops2Industry

“Non-food Crops-to-Industry schemes in EU27”

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CRES - Center for Renewable Energy Sources

1st Thematic Workshop, Poznan/Poland, 18 November 2009

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Project coordinates

Funding scheme: Coordination Action

Grant agreement no. 227299

Duration: 30 months

Total budget: € 994,246

14 partners: 4 universities, 5 research institutes and 5 companies





Project coordinates

Topic Area: "KBBE-2008-3-1-03: European non-food crops and their industrial application".

This coordination action should bring together stakeholders such as industry, academia, plant breeders and economists. Coordination of activities should result in a portfolio of industrial crops suitable for the different Member States and map the most promising plant-based products derived from these crops and meet the future needs of consumers and industry (e.g. fibres, resins, oils, specialty products, etc.).

The CSA should identify the necessary enabling technologies to overcome the bottlenecks in plant breeding (such as yield or adaptation), and enable the conversion, extraction and processing of the envisaged compounds.

Also it should identify the economic potential and best business opportunities for the industrial exploitation of European non-food crops.

Expected impact: Selection and prioritization of non-food crops which enhance the competitiveness of the European industry, and will improve rural development through diversification and provision of new sustainable sources of income for the farming community.





The overall objective is to **explore the potential of non-food crops**, which can be domestically grown in EU27 context, **for selected industrial applications**, namely oils, fibers, resins, pharmaceuticals and other specialty products **and outline and prioritise crops-to-products schemes**, suitable for the different Member States, which will support sustainable, economic viable and competitive European bio-based industry and agriculture.

The expected output will be to identify whether and under which terms Europe has the potential and the technical competence to develop a competitive bio-industry fed by a sustainable agriculture.



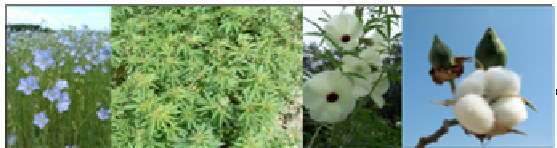


The concept

Oil Crops



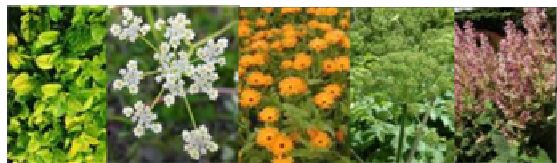
Fibre Crops



Carbohydrate Crops



Other Specialty Crops



Crop2Industry



Oils



Fibres



Resins



Pharmaceuticals and



other specialty products

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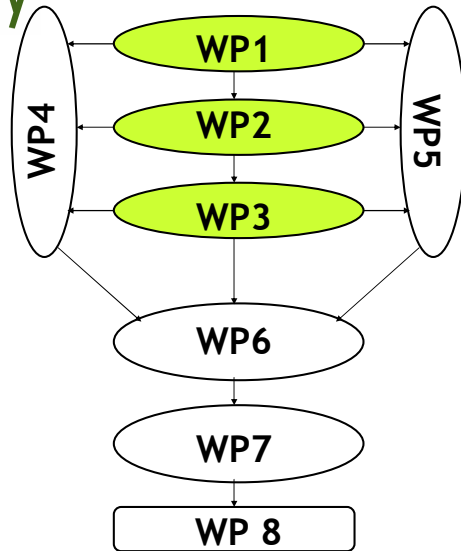


The consortium

CRES - Centre for Renewable Energy Sources, Greece	Crops
UNIBO - University of Bologna, Italy	
INF&MP - Institute of Natural Fibres and Medicinal Plants, Poland	
BIOS - BIOS AGROSYSTEMS S.A., Greece	
NCPRI - National Institute for Chemical and Pharmaceutical Research and Development, Romania	
ITERG , France	Industry
KEFI - Kenaf Eco Fibers Italia S.p.A, Italy	
Hempflax B.V , The Netherlands	
CHIMAR Hellas S.A, Greece	
AUA - Agriculture University of Athens, Greece	Biotechnology
ICCEPT - Imperial College London, UK	Economics
OeKO - Institut of Applied Ecology, Germany	Sustainability
BOKU - University of Natural Resources and Applied Life Sciences, Austria	
FZ-JUELICH Forschungszentrum Julich GmbH, Germany	Overall assessment



Project activities



- Identify current molecular genetics technologies (genomic and biotechnological tools) and suggest their potential applications in a crop-specific manner to address a wide range of breeding constraints regarding yields and tolerance to abiotic and biotic conditions (WP2/AUA)
- Explore the potential of non-food crops, which can be domestically grown in EU27 countries, for selected industrial applications (WP1/CRES)
- Explore the potential and feasibility of the European industry to make high-value biobased products namely oils, fibers, resins, pharmaceuticals and other specialty products (WP3/INF&MP)

