

## **RPA – Portuguese Aerobiological Network**

**History:** The first pilot studies on aerobiology in Portugal were carried out by the botanist Quitéria Pinto da Silva in Sacavém (1949-1950) when she analysed airborne pollen for agronomical purposes using a gravimetric sampler. Along the 50's and 60's the same researcher conducted sporadic studies at the main cities, Lisbon and Oporto, with a Durham sampler. A systematic research of the aeropalynological composition of the atmosphere of Coimbra was accomplished in 1978 and next years by a team of botanists from the Botanical Institute of the University of Coimbra, under the coordination of Jorge Paiva, an enthusiastic and still active palynologist of that university, with the strong support of Tereza Leitão, a biologist from the same Institute. The same team had extended their studies on airborne pollen to Lisbon, Oporto and Aveiro, all on the border of the Atlantic ocean, along the 80's, through gravimetric samplers. In 1988 R. Brandao, a biologist from the University of Evora and M.L. Lopes, a clinical allergologist working at the local hospital, carry out a research program on the relationships between airborne pollen and symptomatology of patients with pollinosis in the south part of the country. This study goes on nowadays and it had established for next years a strong linkage between the Portuguese Aerobiology Network, settled some years later, and allergology. Other sporadic studies were realized for alergological purposes in the 90's through volumetric methods, mainly in Lisbon. The first attempt to establish a network for pollen monitoring was established in South Portugal (Alentejo e Algarve) along the 90's by the same team and Carlos Nunes, the director of Centro de Imunoalergologia do Algarve. In 2000-2001 the first national network was established under the coordination of the Portuguese Society of Allergology and Clinical Immunology (SPAIC) which was based on Cour samplers. Since 2002, with the financial support of the same Society, a national network based on 7-day Hirst-type pollen traps is running which covers the main bio-climatical regions of mainland and the archipelagos of Azores and Madeira. In this last archipelago, since 2001 that Irene Camara, a young and promising biologist of the local university, is monitoring the airborne pollens and moulds spores of the main city, Funchal. Local information is available at [http://www3.uma.pt/cem/aerobio/estacao\\_fx\\_eng.html](http://www3.uma.pt/cem/aerobio/estacao_fx_eng.html)

**At Present:** Nowadays, the Portuguese Aerobiology Network RPA is centralized at the Laboratory of Palinology and Aerobiology of the University of Évora, where all drums coming from the sampling sites of the country are processed (in the island of Madeira, drums are processed at the local university). Sampling runs all the year and all equipments are standed on rooftops of university buildings or hospitals. Pollen analysis is carried out since 2002 under the technical supervision of Elsa Caeiro, a very skilled and dedicated biologist. About 36 palynomorphs are being monitored regularly but, as many of them occur in small quantities (for instance Gingko or Fraxinus), only 16 palynomorphs are statistically analysed. Quercus (oak trees) Poaceae, Olea europaea, Pinus and Urticaceae (Urtica and Parietaria) are the most abundant pollen types, depending on the bio-climatic region. Spores of Pteridophyta are also monitored in the archipelagos of Azores and Madeira. A weekly "Pollen Bulletin", coordinated by SPAIC, is broadcasted by national media like television (RTP1), on several national and regional newspapers and on radio. This bulletin reports the progress of the pollen season for the most important pollen types, a forecast for next days and includes comments made by an allergologist to questions of the public sent by e-mail to [bomdiaportugal@rtp.pt](mailto:bomdiaportugal@rtp.pt). Data and forecasts for next days of pollen concentrations, graphs of main pollen types and other information can be consulted at the web site <http://www.rpaerobiologia.com>. Information on

airborne pollen of RPA is also available at the European Pollen Information Database, in Vienna (Austria). The Lab of Palynology and Aerobiology is also engaged in other aerobiological research projects and activities namely on European projects like the Monalisa project (LIFE Environment programme), for validation of a new approach of pollen and mould monitoring in the air by on-line antigenicity measurement, the COST 0603 Action for Assessment of Production, Release and Distribution of Allergenic Pollen in Europe or the recent HIALINE project for the implementation of an Information Network based on the monitoring of aeroallergens.

**The Future:** Priorities for RPA for the near future includes:

- The extension of monitoring activities to airborne moulds at a national scale;
- Integration of a few aeroallergen monitoring as a regular basis;
- Increment of international cooperation, either through the participation in European research programs or by collaborative activities with research teams of South America and Brasil in particular.

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