

calculate Allergenicity index assessing their maturity degree.

Allergenic potential for a new garden in river banks of Badajoz (SW Spain)

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Introduction: Urban green areas may be considered beneficial spaces but also potential areas as sources for allergenic airborne particles. Assessing the allergenic potential for public gardens is a valuable task for urban landscape design, taking into account pollination type, pollination length and allergenic pollen potential for the species used. This work aims to calculate the allergenic index from a recent public garden built in Badajoz.

Material and Methods: An area of 20 ha. has recently been gardened close to bank of the Guadiana river that cross Badajoz. Ornamental trees and shrubs were counted and identified and the allergenic index was calculated according Cariñanos et al. (2014).

Results: A total of 14688 specimens were counted belonging to 94 species. 11 species presented dioecy (*Acer negundo*, *Chamaerops humilis*, *Ginkgo biloba*, *Ilex aquifolium*, *Laurus nobilis*, *Phytolacca dioica*, *Pistacia lentiscus*, *Populus alba*, *Populus nigra*, *Salix alba*, *Salix babylonica*). Most species were trees, the rest include 20 shrubs, 2 climbers and 4 palms. 46% of species showed an entomophylous system of pollination, 45% show anemophilic one and 9% and amphiphilic system. According to literature 7 species were estimated with a high level of allergenic potential (level 4): *Cupressus arizonica*, *Cupressus sempervirens*, *Juniperus horizontalis*, *Juniperus oxycedrus*, *Olea europaea*, *Platanus hispanica* and *Platycladus orientalis*. The total value of allergenic index from the garden in first estimation was 0.002. The highest values were reached by *Liquidambar styraciflua* and *Morus alba*, due to the high number of specimens planted.

Discussion and Conclusion: This garden showed a high level of biodiversity. Most of specimens were 3-5 year old, so their development degree was low and consequently the allergenic index was low compared with other gardens that have older trees. Moreover, according to the number of specimens, the level of allergenicity represent 1,9% (level 4), 4,3% (level 3) and 3,5% (level 2). Likewise, only 12,1% of specimens showed an anemophilic or amphiphilic system of pollination.

Keywords: ornamental plants, aerobiology, urban green spaces.

References:

1. Cariñanos, P., Casares-Porcel, M., Quesada-Rubio, J.M., 2014. Estimating the allergenic potential of urban green spaces: A case-study in Granada, Spain. *Landscape and Urban Planning* 123, 134-144.