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### Horticultural Science

Air temperature changes and phenological phases of field cucumber (*Cucumis sativus* L.) in Poland, 1966–2005

Kalbarczyk R.:

Hort. Sci. (Prague), 36 (2009): 75-83

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The aim of the work was to determine whether and how the frequently observed trends in air temperature changes affect the dates of phenophases of field cucumber (pickling variety) cultivated in Poland. Completion of the task included gathering of monthly and seasonal data concerning average air temperature in the vegetation seasonn of cucumber

collected from 53 stations of the Institute of Meteorology and Water Management and of phenological and agrotechnical dates collected from 28 experimental stations of the Research Centre for Cultivar Testing over 1966–2005 all over Poland. Dependence between the dates of phenological phases and average air temperature, their trend and the size of the changes for the 40-year research period of 1966–2005 were determined on the basis of a linear regression analysis. Moreover, the generalized cluster analysis was employed to group years, similar in terms of the course of cucumber phenophases: emergence, flowering and fruit setting, together with thermal conditions of air in the period preceding their occurrence. If the current tendencies hold slight acceleration of phenophases: emergence (+1.2 days/10 years), flowering (+1.9 days/10 years), fruit setting (+2.1 days/10 years) and growing acceleration of the dates of harvesting (the beginning by +3.1 days/10 years, and the end by +6.4 days/10 years), it leads to the shortening of the fructification period and it may thus deteriorate conditions for achieving good cucumber

yields in Poland.

## Keywords:

cucumber; phenology; climate change in Poland; linear trend

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