

**S11-P5**

**Risk assessment and ecological sustainability of cork oak in Montado Ecosystems – the RESCOE project**

Costa, S.R.<sup>1</sup>, Freitas, H.<sup>1</sup>, Abrantes, I.<sup>2</sup>, Cravador, A.<sup>3</sup>, Almeida, M.T.M.<sup>4</sup>

<sup>1</sup>Centre for Functional Ecology, Department of Life Sciences, University of Coimbra. P.O. Box 3046. 3001-401

Coimbra, Portugal <sup>2</sup>IMAR-Coimbra, Department of Life Sciences, University of Coimbra. P.O. Box 3046. 3001-401

Coimbra, Portugal <sup>3</sup>University of Algarve, Faculty of Science and Technology, Campus de Gambelas, 8005-139 Faro, Portugal

<sup>4</sup>Molecular and Environmental Biology Research Centre, Department of Biology, University of Minho, Braga, Portugal

The Montado, a low-disturbance agro-silvo-pastoral ecosystem in which cork oak (*Quercus suber*) is exploited for cork production, has been declining considerably since the 20th century, under not yet fully explained circumstances. Our research will focus on biotic and abiotic factors that could play a role in cork oak decline, and their interactions. This includes pathogens (e.g. *Phytophthora* spp.) and abiotic factors (e.g. drought) that have been shown to have an important contribution, and plant parasitic nematodes, that have been shown to be important in shaping plant distribution in other ecosystems.

The role of cork oak antagonists will be assessed in the field and in controlled experiments, and the putatively beneficial role of mutualists (ectomycorrhizal fungi) will be evaluated. Other organisms with an unknown role will also be investigated: the associated flora that can either act as reservoir for, or suppress, pests and diseases; and endophytic bacteria that could either have a pathogenic role in cork oak, or promote tree health and growth.

The proposed work will provide a much needed framework of knowledge on the ecological interactions above- and below-ground involved in cork oak decline, put it into context of predicted land use and climate change scenarios, and thereby supply information for land management policy and decision-making bodies.