

EVALUATION OF THE ROLE OF CERTAIN MORTALITY FACTORS OF *Coccinella undecimpunctata* L. (COLEOPTERA: COCCINELLIDAE) ON DIFFERENT CROPS AT KAFR EL-SHEIKH GOVERNORATE.

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ABSTRACT

The present study was carried out in both laboratory and the experimental field of Sakha Agricultural Research Station, Kafr El-Sheikh Governorate during two successive seasons (2008 and 2009) to evaluate the role of certain mortality factors in reducing the field populations of *Coccinella undecimpunctata* L. on different crops. The coccinellid predator was recorded to be parasitized by the two hymenopterous parasitoids, *Tetrastichus coccinellae* Kurdjumove (Eulophidae), and to be infected with bacteria *Bacillus* spp. and two species of fungi (*Penicillium* sp. and *Fusarium* sp.).

Overall crops during 2008, the highest percentage of the total population mortality was caused by parasitoids (49.88%) and the lowest by unknown mortality (2.24%), as well as the highest contribution in the total mortality was recorded by parasitoids and the lowest by unknown mortality. The mortality was caused by fungi came in the second rank (6.73%) and contributed to (10.71%) of total mortality. Mortality was caused by bacteria contributed with low percentage in the total mortality (6.35%). During 2009, on different crops, the highest percentage of the total population mortality was caused by parasitoids (48.27%) and the lowest by bacteria mortality (4.70%), as well as the highest contribution in the total mortality was recorded by parasitoids and the lowest by bacteria mortality. The mortality was caused by unknown came in the second rank (8.91%) and contributed to (12.90%) of total mortality. Mortality was caused by fungi came in the third rank and contributed with 10.39% in the total mortality.

Keywords: *Coccinella undecimpunctata*, mortality factors, parasitism, fungi, bacteria.

INTRODUCTION

Insect predators are widely distributed and considered as important natural enemies of pest insects in biological control and integrated pest management programs as they prey on a range of pests including aphids, scale insects, mealy bugs, spider mites and larvae of some species of Thysanoptera, Lepidoptera and Coleoptera (Ceryngier and Hodek, 1996). Coccinellids are one of the most important as biological control agent but they may be attacked by certain mortality factors which reduce their efficiency to a great extent. Among these, parasitoids, fungi, and bacteria. Coccinellids are attacked in all life stages by nearly 100 species of parasitoids, which primarily belong to the orders Hymenoptera and Diptera (Ceryngier and Hodek, 1996;