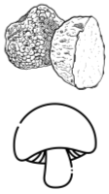
FOREST4EU

ITHub 4 – Non-Wood Forest Products



FOREST4EU partner: Cesefor

OG: ACREMA

OG's country: Spain

Type of Innovation: Process

Mechanised resin extraction method

Introduction

Although the practices used in resin extraction have been improving in yield and quality, the extractive method remains the same: collecting the resin that emanates from a bare wood surface as a result of incisions, called picks, made repeatedly over time on the surface of the tree. With the development of mechanised extraction methods, the aim is to obtain a raw material with greater purity, less physical effort and skill in execution, and good yields

Approach and main results

The method tested in this OG is the so-called borehole at height. This method, which has existed for decades but has not yet been applied in Spain, has been tested and improved in this project. The methodology consists of drilling 3 simultaneous holes of 1.6 cm in diameter and 12 cm deep, with an inclination of 10 gr with tangential orientation (not radial), leaving a horizontal space between holes of 10 cm and a vertical space of 2 cm. For the borehole method, three extraction bags were used simultaneously, which were raised in height each time the picks were refreshed in an upward direction, with a periodicity of 14 days between picks. The results show that the borehole method produced 8.5 % more P. pinaster and 15 % more P. radiata than the other methods tested (traditional method and surface drilling method). The Borehole method is suitable for stands destined for chipping wood, and the yields obtained are very interesting, even without the application of stimulants. Stimulants have increased resin production by 70 % for traditional pica and circular notching, but only by 40 % for borehole. The high borehole productions stand out, especially in the non-stimulated trees, reaching productions of 1,796 g for P. pinaster and 1,162 g for P. radiata. The increase in production in 2022 compared to 2021 is very small for the borehole method, from which it can be deduced that the borehole wood penetration production system has a smaller cumulative effect per season and/or is less influenced by the different environmental conditions between seasons. For example, the production increases for Borehole, depending on the species and extraction technology, range between 8 and 10% in 2022, while for the traditional and circular notching system the increases are 34.5% and 30.22% respectively in 2022.

Lessons learned

The generation of innovation in resin extraction processes requires long-term trials and a large number of individual specimens (trees) studied. Resin production is affected by numerous variables, including climatic, edaphic, dasometric and, of course, human factors. This means that in order to extrapolate an innovation in this field to different scenarios, it requires longer study periods than those currently provided by the OG. On the other hand, the complexity of scientific and technical cooperation has become manifest. Good communication of the real interests of the parties is essential for the success of these processes. On the scientific side, data collection in the field, which is carried out by the tapping workers, as well as the execution of the work, is essential to scientist work. Without reliable data, all research results will be useless. On the other hand, the researchers developing the experimental designs must know and communicate frequently and closely with the tapping workers or the designs cannot be realistically implemented

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

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