

## POST-FIRE REGENERATION OF *QUERCUS* SP. COMMUNITIES IN ALTO ALENTEJO, AFTER SEVERE WILDFIRES (YEAR 2003)

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Fire is an ecological constant in Mediterranean ecosystems, playing an important role in successional processes and vegetation dynamics. In mainland Portugal, it is possible to distinguish different fire regimes, which must be study independently. Since the regeneration patterns are complex and influenced by several factors, like local biophysical characteristics, land uses, fire behaviour and other disturbance factors, they are hard to understand. However, there is a lack of information about the vegetation's post-fire behaviours in Southern Portugal, particularly in areas where the fires are not so frequent. The Region of Alto Alentejo has suffered great wildfires in 2003. In consequence of their high severity and extent, plant communities usually not very susceptible to this factor, have been burned. So, the purpose of this work was to establish the post-fire dynamics in three ecosystems dominated by *Quercus* sp. (*Q. pyrenaica*, *Q. suber* and *Q. rotundifolia*), in such burned areas of Alto Alentejo, using phytosociological methods. Some plots that have burn in 2003 were sampled, and compared with other relevés from areas where the natural vegetation is well conserved. All plant *taxa* were characterized according to their regeneration mode and life forms. A floristic analysis was performed. The composition, abundance and diversity of the plant communities were studied. Relevés, allow establishing the regressive or progressive successions. Results suggest that not all areas tend to approach the reference vegetation's composition, mainly the communities of *Quercus pyrenaica* (*Arbuto unedonis-Quercetum pyrenaicae*). Scrublands of *Phillyreo angustifoliae-Arbutetum unedonis* or *Genisto falcatae-Adenocarpetum anisochili*, which are common in this region, were not found in the burnt area, being substituted by monospecific formations of *Cytisus multiflorus* that belong to the association *Cytisetum multifloro-eriacarpi*. The association *Vincetoxicum nigri-Origanetum virentis*, typical of shady fringes, also was not identified. Besides the fire, the *Q. pyrenaica* succession may have been affected by the cumulative effect of several disturbance factors, such as tree cutting, fire use to promote pastures, mobilization of the soil for agricultural uses, frequent sowing followed by abandonment, and overgrazing. The formations of *Q. suber* and *Q. rotundifolia* show signs of slow recovery of the serial succession, when compared to the reference areas.

**Keywords:** Fire, vegetation, regeneration, *Quercus* sp., Alto Alentejo, Portugal.