OBJECTIVES

The BioNaD project will aim at demonstrating the use of a new category of dyes (resulting from the linkage between a dye and the sugar lactose), as innovative colorants for the leather industry.
The specific technical goals of the project will be verified in a series of actions, demonstrating the dyeing efficacy of naturalised dyes, capable of substituting acid dyes normally used in the dyeing process for leather. Further, bacteria based degradation of dyeing effluent wastewaters will be the downstream goal of the project, in order to allow the recycle of water and thus the reduction of its consumption.

LIFE+ BIONAD

LIFE12 ENV/IT/000352

"Naturalised dyes replacing commercial colorants for environmentally friendly leather dyeing and water recycle"

ACTIONS AND MEANS INVOLVED

The present project aims at innovating the dyeing process for leather, supplanting commercial acid dyes with biodegradable naturalised products. Specifically, the project will target the achievement of:
_ Reliable synthetic processes for dyes from the lab-scale to the kilo-lab scale.
_ Consistent dye penetration into leather, to obtain colour homogeneity.
_ Tailored formulations of different colorants, to achieve the dyeing based on the concept of "trichromy".
_ Efficient dyeing bath exhaustion.
_ No chemical additives in bath wastewaters, coming from the synthesis of the dye.
_ High aesthetical profile of the dyed leathers, as for touch and fullness.
_ Fastness and physical tests to assess leather quality.
_ Finishing protocols to improve the quality of the dyed leather.
_ Compliance with UNI - 10594 and 10826 requirements and with guidelines for "not harmful" classification contained in directive 2002/231/EC.
_ Biodegradability of dyeing effluents, using E. coli bacteria.

EXPECTED RESULTS

The goal is to improve the safety profile of the business for environmental compatibility and the eco-sustainability of leather goods manufacturing to pursue cost-effective strategies. Main results foreseen:
- Elimination (100%) of chemical additives as dispersing agents and surfactants from the synthesis output of dyes.
- Elimination (100%) of auxiliary chemicals which are present in traditional dyes since naturalised dyes do not contain any of those chemicals
- Reduction of the COD and BOD parameters by 40 to 50% of the value of standard dyeing effluents

THE PARTNERS

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