

## ***In situ* determination of the wind erosion caused nutrient loss on Chernozems by portable wind channel experiments**

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Several alarming signs of drought had been necessitated launching of researches regarding to the nature of climate change and its possible impacts on the Hungarian soils. Estimation of wind erosion caused soil and nutrients (humus, nitrogen, phosphorus, potassium) loss plays more and more important role in these investigations. This study is focused on chernozem soils in the SE part of Hungary in order to quantitatively determine the movement of soil nutrients by wind. The undisturbed soil samples were measured in the portable and adjustable 12 m long field wind channel in situ on the study plot in the summer of 2011. The results show that at relatively low wind speeds (15 m/s in 0.3 m height) and short wind events (10 minutes) the amount of eroded material can reach 1-1.2 t/ha and the aggregate structure of chernozem soils is changing: sediment in the upper soil layer contains 10% more aggregates in diameter 1-4 mm. The humus content in sediment traps (above 0.15 m) is higher by 0.6-1% than that of the original topsoils. The amount of relocated humus content caused by deflation can reach 45-50 kg/ha. With the help of portable field wind channel experiments we can conclude that our valuable chernozems with high quality can be struck by wind erosion mainly in drought periods. The loss of soil nutrients (macro- and microelement) by deflation can be determined as a consequence of deterioration of soil structures and dust emission caused by not proper cultivation technologies.

### **Biography**

A. Farsang has completed her Ph.D. at the age of 30 years and postdoctoral studies (habilitation) in 2011 from University of Szeged (Hungary). Her main activities and responsibilities are teaching for the University of Szeged, research and project management. She is the Vice Director of Environmental Institute, and Head of the Soil and Water Research Laboratory of the Physical Geographical Institute. She has published more than 60 papers in reputed journals.

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