

Pfiffner, L. & Niggli, U. (1996). Effects of bio-dynamic, organic and conventional farming on ground beetles (Col. Carabidae) and other Epigeic arthropods in winter wheat. *Biological Agriculture and Horticulture* 12, 353-364.

ABSTRACT

In a long-term comparison of agricultural systems, bio-dynamic, organic and conventional farming have been compared since 1978. The treatments differ mainly in plant protection management and fertilization (organic vs. mineral, and intensity). The experimental field is situated on a Luvisol from loess in Therwil (Switzerland). Here, the fauna of beneficial epigeic arthropods (carabids, staphylinids and spiders) in differently cultivated winter wheat plots was investigated with pitfall traps (live catches) in 1988, 1990 and 1991. Compared with the conventional plots (= 100%), the bio-dynamic plots contained 193% of epigeic arthropods, the organic plots 188%. The activity-density of carabids, staphylinids and spiders was higher in the bio-dynamic and the organic than in the conventional plots in all three years. In two out of three years, the difference between the conventional and the bio-dynamic, organic plots was significant. For carabids, the differences between treatments were most pronounced in spring. In the biological plots, the species number of carabids was higher in each year than in the conventional ones: On average bio-dynamic plots contained 18–24 species, organic plots 19–22 species and the conventional ones 13–16 species. The frequency distribution of the carabid species was also more even in the bio-dynamic and the organic plots. The influences of plant protection and fertilization on epigeic arthropod populations are discussed.