

Natural dyeing - use of natural dyes in natural fibres

CAP funds in Portugal promote natural yarns dyed with natural dyes, as alternatives to imported, synthetic yarns.

EAFRD-funded projects

Location: Mértola, Portugal

Programming period: 2014–2020

Priority: P2 – Competitiveness

Focus Area: Farm performance, restructuring & modernisation

Measures: M16 – Cooperation

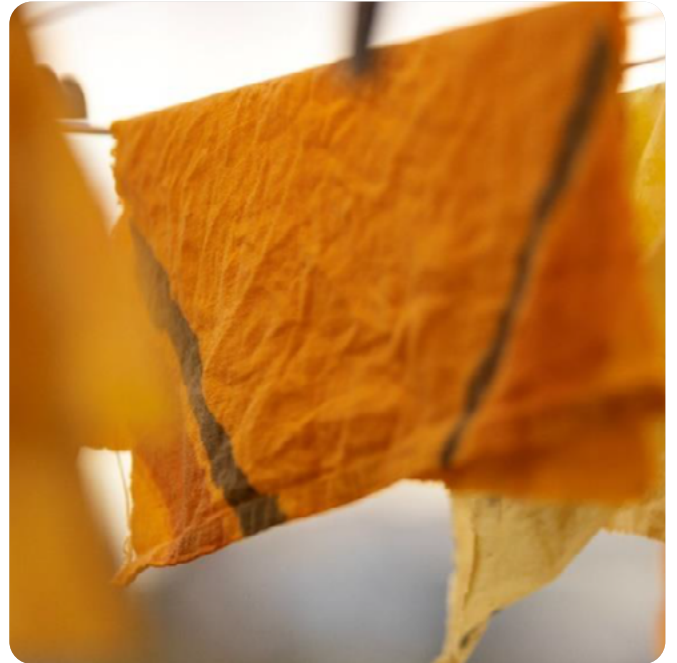
Funding:

Total budget:	346 248 (EUR)
RDP contribution:	259 686 (EUR)
Private/own:	86 562 (EUR)

Timeframe: 01/05/2018 – 31/03/2023

Project promoter: Associação de Defesa do Património de Mértola*

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Summary

An EIP Operational Group sought to gather information about the growing and harvesting of traditional dye plants alongside exploring ways to enhance the economic value of Campaniça sheep wool. This project outlined how naturally dyed yarn manufacturing could create unique products with differentiating characteristics that could boost local and regional economic development.

Project results

- The project tested and evaluated the yield and dyeing properties of several plants that are native to Portugal.
- It also analysed the morphological features of Campaniça sheep wool and its traditional processing cycle.
- Several publications, scientific papers and promotional activities were carried out.

* The project promoter/beneficiary is an EIP-AGRI Operational Group (https://eu-cap-network.ec.europa.eu/operational-groups_en)

Key lessons and recommendations

In order to yield relevant and useful outcomes, research and innovation projects require several stages of preparatory work to be undertaken so that the topic in question can be understood from multiple perspectives at the local stakeholder level (e.g. producers, decision makers, supply chain actors and others).

Context

Despite various native species that could be used to grow, harvest and produce natural plant-based dyes, there is a lack of specific information available in Portugal for those wishing to develop such activities. Further studies are required to fully identify, map, and characterise all relevant plant species across the country and determine the conditions necessary for their successful germination, output, yield and performance as sources of dyestuff in producing naturally dyed yarn.



This EIP project was developed to position the topic of the valorisation of natural fibres on the research agenda, produce more relevant information for the Portuguese textile and dyeing industries, and build a network of national and even international stakeholders in this thematic area.

The Mértola Heritage Defense Association (ADPM) had already developed some activities related to wool and dye plants, but these mostly took the form of workshops based on transmitting traditional practices.



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Objectives

One of the main aims of this project was to demonstrate that dye plant production can be a viable means of diversifying the activities of Portuguese Aromatic and Medicinal Plant producers, making a positive contribution to their economic sustainability.

Another goal was to build on the available information by producing technical and scientific content for the scientific community and a wide range of stakeholders.

Lastly, the project sought to demonstrate a way to add value to a local and highly traditional product: Campaniça sheep wool, which is an autochthonous breed from the south of Portugal - Baixo Alentejo.

Activities

The project operated as a collaboration platform, involving sector stakeholders across four stages:

1. Dye plant production

- Setting up two experimental fields, one in Barcelos (north) and one in Almodôvar (south).

- Testing different plant species in each of the fields.

2. Extraction and processing of dyestuff

- Laboratory extraction of substances that can be used as a dye (or from which a dye can be obtained) from plants produced or acquired within the context of the project.
- Large scale extraction tests followed by dye material preservation tests using lyophilization.

3. Fiber dyeing and quality control testing

- Conducting different dye application tests on Campanian sheep wool.
- Performing analyses according to the colorimetry scale.
- Carrying out light and wash resistance tests.

4. Dissemination and transfer of obtained results to producers, crafters/makers, consumers and the scientific community

- Publishing project outcomes via scientific and national press.
- Organising three meetings to bring together national stakeholders from decentralized regions.
- Organising one dyeing workshop.
- Conducting a benchmarking study.
- Preparing technical documents to identify the properties of the identified plants and dyeing materials.
- Participating in national and international events.
- Developing a project website.



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Main results

- > The project tested and evaluated the yield and dyeing properties of the following plants: *Genista tinctoria* L. (*Fabaceae* family), *Indigofera tinctoria* (*Fabaceae* family), *Isatis tinctoria* L. (*Brassicaceae* family), *Reseda luteola* L. (*Resedaceae* family), *Rubia tinctorum* (*Rubiaceae* family), *Serratula tinctoria* L. (*Asteraceae* family), and *Sorghum vulgare* (*Poaceae* family).
- > The project also analysed the morphological features of Campaņa sheep wool and its traditional processing cycle.

Indicatively, the project produced:

- > five publications in the national press;
- > three publications in technical journals;
- > 12 scientific publications;
- > eight sets of technical data;
- > one Benchmarking study.

The project also participated:

- > in three national thematic meetings;
- > twice in the Cimeira Agro Inovação (2018 and 2022);
- > three times in national fairs;
- > six times in scientific events.

Key lessons and recommendations

- > In order to yield relevant and useful outcomes, research and innovation projects require several stages of preparatory work to be undertaken so that the topic in question can be understood from multiple perspectives at the local stakeholder level (e.g. producers, decision makers, supply chain actors and others). Then, additional desk-based research can be carried out to gather procedures and results from other related projects at national and international levels. All of this helps to frame the topic and define the project's scope in line with its intended beneficiaries' needs and objectives.
- > Regarding the wool, and the overall goal of adding value to this local product, the hard work of involving livestock producers, consumer awareness groups, policy-level representatives, and value chain stakeholders is of central importance and needs to be sustained in the long term.

Additional information:

<https://tinturarianatural.pt/>

www.facebook.com/adpmmertola/videos/263631185993558?locale=pt_BR

