
The incidence of Amaranthaceae pollen in Qatar: a two-years research

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Abstract

Aerobiological studies have been carried out in many areas of the world; the information generated being released through different mass-media, internet, social networks, etc. to the population in general. Besides that, many are the studies published in the scientific literature, being this kind of studies more and more frequent in different parts of the world. However, there are still countries in which they hardly have been done. This is the case with the Middle East, where aerobiological studies are scarce or even null.

Qatar is a country that occupies the small peninsula with the same name, on the northeastern coast of the Arabian Peninsula, in which two volumetric Hirst type pollen traps were installed in May 2017. One of them was situated in the city of Doha, the capital, at the terrace of a building in the Hamad Medical City. The other, at the plain roof of the Al Khor Hospital, 48 km further north of Doha, in the municipality of the same name.

The pollen traps have been working with several interruptions because of damages caused by the intense dust in suspension due to the proximity to the deserts of the Arabian Peninsula. The methodology used for preparing and counting the samples was the proposed by the Spanish Aerobiology Network, the REA.

In general, pollen concentrations obtained are very low, with maximum annual pollen indexes of 303 for Doha and 932 for Al Khor, Amaranthaceae being the pollen type most abundant, with percentages of 32 to 65% out of the annual total pollen, depending on the station and the year.

Amaranthaceae are present in the atmosphere of Qatar mainly from August to October, but daily mean pollen concentrations hardly reach values of 30 pollen grains/m³ of air, 36 being the maximum value registered in Al Khor and 5 in Doha. These results probably are a consequence of the sparse vegetation of these areas and the scarce rainfalls with annual cumulative values of 79 and 62,8 mm, as average, for Doha and Al Khor, respectively. Nevertheless, the period in which these scarce precipitations occur is of great importance and determinates the vegetation development and, consequently, the flowering phenology and pollen concentrations registered.

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