Project description:

Background

The European Union leather industry, 70% of which is located in Italy and Spain, represents a significant share of global production and is an important economic sector for the whole EU. However, leather production is traditionally responsible for heavy environmental impacts. In particular, industrial leather tanning entails significant use of:

- Hazardous substances during the tanning phase which end up in waste water;
- Fatliquoring products (used to re-introduce oil following tanning) which are generally not biodegradable; and
- Formulations containing volatile organic compounds (VOCs) or that generate persistent, bioaccumulative and toxic (PBT) substances.

In addition, there are difficulties in recycling and disposal of semi-finished or finished products containing toxic metals. The whole sector needs to significantly improve the environmental sustainability of its processes.

Objectives

The LIFETAN project will demonstrate innovative natural products and technologies for the degreasing, fatliquoring, bating (softening), dyeing and tanning phases of leather production. It will build on the results of previous LIFE
projects that substituted toxic chemicals used during the leather tanning cycle to produce significantly more sustainable products. In particular, the project will:

- Use natural fatliquoring and degreasing products that do not exceed the legal limits for hazardous substances in leather goods;
- Obtain the European Ecolabel for the fatliquoring and degreasing products;
- Reduce contamination of waste water by enhancing the biodegradability of fatliquoring and degreasing products;
- Recycle and use poultry waste in the bating phase of the tanning cycle;
- Design natural dyes based on lactose from waste milk serum that comply with EU's REACH chemicals regulation; and
- Apply an innovative chrome-free tanning technology.

Expected results:
- Replacement of PBTs in the tanning process with six new tanning formulations that use natural products;
- 50 sheep/goat skins and bovine leathers tanned using the natural products;
- Manufacture of 100 sample leather products using the natural products, in line with EU Ecolabel criteria;
- A reduction (20%) of pollutants in waste water from leather production;
- A 20% reduction of water consumption during the tanning process;
- Reduced use of chlorine in the tanning cycle;
- Increased biodegradability of the molecules used;
- A 50% increase in penetration of hides by products used to treat leather, resulting in better performance of the finished product;
- A demonstration of the technical/financial feasibility of chrome-free leather tanning; and
- A demonstration that the synthetic processes for dyeing are viable at pre-industrial scale.

Results

Top

Environmental issues addressed:

Themes

Industry-Production - Leather and Footwear
Risk management - Pollutants reduction

Keywords

clean technology, waste use, chemical industry, leather industry
Target EU Legislation

- Waste
- Industry and Product Policy
- Directive 2010/75 - Industrial emissions (integrated pollution prevention and control) (24.11.201...)
- Chemicals & Hazardous substances
- "Regulation 1907/2006 - Registration, Evaluation, Authorisation and Restriction of Chemicals (REA ..."

Natura 2000 sites

Not applicable

Beneficiaries:

Coordinator

Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

Type of organisation

National authority

Description

ENEA (l’Agenzia nazionale per le nuove tecnologie, l’energia e lo sviluppo economico sostenibile) is the Italian National Agency for New Technologies, Energy and Sustainable Economic Development. The ENEA Faenza Technical Unit on Material Technologies (ENEA-UTTMATF) is involved in R&D activities on new materials and technologies, and the transfer of innovation to companies.

Partners

INESCOP(Asociación de Investigación para la industria del calzado), Spain
ICCOMCNR(Chemical Institute of organometallic compounds of CNR), Italy
Tradelda(TRADELDA, S.L.), Spain
NEWPORT(NEWPORT conceria), Italy

Administrative data:

Project reference

LIFE14 ENV/IT/000443

Duration

01-OCT-2015 to 31-DEC -2017
Total budget 975,506.00 €
EU contribution 554,867.00 €


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Project web site
Project's website