AIRBORNE POLLEN AND PROTEIN CONCENTRATIONS THAT CAUSE ALLERGY. CASE STUDY: THE PLANE TREE

The study of the airborne concentrations from allergenic pollen and proteins allows to assess the allergy risk that the pollen of a certain species causes in the sensitive population. Different characteristics are important aspect to be considered such as to define the pollen season and the relationship with the flowering of the species; to quantify the aeroallergens or proteins related to allergenic reactions, and to identify the factors influencing the pollen emission processes as land uses around the city and the influence of meteorological variables.

The objective of this seminar is to show how these studies are carried out, selecting the pollen of the plane tree (*Platanus orientalis* L. var. *acerifolia* Dryand in Aiton) as a case study because of this species has been widely used as an ornamental tree in parks and gardens of the cities and whose pollen has a high allergenic potential.

In this lecture we will discuss:

- The importance of the aerobiological and environmental studies of the plane tree (*Platanus orientalis* L. var. *acerifolia* Dryand in Aiton).
- The aerobiological characterization of the plane tree.
- The identification of the most important meteorological variables that influence airborne pollen concentrations of *Platanus*.
- Prediction models of pollen levels in the atmosphere.
- The study of the flowering (phenology) of the plane tree and its relationship with the airborne pollen concentrations.
- The quantification of the protein that constitutes the major allergen (Pla a 1) and its relationship with airborne pollen concentrations.