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ORNAMENTAL TREES WITH ALLERGENIC POLLEN IN URBAN E-PLANNING.
THE CASE OF PLANE TREES (PLATANUS SPP) IN A MEDITERRANEAN ENVIRONMENT

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ABSTRACT

Ornamental trees play an outstanding role in any environmental urban designing. These trees are chosen because of their tolerance to water shortage and high levels of pollution, rapid growth and development of wide shadow. In spite of their growing advantages, the pollen of ornamental trees is a major cause of respiratory allergy in Western countries. The aim of this study is to assess this issue regarding the pollen of *Platanus* and find the best way to minimize the allergenic disadvantage through several strategies: continuous monitoring of the air using volumetric spore traps, geo-location of sources in public streets, avenues, squares, etc., integrating source distribution and pollination in a model and provide a summarized information to citizen through mobile applications (app). The study was performed in five cities of SW of Spain: Badajoz, Cáceres, Plasencia, Don Benito and Zafra, each one with a volumetric spore trap that captured airborne pollen continuously over the year. Plane trees pollination period lasted around 15-20 days mainly in March, reaching daily pollen concentrations often over 100 pollen grains per cubic meter. There was an hourly pattern with significantly variation between night and daytime hours. Differences between pollen stations were correlated with the number of plane trees and closeness to spore traps. Values of potential allergenic areas and levels were established

taking into account geo-located sources distribution and pollen concentrations. This type of app could be very interesting for customizing allergic treatments and prevention measures in the future, according with the allergenic plant for each sufferer.