

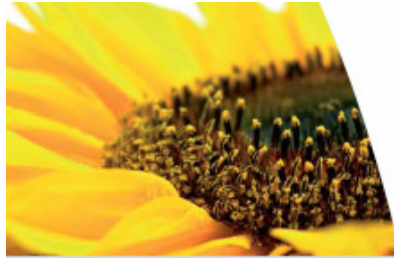
HELICAS: Innovative utilization strategies for sunflower biomass

Sunflower is a major source of vegetable oil in Europe and worldwide. The production of oil and non-oilseed sunflowers in Europe has increased steadily over the last 30 years. Especially in Central and Southern Europe sunflower crop production plays an important role in terms of employment and economy. More than 450.000 European farmers are cultivating sunflowers on more than 2.55.000 ha in 21 European countries. Increasing production of non-European oil plants (palm and soybean oil), increasing competition and changes in the Common Agricultural Policy lead to an enormous pressure on the SMEs in this sector.

Taking into account that today only the sunflower seeds are used, 95% of the produced biomass is wasted, even if it shows very interesting functional properties for food and cosmetic applications. Indeed, the demand for substances of interest for the cosmetic and nutraceutical sectors is continuously growing in Europe.

Therefore, practical and economic utilisation methods of sunflower biomass can amplify the proposer farmers' product range and by this improve their competitiveness.

Thus, the overall objective of the HELICAS project is to raise the sunflower plant value through the research and development of utilisation methods, processes and technologies for the sunflowers' biomass recycling (stems, leaves of blossoms, solid residues), and through the development of highly innovative products like valuable substances' extraction for wellness (cosmetics, nutraceuticals) applications and the utilisation of the pressed cake after oil extraction for aquaculture.



THE CULTIVATED SUNFLOWER (*Helianthus annuus* L.) ranks with soybean, rapeseed and peanut as one of the four most important annual crops grown in the world for edible oil.



EXTRACTION OF OIL from sunflower kernels poses no special problem; therefore, an oil press can be employed successfully to squeeze the oil from the seed.



SUNFLOWER OIL is a premium cooking oil because of its light colour and bland flavour. In some European countries and Japan, the high concentration of the polyunsaturated fatty acid, linoleic acid, also contributes to its distinction as a premium oil.

With the above mentioned new valorisation methods, the overall performance of the involved sunflower farmers will be substantially improved: It will give them more flexibility and will reduce their dependency of partial subsidies. Other partners in the consortium such as cosmetics producers and fish farmers will benefit from ingredients or inputs adapted to their respective needs.

Project N°: COOP-CT-2005-017992

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