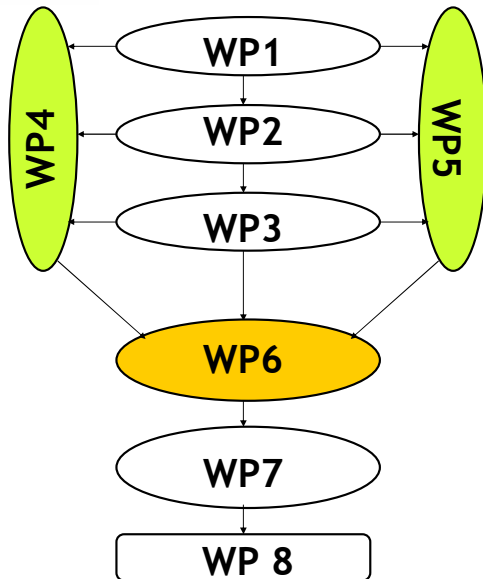
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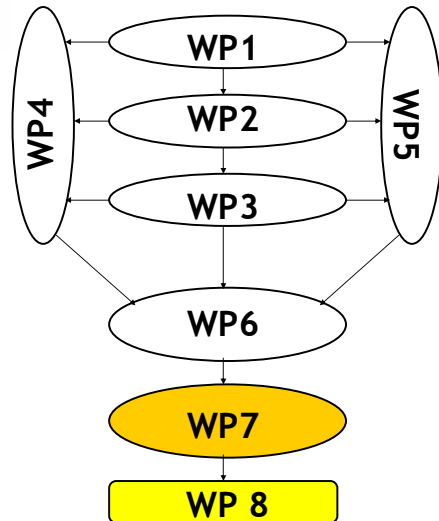
Project activities



- Assess selected production and environmental impacts and identify a ‘core’ list of standards and criteria for the environmental and socio-economic sustainability of selected non-food crops-to-industrial-products systems(WP5/OECO)
- Perform supply chain cost analysis, identify best business opportunities and assess the socio-economic impacts of selected crop-to-product schemes at EU-27, regional and country levels (WP4/IMPERIAL)
- Perform an overall assessment aiming to select and prioritise crops-to-products schemes in technical, socio-economic and environmental terms (WP6/FZJ)



Project activities



Thematic workshops

- Can fibre crops offer a viable alternative land use option? (Poland, m5)
- Carbohydrate crops and the dilemma of using them for non-food purposes (The Netherlands, m11)
- Can oil crops be considered as the only industrial crops that have a clear niche market in EU 27? (France, m17)
- Niche markets for specialty industrial crops (Greece, m23)
- Non-food crops for a bio-based Industry and sustainable agriculture (Italy, m29)

Dissemination activities (WP7) -

- project website (www.crops2industry.eu)
- links with other activities, like:
 - Plants for the future platform
 - IENICA project
 - 4F Crops project
- EU Twinning events (EU-Canada)





WP7. Dissemination and support actions

1st Thematic workshop

‘Can fibre crops offer a viable alternative land use option
and could they support a competitive industry ?

(Poland, 18th November, m3)’

Joint with the workshop of ‘4F crops -Future Crops for Food, Feed, Fiber and Fuel’ project:

“Can the production of non-food crops be environmental friendly and economically viable?”

held the 17th November in the INF&MP premises



WP1. Non-food crops

Objective: Explore the potential of non-food crops, which can be domestically grown in EU27 countries, for selected industrial applications

Task 1.1 Oil crops

Task 1.2 Fibre crops

Task 1.3 Carbohydrate crops

Task 1.4 Other specialty crops

Task 1.5 Multiple end use potentials and allocation factors

Task 1.6 Assess available land area for non-food crops in EU27

Topic areas

- Plants anatomy
- Areas of origin and current cultivation
- Growing conditions - input requirements
- Logistics
- Yields
- Quality
- Applications: current - potential
- Factors restricting growth and yields
- Research gaps





WP3. Bio-based products

Objective: Explore the potential and feasibility of the European industry to make high-value biobased products namely oils, fibers, resins, pharmaceuticals and other specialty products

Task 3.1. Oils

Task 3.2. Fibres

Task 3.3 Resins

Task 3.4

Pharmaceutical and other specialty products

The **output** of this WP will be:

- Review on the product yielding capacity from various industrial crops streams
- Identify desirable quality characteristics for mature industrial processes
- Report on current alternative resources for each industrial use
- Set prospects to widen the range of potential feedstocks
- Identify restricting factors that inhibit broader industrial use of the biomass feedstocks
- Define research gaps, prospects and recommendations

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9:00 - 11:00			Session 1. Growing fiber crops in Europe		
9:00 - 9:20	Welcome by INFMP management	<i>Dr Maria Wladyka-Przybylak</i>			
9:20 - 9:40	Project outline	<i>Myrsini Christou, CRES</i>			
9:40 - 10:00	Land use competition issues for food, feed, energy and fibre production	<i>Ralph Sims, IEA</i>			
10:00 - 10:20	The role of fibrous plants in cleaning polluted soil	<i>Ryszard Kozlowski, former INF&MP</i>			
10:20 - 10:40	First tests on hemp harvesting, baling and treatment with flax machineries	<i>Luigi Pari, CRA-ING</i>			
10:40 - 11:00			Coffee break		
11.00 - 12:00			Session 2. Industrial uses of fiber crops		
11:00 -11:20	From growing kenaf to its industrial use	<i>Andrea Monti, Alessandro Zatta, UniBo</i>			
11:20 - 11:40	Fibre crops for the fibre industries: advantages and bottlenecks	<i>Valerio Zucchini, KEFI</i>			
11:40 -12:00	Flax & Industrial hemp- valuable plants for agriculture and industry	<i>Krzysztof Heller, Malgorzata Strybe, INF&MP</i>			
12:00 - 13:00			Light Lunch break		
13:00 - 15:00			Round Table:		
<p>Topics:</p> <ol style="list-style-type: none"> 1. Restricting factors inhibiting broader industrial use of fiber crops (supply, costs, physical traits, consistency in quality, technical performance, economic viability and security of the investment, etc) 2. Prospects to widen the range of potential feedstocks 3. Research gaps and recommendations 					

CROPS 15:00

TO End of meeting

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**Thank you for your attention
and your presence in our workshop!**

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