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[Long-distance transport of ragweed pollen to southern Hungary](#)

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Title: Long-distance transport of ragweed pollen to southern Hungary

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Objective. Southern part of the Great Hungarian Plain (including Szeged city) is the mostly endangered region with ragweed pollen concerning not only the Carpathian Basin but the whole Europe, too. The aim of the study was to analyse the role of the long distance transport of ragweed pollen in its concentrations over Szeged.

Material and methods. Three days (June 21, 1993; July 3, 2000 and July 6, 2003) were selected from the 15-year period of 1989-2003, for which ragweed pollen was detected, in spite of the fact that local pollen dispersion had not been started. Ragweed pollen of transported and local origin was separated so that ragweed pollen detected before flowering of local ragweed was considered as of transported origin. Then, backward trajectories belonging to the days of peak concentrations of this period (i.e. those trajectories belonging to the three days selected) were examined for 3 and 7 days, respectively. For the three days selected, archive meteorological database was used and the HYSPLIT model was applied to calculate trajectories of ragweed pollen grains as well as to detect their source regions.

Results. It was detected that on the days with the highest ragweed pollen levels during each year of the 15-year period examined, air currents arrive over Szeged partly from north-west (namely, from the region between Rivers of the Danube and Tisza) and partly from southern–south-western direction (namely, from the regions of Southern France, Northern Italy and Croatia). Over the latter mentioned regions the flowering period of ragweed starts earlier than in Southern Hungary.

Conclusions. According to the backward trajectories received, ragweed pollen can only come from abroad, arriving over Szeged region either from north-west or from southern–south-western direction. In both cases ragweed pollen originates from south-south-west of Hungary, namely from regions where climate is warmer and drier.