



Development of a guideline on vegetation area to reduce the risk of weed pollinosis in Korea

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Allergenic pollens are influenced by the environmental conditions so that the daily number of pollens varies by temperature, humidity, wind speed, etc. The relationship between the daily pollens and meteorological conditions were determined and utilized to forecast daily risk level of pollen allergy in Korea. Another important factor for the daily risk level of pollens is the vegetation area of the allergenic plants. In this study, the relationship between the area and pollen concentration was identified for two major weed species: Ragweed and Japanese Hop. It was then utilized to determine the upper limit of vegetation area to confine the risk level to a certain degree in the field. Three sites with different levels of pollen concentration were selected among twelve pollen observation sites in Korea based on the historical observation of the weed pollens. The vegetation area of the two weed species within four square kilometers at each site was surveyed. The maximum daily pollen concentration was highly correlated with the vegetation area and it was selected as a dependent variable for the regression equations, which were used as the guideline for vegetation area. According to the guideline, to limit the maximum daily pollen concentration under the moderate risk level or less than 50 pollen grains per cubic meter for Ragweed, the vegetation area should remain less than 0.6% of the ground area. For the moderate risk of Japanese Hop, pollen grains should be limited less than 100 and the area be less than 0.4%.