

## THE ASSESSMENT OF PREVIOUSLY UNAPPLIED FIELD METHOD FOR RESEARCH ON GROUND BEETLES AS INDICATORS OF INTEGRATED PEST MANAGEMENT

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**Abstract.** *Researches around the world show that ground beetles (Coleoptera: Carabidae) can serve as bioindicators of integrated pest management (IPM). During 2012-2014 in Latvia, research on possibility to use ground beetles as indicators of IPM in winter wheat was occurring using previously unapplied field method – a grid of sample plots with well-known field history. Place of research was Research and Study farm ‘Peterlauki’ (56°30’39.38”N; 23°41’30.15”E). Totally 24 sample plots (0.3 ha), separated from each other and near crop fields by 2.5 m wide stripes of land covered with vegetation, were arranged in four rows in the grid. The main soil treatments were conventional ploughing (0.22-0.23 m) with mouldboard plough and shallow tillage (0.10-0.11 m) with disc harrow for each two rows of sample plots. Different cereals, rapeseed and beans used to be drilled in sample plots to provide different crop rotations. Twelve winter wheat sample plots had been used for ground beetle studies every year. Ten pitfall traps were placed in 30 m long cornerwise transect for collecting beetles in each sample plot. Exposition of traps started in spring and lasted till the cutting of winter wheat every year. Results of data analyses showed that abundance and biodiversity parameters of ground beetles significantly differ among differently managed sample plots. It means that the beetles prefer to stay inside more suitable habitat and do not equally disperse among closely located sample plots covered with the same crop. It allows concluding that the grid of 24 sample plots is useful field method for research on ground beetles as indicators of agroecological factors within winter wheat and probably other cereal crops. It is also because the grid of sample plots occupies comparably small territory, and it is easy to vary agroecological conditions in every plot during the field studies.*

**Key words:** *Carabidae, pitfall traps, sample plots.*

### ACKNOWLEDGEMENT

The research was supported by the State research programme „Sustainable Use of Local Agricultural Resources for the Development of High Nutritive Value Food Products”, subproject No.3.1 “Sustainable Use of Soil as the Main Resource for the Production of Safe and Qualitative Food and Feed from the Main Agricultural Crops”.