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Weed survey on arable land in the Czech Republic and Slovakia

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INTRODUCTION

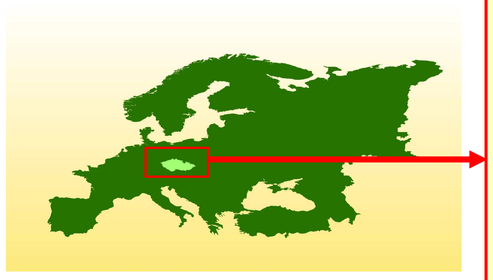
During the most of 20th century, Czech Republic and Slovakia were two parts of one country (former Czechoslovakia) sharing not only political system but also agricultural policy. Farming systems were similar with differences resulting mainly from different climate regions.

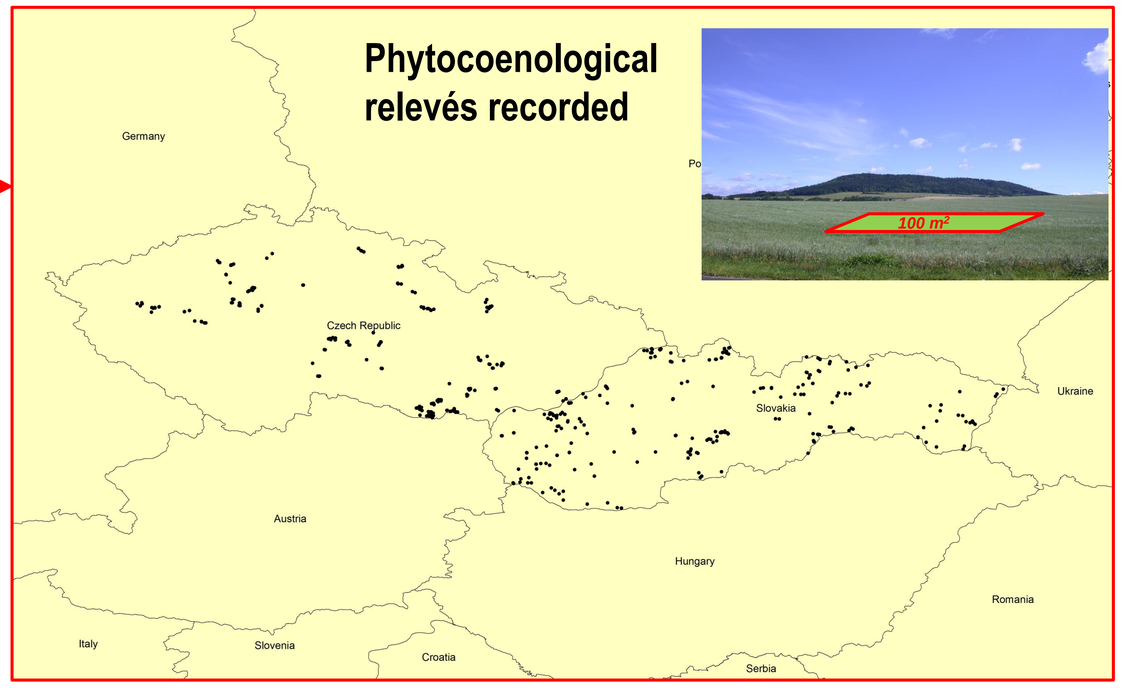
OBJECTIVE

The aim of the study was to evaluate the influence of environmental variables onto weed occurrence in arable crops. Especially the west-eastern direction of the shape of studied region gave us the potential to investigate the influence of increasing continentalism of the climate (ca. 740 km from Western Bohemia to Eastern Slovakia).

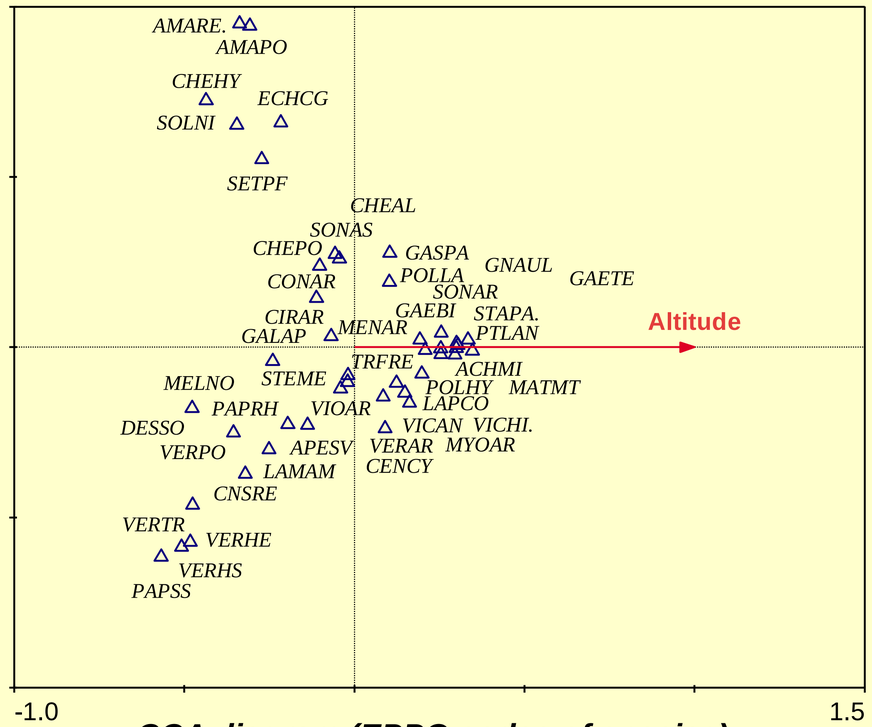
METHODOLOGY

The three years survey was conducted on arable land in 2006-2008 and totally 567 phytosociological relevés were taken in cereals and wide-row spring crops. In each sampled field, one phytosociological relevé of standard size of 50-100 m^2 was recorded in the central part of the field. The species coverage was estimated using nine-degree Braun-Blanquet cover-abundance scale.





RESULTS



CCA diagram (EPPO codes of species), minimum species fit 5 %

Differences in weed occurrence depending on different environmental conditions were studied using multivariate analysis. Geographical characteristics like latitude, longitude and altitude significantly (p=0.05) affected composition of weed communities. On the base of our relevés, however, no differential species in relation to above mentioned variables were found, except altitude.

Typical species of low and high altitudes were distinguished the same for both countries. As species of low altitudes *Amaranthus* sp., *Chenopodium hybridum*, *Solanum nigrum*, *Consolida regalis*, *Silene noctiflora* and others were found. *Stachys palustris*, *Galeopsis tetrahit*, *Myosotis arvensis*, *Persicaria hydropiper*, *Sonchus arvensis* etc. were characteristic species of higher altitudes. Further examination of the same dataset is still undergoing and an influence of other environmental variables is being studied.

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