

Effects of Field Location and Cereal Species on the Number of Grain Aphid (*Sitobion avenae* F.) and its Parasitoids (*Hymenoptera parasitica*)

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ABSTRACT

The objective of the present study was to determine whether field location in an agricultural landscape affects the numbers of grain aphid and its natural enemies – parasitoids. The experiment was performed in the years 1995 – 1997 and 2000 in rye and winter wheat plantations near the city of Bydgoszcz (northern Poland). It was found that the populations of *S. avenae* were more numerous in cropland adjacent to shrubs, orchards and boundary strips than in plantations located within other cultivated fields. In addition, greater numbers of *Hymenoptera parasitica* were obtained while rearing them from the aphid colonies collected from these plantations.

Key words: Grain aphid, parasitoids, rye, winter wheat, cropland surroundings

INTRODUCTION

Cereals constitute ca. 70% of the cropland structure in Poland, so their economic role is significant. An increase in the cropping area is conducive to the development of many agrophages, among which particular attention should be paid to aphids. In the temperate climate zone they attack both cereals and grasses, as well as wild-growing plants (Leski, 1991; Niraz *et al.*, 1984; Pankanin-Franczyk, 1990). The cereal acreage expansion, simplified crop rotation and tillage are major factors stimulating the growth of cereal aphid populations. The numbers of these pests may be also considerably affected by plantation location in an agricultural landscape (Bennewicz & Krasicka-Korczynska, 1997; Pankanin-Franczyk, 1990).