

The Atmospheric Pollen Variation During Spring Pollen Season in Beijing, China

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Abstract

The atmospheric pollen of Beijing city was surveyed during the first half year of 2005 (January-June) with a volumetric Pollen Monitor KH-3000 system. The normal distribution plots of 10-minute-interval and 40-minute-interval data were plotted to find out the beginning and finishing dates of the spring pollen season, so were the seasonal and daily pollen variation charts. The beginning of the spring pollen season in Beijing is in the middle March; in the initial and last period, there is a peak in the daily chart, which appears in the afternoon; while in the middle of the pollen season, the chart takes on two peaks: one in the early morning and another in the afternoon. In the seasonal chart, there are two peaks: one in early April and another in early May, which both suppress 9,000 grains per m³. To predict the atmospheric pollen, a standard seasonal pollen chart needs to be made, on the basis of which the short-period concentration change can be predicted using the latest weather forecast data. Another solution to the problem is to construct a model, which can be fit iteratively each day and updated based on the information to date, allowing the fundamental shape of the pollen distribution curve to change from year to year.

Key words pollen; hay fever; spring pollen season; Beijing