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THE ECOLOGY OF SOME CORK-OAK (*QUERCUS SUBER* L.) STANDS IN NW SICILY.

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The uneven presence of the cork oak (*Quercus suber* L.) within its distribution range seems to be affected not only by its climatic requirements but also by rather specific edaphic needs. In fact, most of the known populations throughout the Mediterranean area thrive on acidic soils deriving from metamorphic or volcanic rock outcrops. However, some Italian populations of this species behave as if they were independent on the chemical and physical characteristics of the substrate, e.g. growing on calcareous soils, which are considered less suitable. This is the case of some populations in central Italy (Latium) and NW Sicily (Trapani Mts. and Palermo Mts.). A multidisciplinary investigation carried out on Palermo Mts. allowed: 1) to update the knowledge on the distribution of *Q. suber* in NW Sicily; 2) to verify that those populations are autochthonous; 3) to analyze and describe the soils and the plant communities linked with cork oaks; 4) to detect the ecological factors which could explain their local adaptation to calcareous soils; 5) to show the ecological, structural and dynamic role played by this species within the natural vegetation of Palermo Mts. The local presence of *Q. suber* stands may depend on three (perhaps synergic) factors: 1) the high fire frequency, which indirectly favours *Q. suber* by biasing the progressive succession towards the most common patterns of woodland, i.e. *Q. ilex/Q. pubescens* s.l. mixed forests; 2) the peculiar biogeochemistry of local soils; 3) the erosion that intermixed different parent materials.

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