

Project Title : Investigations on Some Biotic Factors the Affecting the Biology and Population Trend of The *Helicoverpa armigera* (Hübner) (Lep.:Noctuidae) in Manisa Province

Start /End Date : 1995-1997

Supporting Body : GDAR

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Summary : This study was carried out between the years 1995-1997 in Manisa. Biology and population levels of the *Helicoverpa armigera* (Hübner) were completed in field conditions whereas biotic factors affecting the population trends were carried out under laboratory conditions.

Biological studies showed that *H. armigera* produced 4-5 generations a year. Studies regarding the population levels performed that the egg and larvae populations of the pest gradually decreased in subsequent generations in a contrary manner as expected. This decreasing was the result of the efficiency of the natural enemies on the pest. The parasites were more efficient than the predators when the host plant was tomato and vice-versa when the host plant was cotton.

Four species of egg parasitoids of the *H. armigera* were found and the parasitization rates were found to be 25.39% and 15.62% on tomato fields in 1995 and 1996 respectively. This rate, in cotton fields, was 3.13% in 1995 and 0.24% in 1996. As for the larvae parasitoid eight species in 1995, and two species in 1996 were found in tomato fields. Larval mortality caused by these parasitoids as well as diseases was determined to be 79.36% and 76.51% in 1995 and 1996 respectively in which the share of the parasitization in these ratios were 32.27% and 50.86%.

Thirteen predators of the pest which were determined during the studies, were found to be the most important biotic factor to suppress the populations of the pest in cotton fields.

Among the sixteen plants which were determined to be the host of the pest during the studies, two of them were the new record for the world. The individuals of the pest were found in all host plants when they were generative stage.

Development period, pupal weight and mortality rates of the *H. armigera* individuals which were fed on pepper, tomato, cotton and tobacco, were determined in the laboratory. As for the result of this study, cotton and tomato were found to be the more appropriate food source as compared with pepper and tobacco. However, the effectiveness of these food source on the parameters mentioned above were not statistically significant ($p:0.05$).