Role of grassy strips on biodiversity and movement of ground beetles (Carabidae: Coleoptera) in organic arable ecosystems

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The thesis is related to the preservation of grassy strips in organic arable fields for the enhancement of biodiversity of the ground beetles. It is found that the 10 year old grassy strips benefit the most as compared to the 2- and 4- year-old grassy strips. Additionally, the carabids were analyzed to species level in respect of their ecological needs to find out the possible effects of the semi natural habitats like field margins. The grassy structures support the movement of the most abundant species. Moreover, they support the carnivorous carabids in the surrounding arable crops which indicates that the protection of the semi natural habitats regulate the biological control in crop lands.

An intensive study of mark-recapture and the interpretation of the guilds of pitfall traps showed that the ground beetles differ in getting the advantages of the grassy strips. In addition, the groping of carabids on the basis of their feeding habits, body size and the status of their endangerment explain the ecological process in arable fields. On the basis of these studies we recommend the stability of natural and semi natural habitats in the arable ecosystems for better biological control and the protection of those species which could not move into the arable fields if some corridors for dispersal are not available.