

Annual movements of airborne soil particles containing calcium and Kosa events in 2005 and 2006

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Airborne particles had been collected every week from 2005 to 2006 in Gifu (35.46 degrees N, 136.74 degrees E), Japan. The particles were observed by an electron microscope (SEM), equipped with an energy dispersive X-ray (EDX) spectrometer and were classified into soil, pollen, sea-salt, and soot. In 2002 the number proportion of soil particles containing calcium to all the soil particles were high in spring and fall in accordance with the meteorological observations of yellow sand (Kosa) events in Japan. In 2005 when Kosa events were not so frequent and severe as in 2002, we collected 616 soil particles. The annual movement of the number proportion of the soil particles containing calcium quite agrees with the meteorological observation of Kosa in Japan. In 2006 we collected more than 1000 soil particles. In contrast with the movement of 2005 the number proportion of the soil particles containing calcium is low in April and May when the meteorological observatory reported Kosa events and is rather high in the other months with no report of Kosa events in Japan. In addition, the proportion rises and falls extremely almost every week. We discuss the movement from the points of frequency of Kosa events at dessert area in China and rainfall in Japan.