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L'UNIVERSITÀ AL CENTRO

5TH EUROPEAN AGROFORESTRY CONFERENCE

17th - 19th MAY 2021 - ITALY

BOOK OF ABSTRACTS

**Agroforestry for the transition towards
sustainability and bioeconomy**



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OVERALL PROGRAMME

Agroforestry for the transition towards
sustainability and bioeconomy

3.3 MANAGING MEDITERRANEAN AGRO-SILVOPASTORAL SYSTEMS - ROOM D

CHAIRS: **Sonja Kay**, *Agroscope, Federal Department of Economic Affairs, Education and Research EAER, Switzerland*; **Giovanna Seddaiu**, *Department of Agricultural Sciences, and Desertification Research Centre, University of Sassari, Italy*

17.50-18.00 (O3.3_6_265) Shrub encroachment combines with drought and fire to decrease Quercus suber tree resilience in silvopastoral cork oak ecosystems

Maria C. Caldeira, Xavier Lecomte, Raquel Lobo-do-Vale, Christiane Werner, Miguel N. Bugalho

18.00-18.10 (O3.3_7_338) Does livestock grazing affects soil properties in an oak silvopastoral system? Results from a traditional system in Western Greece

Theodoros Notis, Andreas Papadopoulos, Stavroula Galanopoulou, Anastasia Pantera

18.10-18.20 (O3.3_8_345) Adaptive Multi-Paddock model: a sustainable management practice for Mediterranean silvopastoral systems

Antonio Frongia, Antonio Pulina, Marco Cuboni, M.aria Carmela Caria, Tore Pala, Daniele Nieddu, Daniele Dettori, Costantino Masala, Simonetta Bagella, Antonio Franca, Pier Paolo Roggero, Giovanna Seddaiu

18.20-18.30 (O3.3_9_27) The agroforestry in the new Algerian forest strategy: state of art, socio-economic importance and future perspectives

Sonia Marongiu, Mohamed Abes, Assia Azzi

18.30-18.50 Discussion

18.50 Closing the first day

PROGRAMME - 18TH MAY 2021

14.00 **PLENARY SESSION - ROOM A**

14.00 Connection

14.10 Welcome from the EURAF board

Judit Csikvari, *Zsork Foundation, Hungary*; **Rico Huebner**, *Chair for Strategic Landscape Planning and Management, Technical University of Munich, Germany*

14.20 Plenary session II

CHAIRS: **Maria Rosa Mosquera**, *Crop Production and Project Engineering Department, University of Santiago de Compostela, Spain*

Agricultural heritage systems and agroforestry

Mauro Agnoletti, *CULTAB – Laboratory for Landscape and Cultural Heritage School of Agriculture, University of Florence, Italy*

4.2 AGROFORESTRY AND RURAL TOURISM - ROOM C

CHAIRS: Antonio Trabucco, *Impacts on Agriculture, Forests and Ecosystem Services Division, Foundation Euro-Mediterranean Center on Climate Change (CMCCItaly); Fabien Liagre, Research development department, Société coopérative et participative spécialisée en agroforesterie, France*

17.10-17.20 (O4.2_1_65) Visual appreciation of tree-based intercropping systems by rural residents in Quebec, Canada

Geneviève Laroche, Gérald Domon, Alain Olivier

17.20-17.30 (O4.2_2_93) Developing garden tourism and services - case of Garden Pearls Network in Estonia and Latvia

Marit Piirman, Tatjana Koor, Kandela Õun

17.30-17.40 (O4.2_3_293) Agroforestry in the mountainous area of Eritania (Greece)

Vasiliki Lappa, Anastasia Pantera, Andreas Papadopoulos

17.40-17.50 (O4.2_4_314) Olive trees and iris flowers in Tuscany: an agroforestry system to exploit rural tourism

Francesca Camilli, Valentina Marchi

17.50-18.10 Discussion

1.4 AGROFORESTRY AND THE LANDSCAPE - ROOM D

CHAIRS: Teresa Soarez David, *Instituto nacional de investigacao agraria e veterinaria, Portugal; Andrea Pisanelli, National Research Council, Research Institute on Terrestrial Ecosystems, CNR-IRET, Italy*

17.10-17.20 (O1.4_11_249) The decline of the cork oak growing in Sicily is accompanied by the loss of the functions proper to agroforestry systems

