

THE DOMINANCE STRUCTURE OF GROUND BEETLES (COLEOPTERA: CARABIDAE) WITHIN DIFFERENTLY MANAGED WINTER WHEAT FIELDS

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World-wide studies show that ground beetles (Carabidae) can serve as bioindicators of different agroecological factors in different field crops. But up to now only few studies have been carried out on these issues in Latvia (Gailis, Turka 2013). The objective of our research is to find out how different soil tillage and crop rotation affect the dominance structure of ground beetles within winter wheat (*Triticum aestivum*) fields.

The research was carried out at Research and Study Farm 'Peterlauki' (56°30'39.38''N; 23°41'30.15''E). 12 sample plots (0.3 ha) were used for study. 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 six sample plots. Winter wheat, spring wheat and spring rapeseed (*Brassica napus*) were used as pre-crops in every four sample plots. Beetles were collected by pitfall traps. Exposition of them started in 17 April 2012 and ended in 31 July 2012. Traps were emptied every seven days. Species identified after Freude et al. (2004). The dominance structure of ground beetles was calculated according to Engelmann (1978).

25369 ground beetles from 66 species were recorded. *Loricera pilicornis* and *Bembidion guttula* were dominant species in all sample plots. *L. pilicornis* was the most dominant species in shallow tilled soil, but *B. guttula* – in ploughed soil. Six species – *Bembidion obtusum*, *Poecilus cupreus*, *Harpalus rufipes*, *Pterostichus melanarius*, *Pterostichus niger* and *Amara plebeja* – were dominants or subdominants in the sample plots with at least one type of management. For example, *A. plebeja* was subdominant species where spring wheat was the pre-crop in shallow tilled soil, but recedent or subrecedent in other sample plots. All other recorded species were recedents or subrecedents within all sample plots.

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