

BOOK OF ABSTRACTS

NUORO
16th — 20th
MAY 2022



6th EUROPEAN AGROFORESTRY CONFERENCE

*Agroforestry
for the Green
Deal transition.
Research and
innovation towards
the sustainable
development
of agriculture
and forestry.*



MONDAY

16th MAY

Chamber of Commerce, via Papandrea - Nuoro
ROOM_B

TOPIC 1

Agroforestry and the environment

T1.3 - Landscape planning and management

Chair - Felix Herzog, Agroscope, Switzerland

- 14:30** **O_1.3_32 Drivers of soil erosion in a Mediterranean agrosilvopastoral system: A comparative assessment of RUSLE model predicted value and perceived soil erosion risk in southern Tuscany (Italy)**
Stefano De Leo, Francesco Anecchini , Heitor Mancini Teixeira, Martina Occelli, Martina Re, Alberto Martino
- 14:45** **O_1.3_33 Recent land cover changes affecting agroforestry systems in Extremadura (SW Spain): An intensity analysis at regional and farm scales**
Joaquin Francisco Lavado Contador, Estela Herguido Sevillano, Susanne Schnabel, Anthony Gabourel Landaverde, Jesus Barrena González
- 15:00** **O_1.3_34 UAV-Based Remote sensing technique to detect and analyze Ink disease in a chestnut orchard using high resolution multispectral imagery**
Lorenzo Arcidiaco, Angela Frascella, Giovanni Emiliani, Roberto Danti, Sara Barberini, Antonietta Mello, Francesco Venice, Gianni Della Rocca
- 15:15** **O_1.3_35 Recovery of cork forests and enhancement of by-products**
Giovanna Sala, Rafael da Silveira Bueno, Emilio Badalamenti, Andrea Laschi, Tommaso La Mantia
- 15:30** **O_1.3_37 Agroforestry systems in Portugal: is it possible to bring more biodiversity to traditional cropping systems towards sustainability?**
Henrique Santos, Joana Grácio, Leonardo Collier, Rita Bernardo, Rossano Filippini, Sara Rodrigues
- 15:45** **O_1.3_150 Common walnut (*Juglans regia* L.) - a promising tree species for agroforestry systems**
Christopher Morhart, Zoe Schindler, Jonathan Sheppard, Rafael Bohn Reckziegel, Hans-Peter Kahle, Thomas Seifert
- 16:00** *Coffee break*

Recovery of cork forests and enhancement of by-products

EURAF 2022
Agroforestry for the Green Deal transition. Research and innovation towards the sustainable development of agriculture and forestry

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Theme: Landscape planning and management

Keywords: forest management, decline, recovery cork oak forests, *Quercus suber*

Abstract

Cork oak (*Quercus suber* L.) is a tree species native to the western Mediterranean Basin (EUFORGEN 2019). Cork oak forests are human-shaped ecosystems that have to be managed to be preserved in a long-term perspective. Cork oak stands range from closed forests to open woodlands, provide high ecosystem services, mainly through cork production, support high biodiversity and provide carbon storage and water regulation services. Due to their important ecological role, these ecosystems are listed in the European Habitats Directive (Habitat 9330: *Quercus suber* forests, EEC, 1992).

In the last years, especially in Italy, cork oak stands are undergoing a relevant regression due to the decline of traditional management. The most extensive cork oak forests occur in Sardinia, followed by Sicily, Tuscany and Calabria. In Sicily, this tree covers about 19,000 ha (about 7% of total regional forest cover), from sea level up to 1,000 m a.s.l (Camerano et al. 2011). Also in this region, the abandonment of traditional management and recurrent wildfires has caused a progressive decline of cork oak forests and widespread degraded conditions.

In this work, we analysed the recovery of a cork oak forest through the improvement of management in a study area where cork oak is mixed with stone pine (*Pinus pinea* L.). To improve the vitality of cork oak and increase cork production, the thinning of the pine stand was carried out. The silvicultural treatments were carried out without a total removal of pine trees and uncovering of the soil but selecting the pine trees that effectively hindered the cork tree. In the future, the response of the forest system will be evaluated in terms of natural regeneration and other cautious, continuous and capillary interventions may be proceeded.

After felling, trees were processed in 2-meter length assortments while thin material, tree tops and branches were chipped and left on the ground.

We collected data on: 1) site conditions (topography, soil conditions and understory vegetation), 2) stand characteristics (adult tree layer, species composition, density, structure) and 3) time for felling and logging the stone pine. We also evaluated the quantity of the wood material obtained. This study provides technical recommendations that can support sustainable management and restoration efforts in Mediterranean cork oak landscapes. This type of management in addition to produce cork will allow high level of biodiversity and socio-economic benefits.



Figure 1. Example of competition between cork oak and pine.

References

Camerano P, Cullotta S, Varese P (2011) Strumenti conoscitivi per la gestione delle risorse forestali della Sicilia. Tipi forestali [Knowledge tools for the management of forest resources in Sicily. Forest types]. Assessorato Territorio e Ambiente Regione Siciliana, Litograf Ed. s.r.l., Città di Castello, Perugia, Italy, pp 192. [in Italian].

EEC (1992) Council Directive 92/43/EEC of 21 May 1992, on the conservation of natural habitats and of wild fauna and flora. Off. J. Eur. Commun. L206, pp 7–50.

EUFORGEN (2019) Distribution map of cork oak (*Quercus suber*). European Forest Genetic Resources Programme - EUFORGEN, Rome, Italy, web site. [online] URL: <http://www.euforgen.org/species/quercus-suber/>



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