TIME OF FLIGHT ACTIVITY OF WINGED COWPEA APHID, *A. CRACCIVORA* KOCH AND THEIR EFFICIENCY AS VECTORS OF FABA BEAN NECROTIC YELLOWS VIRUS

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Abstract

Studies on daily flight activity of cowpea aphid, Aphis craccivora attacking cowpea and faba bean plants and their infectivity during the two successive seasons of 2007/08 and 2008/09 were carried out at Sids, ARC, Beni-Suef Governorate, Middle Egypt. Horizontal yellow water pan traps, filling fresh water were used to monitor aphid flights over fields of cowpeas (late-summer season) and faba beans (early winter season). Traps were operated for 17 weeks, from mid-August to mid-December 2007 and 2008. The transmission efficiencies of FBNYV were determined for the cowpea aphid species caught most frequently. During late summer season, and early winter season, the number of cowpea aphids trapped by the pan traps over cowpea and faba bean fields and as well over prevailing weeds were significantly affected by the daily time of alighting, and consisted of irregular fluctuations in sizes of collections

With regard to the hourly and intensity of cowpea aphid migration flights, traps also operated for four days: 1st. and 15th. September, 1st. and 15th. November within cowpea and faba bean fields, respectively, after sunrise at a.m. 7–12 and before sunset at 4–7 p.m. Catch winged aphids were counted every hour and transplanted on a number of healthy faba bean (cv. Giza 2), to test their infectivity. Data obtained indicated that the flight activity of winged forms of cowpea aphid over cowpea and faba bean was significantly fluctuated up and down after sunrise, mid-day and before sunset. Peak numbers of winged cowpea aphid flight over the cowpea plantation area before harvesting time being in 8-9 a.m., and 6–7 p.m., while on earlier planted faba bean at seedling stage attended after sunrise mainly in 7–8 a.m., followed by minimizing at time and again noticed re-active before sunset 1-2 hours.

Keywords: *Aphis craccivora Koch. (CA), Faba Bean Necrotic Yellows Virus (FBNYV), Tissue Blot Immunoassay (TBIA), Horizontal yellow water pan traps.*

INTRODUCTION

Aphids are important pests of faba bean crops in Egypt. They cause significant yield reductions through direct feeding and the transmission of several virus diseases (Bos and Makkouk, 1994, Franz *et al.*, 1997, Abeer, 1998, El-Defrawi *et al.*, 1998). The faba bean necrotic yellows virus (FBNYV), which is exclusively transmitted by aphids (Makkouk *et al.*, 1998 and El-Defrawi *et al.*, 2000), has been of particular concern in