



## Male flowering index can predict the annual airborne pollen count of *Cryptomeria japonica* at different altitudes

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*Cryptomeria japonica* D. Don (the so-called Sugi or Japanese cedar) is one of the most important coniferous afforestation species. Its afforestation area today has reached 4.5 million hectares, making up 45% of the afforestation area in Japan. *Cryptomeria japonica* pollinosis was first reported in 1964. The prevalence of this disease has increased yearly and now affects over 10% of the Japanese population. In order to establish an accurate prediction method of airborne pollen counts for *C. japonica*, research into the relationship between the amount of airborne pollen, the distribution of *C. japonica* forests and flowering conditions has become very important. In order to clarify differences in airborne pollen counts at different altitudes, four gravity samplers (Durham's type) were set up at four observation points that were located from the coast to the side of a mountain up to 780 m altitude in Toyama Prefecture, Japan. The male flowering index and distribution of *C. japonica* forests were determined in order to evaluate the quantity of male flowers. The relationship between airborne pollen counts, the distribution of *C. japonica* forests and the male flowering index at each observation point was examined. There was a high positive correlation between the male flowering index of *C. japonica* and airborne pollen counts. The male flowering indices, as well as the distribution of *C. japonica* forests at different altitudes, were closely associated with airborne pollen counts at different altitudinal observation points. The flowering index and the distribution of *C. japonica* forests are useful indicators for the accurate prediction of airborne pollen counts of *C. japonica*.

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