# Campania Hemp fiber

Riferimenti
Tipo di progetto
Gruppo Operativo

Acronimo
CCF

Tematica
Diversificazione e multisettorialità

Information
Time frame
2019 - 2022

Durata
36 months

Partners (no.)
11

Regione
Campania

Comparto
Colture industriali

Localizzazione
ITF31 - Caserta

Costo totale
€411.446,86

Fonte di finanziamento principale
Programma di sviluppo rurale

Programma di sviluppo rurale
2014IT06RDRP019: Italy - Rural Development Programme (Regional) - Campania

Parole chiave
Farming/forestry competitiveness and diversification

Project status
completed

Objectives
The revival of hemp in Italy seems a possible prospect provided that specific supply chains are developed. Within this project, therefore, three sectors have been identified to be economically enhanced:

- Separation and exploitation of the long fiber contained in the bark of particular hemp varieties, using innovative maceration systems and specific machinery/equipment to separate the fiber from the shive.
- Use of shive for the production of packaging materials and mulching films.
- Manufacture of spray paints obtained by using the scraps of hemp fiber combing.

Really, although the CCF project is aimed at creating and enhancing all the products listed above, the main objective remains to encourage the use of long hemp fiber for the production of high-quality yarns.

Activities
As part of the CCF project, the AGRICULTURAL SCIENCE DEPARTMENT in Portici of the University of Naples "Federico II" will carry out a series of trials aimed at optimizing the cultivation techniques and the process of hemp plants maceration, both in the field and in the tank, using selected ad hoc microbial consortia. The CREA-CI will identify the varieties with characteristics suitable for the production of quality textile fiber. The collection of the results of experimental trials, conducted in the farms involved in the project, will be carried out by CREA-IT which will compare two different harvest yards. The CNR-IMAMOTER will manage the operations related to the scutching of hemp, while the CNR-IPCB will ensure the valorization of production waste. In addition, the "SAN LEUCIO" CONSORTIUM will carry out the analyses needed to check the quality of the scutched/combed fiber obtained from the first processing of hemp plants. Finally, the CREA-PB will assess the economic convenience to

operate in the various supply chains to be developed.

Context
Italy has a strong agro-industrial tradition with hemp cultivation. In fact, until the 1930s it was the second largest producer in the world in terms of quantity (after Russia) and the first in terms of product quality. The main areas of hemp cultivation in Italy were Emilia Romagna, Campania, Piemonte, Veneto and Lombardia. When the crop had reached its maximum expansion in our country, the area invested with cannabis exceeded 120,000 hectares with a fiber production that touched 800,000 quintals. Since the 1950s there has been a progressive reduction for the hectares planted with cannabis until hemp has completely disappeared from the farm's production systems. Only since the beginning of the new millennium, in our country there was a return of this crop and there was a return with a few thousand hectares. In some countries, however, the cannabis cultivation has not been completely eliminated, but if Italy wants to successfully reintroduce it in the crop systems, it has to fill several gaps. First of all, it is necessary to think about the updating of agrotechnics and the choice of varieties to be cultivated on the basis of their adaptation in the different cultivation areas and their performances according to the intended use (e.g. textile, food, etc.). To satisfy, therefore, the highlighted needs, a development project was submitted to create a modern and profitable supply chain, with appropriate agronomic techniques. At the same time, this project will also deal with the collection, maceration and scouring phases in order to produce a resistant and high quality yarn, which can allow the production of fine fabrics and at the same time encourage the use of by-products deriving from the separation of the fiber from the rest of the plant.

Partenariato

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Pratice abstract

Description
The project describe innovations that will affect the different phases of the supply chain. The main innovations that will be introduced through the CCF project will concern some process innovations and the promotion of new products obtained by

using the waste obtained by extracting the raw fiber from the hemp sticks. In particular, technological innovations will affect the phase of the collection, which can be made either through the use of typical machines haymaking (mowing of the plants with a double blade bar equipped with a conveyor which has the stems in windrows) or by employing a shredder mows modified (in both cases the plants will be left to dry on the ground before being collected. Another innovation concerns the use of mixtures of microbial strains (DIA microbial collection) with high pectinolytic activity able to preferentially remove the pectin which represents the main cementing constituent of the cell wall of non-woody annual plants such as hemp. These microorganisms are also capable of degrading other binding compounds, such as hemicellulose and lignin, through maceration processes that can take place in water or "in the field" where the plants, after cutting, are left in swaths not wet and not turned over.
A process innovation that will allow the processing of hemp rods by means of a machine that will drastically reduce processing times with greater quality of the extracted fiber and reduced production costs, will also be introduced during the stripping phase. Finally, CNR - IPCB will produce biocompounds containing hemp processing waste mixed with biodegradable thermoplastic matrices and / or recycled polymers and / or hydroplastics for the production of films and mulch paints.