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Influence of wind on daily airborne pollen counts in Catalonia (NE Iberian Peninsula)

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The aim of this study is to analize the influence of wind (speed and direction) on the daily airborne pollen counts recorded in Catalonia (NE Iberian Peninsula) of 21 pollen taxa recorded at 6 aerobiological stations: Barcelona, Bellaterra, Girona, Lleida Manresa, and Tarragona for the period 2004-2014. The taxa studied are *Alnus*, *Betula*, *Castanea*, Cupressaceae, *Fagus*, *Fraxinus*, *Olea*, *Pinus*, *Platanus*, total *Quercus, Quercus* deciduous type, *Quercus* evergreen type, *Ulmus*, *Corylus*, *Pistacia*, *Artemisia*, Chenopodiaceae/Amaranthaceae, *Plantago*, Poaceae, Polygonaceae, and Urticaceae.

The mean daily wind direction was divided into 8 sectors: N, NE, E, SE, S, SW, W and NW. For each sector, the correlation between the daily pollen concentrations and wind speed using Spearman's rank correlation coefficient was computed and compared with the wind rose charts. The results showed that Tarragona was the station with more significant correlations followed by Bellaterra, Lleida and Manresa. On the other hand, *Artemisia* was the most correlated taxon with mainly negative values, and *Fagus* was the least. The W wind direction showed the largest number of significant correlations, mostly positive, while the N direction was the least and negatively correlated.