



MEDECOSXIII

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MEDITERRANEAN ECOSYSTEMS
INTERNATIONAL CONFERENCE

“Crossing Boundaries across Disciplines and Scales”



October 6-9, 2014
Olmué, Chile

POSTER**Fire-induced bark beetle attacks in Mediterranean cork oak forests: which factors drive host selection?****Catry Filipe X.¹, Moreira Francisco¹, Rego Francisco¹, Branco Manuela² & Sousa Edmundo³**

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Abstract

Cork oak *Quercus suber* forests, which are of great ecological and economic importance in the Mediterranean Basin, have been increasingly affected by wildfires in the last decades. The occurrence of wood-boring insect attacks following fire may be a critical factor affecting tree survival and forest recovery. The ambrosia beetle *Platypus cylindrus* has been considered the major insect pest capable of attacking and killing adult *Q. suber* trees, but there is no information about host selection and colonization behavior of the beetle in burned oak stands. After a wildfire that occurred in July 2013 in central Portugal, an apparent outbreak of bark beetles (dominated by *P. cylindrus* but also with *Xyleborus* sp.) was observed. In order to evaluate the extent and pattern of the attacks we monitored nearly 500 *Q. suber* trees, including burned and unburned individuals. Early 2014, we assessed several tree and site characteristics, as well as the presence of recent bark beetle activity by registering the frequency of entrance holes in each tree. No sign of bark beetle activity was found in unburned trees. In contrast, 47% of burned oaks were attacked; among attacked trees, nearly 30% were slightly attacked (1-30 holes/m²), 18% moderately (31-60 holes/m²), and 53% severely attacked (>60 holes/m²). Nearly 65% of the attacked trees presented no regeneration sign, and only 12% had crown regeneration. We used regression models to investigate the factors driving host selection by bark beetles in burned cork oaks. The presence of bark beetles in burned trees was positively related to tree diameter, fire severity, and pre-fire trunk wounded surface, and was negatively related to bark thickness (related to management/exploitation status) and distance to the nearest unburned area. These results may contribute to help estimating the risk of bark beetle attacks and improving post-fire management in cork oak forests.
