

COMPARISON BETWEEN POACEAE POLLEN COUNTS AND AMBIENT PHL P5 CONCENTRATION IN EVORA, SOUTH PORTUGAL

Munhoz, V. (Universidade de Évora, Portugal); Martins, R. (Depto. Química, ICAM, Universidade de Évora); Caldeira, A. (Depto. Química, Centro de Química; Universidade de Évora); Antunes, C.M. (Depto. Química, Universidade de Évora; CNBC, Coimbra); Caeiro, E. (Depto. Biologia, Universidade de Évora), Carvalho, E. (Bertin Technologies, France); Brandao, R. (Depto. Biologia, ICAM, Universidade de Évora);

Email Address: ruibrand@uevora.pt

Correspondence address: Depto. Biologia, Universidade de Évora, P-7000 Évora, Portugal

Introduction: Airborne pollen of grasses (Poaceae family) is the main aeroallergen in many European countries, namely in Portugal. Grasses includes many herbaceous species with an anemophyllous pollination. Their pollen can be found in the air all over the year but higher concentrations are reached in springtime (March to June). Exposure to its allergens is deduced from pollen counts of environmental air samples. The aim of this study is to analyse the relationship between these pollen counts and the concentration of allergen Phl p5, through a new sampling technology, developed under an European LIFE/Environment program.

Methods: Airborne pollen were monitored with a Hirst-type sampler (Burkard 7-day pollen trap). Simultaneously, daily air samples were collected with a high volumetric cyclone-type sampler (Coriolis ® δ by Bertin Technologies, France) and Phl p5 concentration was measured from liquid samples through a "sandwich" ELISA with a kit from Indoor Biotechnologies®. Both samplers were placed side by side on a meteorological platform at the town center of Evora, 17 m above ground level and 320 m above sea level. ELISA analysis were performed on samples collected between the 2th of March and 12th of June 2007, which includes the main pollen season for grasses and *Phleum pratense*. **Results:** Pollen counts from both samplers were not correlated, with absolute values higher in Burkard sampler. Phl p5 concentration in air samples followed the same features of cyclone-type sampler but it was quantified even when pollen counts were low or null, particularly in the beginning of pollen season. Several peaks of allergen were detected at the end of March and on the 1st - 2nd of April. **Conclusions:** Coriolis ® δ cyclone sampler allowed the quantification of *Poaceae* either by pollen counts and by an ELISA assay but further analysis on the efficiency of sampling and its relationship with biophysical parameters are needed. These results suggest that pollen counts may not reflect exposure to *Poaceae* pollen. Immuno-sampling could provide a better understanding of exposure to airborne pollen allergens, namely out of the pollen season.