

A new technology of extracting the fixed (non-volatile) oil of *Pistacia lentiscus* for the benefit of rural women



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Keywords

wild harvested

non-essential oils

processing methods

NWFP

Wild Nuts & Berries

Scale

Local



Context

In Tunisia, *Pistacia lentiscus* fixed oil plays an important role as a medicinal product with high potential economic value in forest areas where this oil is extracted.

The traditional extraction methods, practiced by women, are based on non-ergonomic techniques giving a low yield. Mature fruits of lentisk are available for only 2-3 months in the year. The extracted oil is also characterized by a low quality affected by direct and repeated exposure to high temperature. All these conditions, added to the economic role of this oil, led us to look for a more appropriate and practical extraction method. In this context, researches were conducted to improve the traditional method by a new and reliable one.



Objective

This work aims the improvement of lentisk oil extraction in order to enable rural women to improve their working conditions and their incomes through the sale of this oil.

On the other hand, this work aims to make women aware of the importance of conserving the natural heritage of their region and, to encourage them to take positive ownership of their environment.



Results

The new technology of extraction allowed the improvement of both oil yield and quality. Oil yield was improved from 5% (of fruit weight) using the traditional method to 12% using the new one.

The new method is more ergonomic and allows saving time. The grinding of fruits, instead of being achieved by traditional grinding stone, is performed by a chopper which is common in almost all households. The simplification of work using the chopper generated a better grinded paste.

Mixing in double boiler allowed protection of the phenolic compounds of the oil against thermal degradation. The quality of the oil is therefore improved...

Without need to let the paste to rest for a whole night at least, it is directly introduced into the press, which leads to extract the maximum of the oil contained in the paste.



Recommendations

Fruits of *Pistacia lentiscus* should be harvested in mature period. (November-December) in order to optimize oil yield. Oil yield is low before this period (September).

The harvesting method is also important to preserve the resource. The fruits must be harvested directly from the plant without tearing the branches.

If the branches are cut, the fruit yield will be reduced for the year after.

To preserve quality, oil should not be exposed directly to fire, during extraction.

After extraction the oil must be put in opaque glass bottles to reduce the oxidation caused by light. These bottles have to be put in a cool place to minimize the effect of heat.



Impacts and weaknesses

The new technology allowed the improvement of both social and economic conditions. It ensures ergonomic working conditions, improvement of yield and quality of the produced oil and especially improves its price in the market.

The main problem for women is the marketing of their product, which remains at the local and national level.

Our research allowed better income for rural woman, the price of lentisk oil has been improved. It is now more expensive than other edible oils (100 TD/liter) and there is a risk of fraud (mixing with olive oil for example) which is difficult to detect because of the strong smell of lentisk oil. This risk could reduce the future chain value of this NWFP.



Future developments

To ensure good oil quality and minimize fraud attempts, a method of detection of mixed oil is highlighted.

To extend the period of lentisk oil extraction, it is also important to think about the conservation process of the fruits. A conservation method preserving the quality of the extracted oil should be determined.

The quality of the oil during the conservation has to be studied. It is important to control the factors responsible for the degradation of the oil during this period.



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Further information

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About INCREDIBLE Project

INCREDIBLE project aims to show how Non-Wood Forest Products (NWFP) can play an important role in supporting sustainable forest management and rural development, by creating networks to share and exchange knowledge and expertise. 'Innovation Networks of Cork, Resins and Edibles in the Mediterranean basin' (INCREDIBLE) promotes cross-sectoral collaboration and innovation to highlight the value and potential of NWFPs in the region.



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