Emilio Badalamenti, Giovanna Sala, Rafael da Silveira Bueno, Tommaso La Mantia

17.20-17.30 (O1.4_12_264) Silvopastoralism and potential use in Europe

Jose Javier Santiago-Freijanes, Francisco Javier Rodríguez-Rigueiro, Vanessa Álvarez-López, Tamara Isabel Franco-Grandas, Nuria Ferreiro-Domínguez, Antonio Rigueiro-Rodríguez, María Rosa Mosquera-Losada

17.30-17.40 (O1.4_13_289) Innovative beef cattle grazing systems for the restoration of abandoned lands in the Alpine and Mediterranean mountains (iGRAL)

Giampiero Lombardi, Maria Sitzia, Marcello Verdinelli, Giovanna Seddaiu, Simonetta Bagella, Michele Lonati, Marco Acciaro, Margherita Addis, Luciano Gutierrez, Lorenzo Salis, Stefano Arrizza, Maria Leonarda Fadda, Stefania Bagella, Marco Pittarello, Ginevra Nota, Maria Carmela Caria, Giovanna Piga, Giovanni Riviaccio, Marco Cuboni, Alberto Tanda, Pier Paolo Roggero

17.40-18.00 Discussion

The decline of the cork oak growing in Sicily is accompanied by the loss of the functions proper to agroforestry systems

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Abstract
Corresponding Author:
tommaso.lamantia@unipa.it

Emilio Badalamenti¹, Giovanna Sala¹, Rafael da Silveira Bueno¹, Tommaso La Mantia¹

¹ University of Palermo, Department of Agricultural, Food and Forest Sciences (SAAF), Italy, emilio.badalamenti@unipa.it, giovanna.sala@unipa.it, tommaso.lamantia@unipa.it, rafael.dasilveirabueno@unipa.it

Theme: Agroforestry and the landscape

Keywords: agriculture, Mediterranean vegetation, *Quercus suber*, Sicily, Wildfires

Abstract

The cork oak (*Quercus suber* L.) is one of the most important tree species in the Mediterranean basin, where it covers more than 2 million hectares, almost 1.5 million of which in Europe and 700,000 hectares in North Africa. Among evergreen oaks, *Quercus suber* stands out for the variety of cultural systems in which it has been successfully employed, including typical agroforestry systems, for the main purpose to produce cork for wine stoppers. Accordingly, a wide range of ecosystem services may be associated to cork oak, including the preservation of biodiversity, carbon sequestration and forage production. In the Mediterranean, the cork oak represents a key species for many natural and seminatural landscapes and habitats, as well as playing a prominent role for the economic and social development of local communities. The importance for the conservation of biodiversity at a European level is largely acknowledged being the cork oak the dominant tree species of the Habitat 6310 "Dehesas with evergreen *Quercus* spp.", thus included in the Habitat Directive 92/34/EEC. However, there is increasing concern about the long-term conservation of both *Quercus suber* forests and *Quercus suber* agroforestry systems throughout the distribution range. In fact, a range contraction of *Quercus suber* natural distribution is expected in the next decades, especially in the southern edge and at lower altitudes of species' natural distribution range.

Many factors have been invoked to explain the on-going process, among which overgrazing, soil pathogens and land-use changes are prominent. Conversely, the lack of natural regeneration has been observed both in the Iberian Peninsula and Sardinia agroforestry systems. The aim of our work was to assess the variation in time of the area covered by the cork oak in Sicily. Different bibliographic sources were consulted, of course including the available National and Regional forest inventories. Although some discrepancies in inventory and historical data were found, an increasing trend of the area covered by the cork oak in Sicily would seem to have occurred. Notwithstanding this, a parallel worsening of the conservation status of most of these stands has been at the same time observed at a regional level. The frequent wildfires (Figure 1) and the progressive abandonment of the cork oak cultivation have been suspected to play a major role in the current situation.

It must be kept in mind that in many areas the cork oak has been favoured by man against other tree species, so the cork oak stands are in effect secondary forest stands, which rely on continuous human management. Hence, the clear decline observed is increasingly compromising the ability of the cork oak to provide ecosystem services for the community, although the area has increased. Particularly, the degradation processes may cause the loss of the ecosystem functions proper to the cork oak agroforestry systems as they are very simplified. Thus, the value linked to the production of cork is lost, along with the pasture value, and last but not least the landscape value. In this perspective, the management of cork oak forests in Sicily should be promoted, for instance through the adoption of specific sustainability indicators and fostering quality productions. Active interventions and sound restoration practices are urgently needed if we are to preserve the valuable social, ecological and landscape value of *Quercus suber* stands occurring in Sicily.



Figure 1. A burned cork oak stand in Sicily.