POPULATION AGE STRUCTURE OF A MEDITERRANEAN OAK COPPICE WOODLAND GROWING IN CYPRUS

Panayiotis Chrysanthou^{1*}, Petr Maděra¹, Alan Crivellaro², Dimitrios Koutsianitis³, Dimitrios Sarris⁴, Nikolaos Grigoriadis⁵, Petros Tsioras⁶, Martin Šenfeldr¹, Tomáš Kolář¹, Daniel Volařík¹

¹Faculty of Forestry and Wood Technology, Mendel University in Brno, Czech Republic ²Department of Geography, University of Cambridge, United Kingdom ³Department of Forestry, Wood Science & Design, University of Thessaly, Hellenic Republic ⁴Department of Biological Sciences, University of Cyprus, Republic of Cyprus ⁵Forest Research Institute, Hellenic Agricultural Organization-Demeter, Hellenic Republic ⁶Department of Forestry and Natural Environment, Aristotle University of Thessaloniki, Hellenic Republic

* Corresponding author's E-mail: panos c82@hotmail.com

Localities with coppice woodlands preserved up to these days are important culturally-historical traits and integral part of landscape. Recent scientific reports provide an important basis for the evaluation and improvement of their ecological concepts. A dendroflora with such particular features in Cyprus is the endemic oak Quercus alnifolia Poech. This oak, occurs only on the Troodos Ophiolite Massif and is the dominant species of dry habitats in pine and maquis woodlands.

The objective in this study was to reveal the population age structure of the Quercus alnifolia stored coppices. For this purpose, we used tree-ring science as a proxy

based on the limited existing knowledge in Quercus alnifolia wood anatomical structure. Until now, two unsuccessful attempts held 100 and 40 years ago respectively (Imperial Institute of the British Empire & Commonwealth Forestry Institute of the University of Oxford). In order to achieve the precise dating of the species, wood micro-sections were prepared from 162 samples which were collected from Paphos Forest in the form of disks. Only the most dominant and undamaged stems were selected out of 100 different coppice stools in an area of 2,2 ha.

The study showed that the samples had a maximum age of 150 years with an average of 108 years, thus having an average stem diameter and stem height of 13 cm and 6 m respectively. In terms of age structure, 67% of the population was more than 100 years with an average stem diameter and stem height of 14,3 cm and 6,5 m respectively, while only the 11% of the population was less than 80 years with an average stem diameter and stem height of 10,6 cm and 5,7 m respectively. These results are in identification with specific historical factors which outlined the critical characteristics in the determination of the present old growth coppice structure of this ecosystem: the establishment of the first provisions on Forest Management in 1881 and the final regulation of grazing in the 1940s by the British.



tains



TWIG ANATOMY Groups of sieve tube present. Scleren-

chyma cells in phloem and in cortex Fibers grouped. Sclereids scattered or irregularly dispersed, and in groups. Groups of fibers and sclereids in a tangential row. Prismatic crystals and crystal druses present. Phellem hom geneous.

Mean tangential diameter of earlywood vessels less than 20 µm. Aggregate rays absent.

Pith star-shaped. Cell dimorphic. Prismatic crystals and crystal druses present. Pits in transverse and in longitudinal cell walls. Vascular bundles clearly separate. Tracheary elements of metaxylem in distinct radial rows, Axial cells in regular rows (radial sec tion).





SUBJECT

THE OFFICE OF THE

PRINCIPAL FOREST OFFICER. CYPRUS, 6th March, 1922.

Sir,

In connection with the regular testing of the strength & other properties of the timber of the Empire, I have the honour to send you a sample, (1 cwt in weight) of Cyprus Dwarf Oak, Ladja, Quercus Alnifolia.

Information is desired as to its strength (tensile) flexibility & any other test which can be made.

As the wood has a large number of medullary rays, the grain is pretty, so it is especially desired to know whether the wood has a value for turnery work, (as done by amateurs).

The size of the tree varies from 4" - 12" in diameter & 6 - 10 feet high. If there is a demand for this wood about 50 tons could be shipped each year. The cost would be approximately £6 per ton F.O.B. Famagusta.

> I have the honour to be, Sir, Your obedient Servant,

> > 4. Muni

Principal Forest Officer.

The Director The Imperial Institute London S.W.





ACKNOWLEDGEMENT

THIS STUDY WAS SUPPORTED BY THE INTERNAL GRANT AGENCY OF MENDEL UNIVERSITY IN BRNO (CZECH REPUBLIC), THE CYPRUS' DEPARTMENT OF FORESTS (REPUBLIC OF CYPRUS) AND THE SCHOOL OF FORESTRY AND NATURAL ENVIRONMENT, ARISTOTLE UNIVERSITY OF THESSALONIKI (HELLENIC REPUBLIC).

ldf.mendelu.cz

MENDELU Faculty of Forestry and Wood Technology