



Agricultural Journals

Research in

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Res. Agr. Eng.

Ryšan L., Šařec O.:

Research of correlation between electric soil

conductivity and yield based on the use of GPS technology

Res. Agr. Eng., 54 (2008): 136-147

A contact method was used for the continuous measuring of soil electric conductivity using a six disc electrodes apparatus. The placement of the electrodes was chosen on the basis of the depth of the profiles surveyed: 0– 0.3 and 0– 0.9 m. Two Crop Research Institute fields and two private Farma Dolejšová fields were followed in 2004 and 2005. For the treatment of the EC data obtained and of other information, the tools of geostatistic were applied. Arc View GIS software and its module Geostatistical analyst were used for the analysis of the geo-data obtained and for the elaboration of the soil conductivity and crop yield maps. Four variogram models were tested. Geostatistical analyses make relatively rigorous demands on wide-sense stationarity or at least average stationarity. The selection of any one of the four geostatistical variogram models

model is recommended. The experiments documented a correlation between the two EC profiles investigated but no correlation was found between EC and the yield of crop. Every field and every property has its own characteristic surface which does not correspond with other ones.

Keywords:

soil electric conductivity; precision farming; soil properties; geostatistic

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