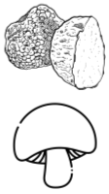
FOREST4EU

ITHub 4 – Non-Wood Forest Products



FOREST4EU partner: Cesefor

OG: ACREMA

OG's country: Spain

Type of Innovation: Service

Interactive Pinus pinaster resin production simulator

Introduction

This innovation is a dynamic model to estimate the accumulated resin yield during the resin production season. Within the ACREMA GO, a decision support system has been developed which consists of two parts, one which is an interactive simulator with the production models and the other which is a web sig with the auxiliary variables and resin production maps.

Approach and main results

In southern Europe, especially in Spain and Portugal, maritime pine resin is one of the main non-timber forest products. After suffering a crisis at the end of the 20th century, it is currently a growing sector. In Spain, depending on the area, the management of pine forests is one of the pillars of the national bioeconomy. In addition to timber production, these forests may be oriented towards resin production only, or resin production as a complementary activity to timber production. In both cases, as in any sector, it is essential to have tools to manage and anticipate production, especially in the new context of the bioeconomy. The data used were obtained from the macroresination tests of the project itself, which were subsequently processed through machine learning algorithms assembled to develop the predictive models of resin production, specific for the different areas, methods and pastes. These models were implemented in a web tool accessible to all users that allows them to locate their plot, choose the methods and pastes they wish to use, enter the number of trees and the dasometric variables of their stand and obtain an estimate of the resin production of their plot. In addition, the production maps elaborated in the interactive application and based on the IFN IV P. pinaster stands, as well as the auxiliary climatic variables used in the adjustment of the models, can be consulted in the web sig. For this purpose, the maximum resin potential was defined as the estimated maximum production that a territory could produce according to the legal restrictions in force if all the Pinus pinaster stands were resined. We used the estimates of the largest stands and dasometric attributes of P. pinaster from the IV National Forest Inventory (IFN). For the Autonomous Regions of Galicia and Asturias, trees with a normal diameter equal to or greater than 25 cm were filtered out; in the case of the provinces of Castilla y León, the normal diameter was 20 cm. As normal diameter the value of the diameter class was used and as total height the value of the estimate of the mean height weighted according to the diameter class was used. With the data

analysed, maps were drawn up for each area of action and, depending on the extraction method and the stimulating pulp used, the maximum yields obtained were indicated.

Lessons learned

The results of this study make it possible to add the cumulative annual resin yield of maritime pine to the processes that the Bertalanffy-Richards equation is capable of modelling. Furthermore, the great versatility of these s will be of great use to the forest manager in optimising the annual harvesting season as well as for the scientific community.

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

erikamc@foresin.com

https://resim.proepla.com/

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