



## Climate Change and its impact on Poaceae and Fagaceae pollen season in Northern Sardinia, Italy

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Airborne pollen data are an important source of information on flowering phenology, because they record the response of plants surrounding the sampling station, rather than the responses of individual plants, as with direct phenological observation. Plant phenology represents a good indicator of vegetation responses to long-term variation to temperatures. Furthermore, several studies have evidenced that aerobiological data series and pollen season are often strongly correlated to climate change.

This research aims to analyze airborne pollen data of Poaceae and Fagaceae measured from 1986 to 2008 in a urban area of northern Sardinia (Italy) and to investigate the trends in these data and their relationship with meteorological parameters using time series analysis. The aerobiological monitoring station was located in the center of the city very close to a public garden, and it is part of both the Italian and the European - A.I.A. Aeroallergen monitoring Network. Meteorological data were recorded during the same period by an automatic weather station.

The following parameters were calculated for each pollen: start, end and duration of pollen season, date of peak pollen concentration, number of days from the beginning of the season to the peak, annual pollen index (API), percentage distribution of API and maximum daily concentration.

The correlation between meteorological variables and the different characteristics of pollen seasons was analyzed using Spearman's correlation tests.

A linear regression model was used for the trend analysis of the API of airborne pollen spread of the two family from 1986 to 2008.