Project funded in the picture POR FESR 2014-2020

Tender 1 – Strategic Projects of researech and development

Project: COCONAT

Innovative processo of production of natural tanning and colorants by agri-food waste materials

The project have the follow partners:

1. Conceria Lufran srl
2. Italven Conceria srl
3. KLF Tecnokimica srl
4. Tecno srl
5. UNIPI Dip.to ingegneria civile e industriale
6. Consorzio Polo Tecnologico Magona
7. Conceria INCAS spa

COCONAT project is included in the strategic bio – economy circular with the target of achieve the strategy "zero waste", that propose of consider the waste as resource from which to obtain products with a high added value in accordance with the principles of economic, environmental, social and cultural sustainability.

Therefore, the project proposes an integrated solution for the valorisation of agri-food waste and the reduction of the environmental impact of the tanning industry through the development of a process of extraction of the components of interest (tanning agents and natural dyes) from agricultural waste. food, and the recovery of residual biomass (for example as a raw material for the production of compost), which will lead to the definition and obtaining of innovative processes / products with reduced impact on the environment and for humans, in all its life cycle (LCA methodology).

The project, based on the objectives it intends to achieve, therefore offers an integrated solution for the valorisation of agri-food waste and the reduction of the environmental impact of the tanning industry. The polyphenols extracted from food processing residues can be used as dyes and natural tanning agents in the leather processing process, thus making food waste a resource from which to obtain raw materials, rather than waste destined for disposal.

In addition, the proposed solution promotes synergies between key industrial sectors (eg agriculture, food processing, tanning industry), maximizing the value of waste in the agricultural and food sectors and increasing the competitiveness of the tanning industry by enhancing and differentiating the leather market through the offer of hypoallergenic and eco-sustainable products.

The developed products, which will replace compounds such as chromium, zirconium, aluminum, aldehydes and other traditionally used tanning agents, as well as azo and metal-complex dyes, will allow to produce biodegradable and hypoallergenic (metal-free) articles with product characteristics and performance in line with the production standards of companies. The technical objectives that we intend to pursue with the project are:

identification of waste matrices from which polyphenols can be extracted to be used as dyes and tanning agents or for the subsequent synthesis of new natural tanning agents;

development of the extraction and synthesis processes of new natural products for the tanning industry and their validation on a pilot scale;

validation on a pre-commercial scale of the products developed in the leather processing cycle;

assessment of the effective environmental sustainability of the processes for the recovery of the proposed waste.

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