ABSTRACT

A new aphid species, *Brachycaudus (Appelia) shwartzi* (Borner) was recorded for the first time in Egypt during the present work. This species was heavily infested leaves of apricot, *Prunus armeniaca* and peaches *Prunus persica* during May, 2006 at El-Tahrir, El-Behera Governorate. Identification procedure was confirmed by Prof. R. Blackman at British Museum, in London. Brief verbal and drafting description for alate viviparous female of this new recorded species was carried out. Moreover a simple bracket key was constructed to identify the three recorded species of genus *Brachycaudus* in Egypt.

**KEY WORDS:** *Brachycaudus*, Aphididae, Egypt.
GENETIC FINGERPRINTS AND PHYLOGENETIC RELATIONSHIPS OF EIGHTEEN APHID SPECIES FROM EGYPT (HEMIPTERA: STERNORRHYNCHA: APHIDIDAE)


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ABSTRACT

The current study aimed to identify eighteen aphid species belonging to Tribes Macrosiphini and Aphidini (Subtribe: Rhapalosiphina) by using Biochemical and Molecular genetic markers (isozymes, SDS-Page total protein and RAPD-PCR markers) as well as surveying of biochemical and RAPD–PCR species – specific bands for some of those tested species. Each of isozyme and RAPD electrophoresis analysis revealed the highest level of
polymorphism, comparing with total protein electrophoresis analysis. The electrophoresis study for those different molecular systems revealed that 160 different bands pattern, seven of them were considered as common bands in all tested species, while thirty four bands were observed in some species as species - specific bands. The electrophoresis studies in those different molecular systems reflected 95.21% polymorphism among the tested species. Phylogenetic relationship based on combined effect of isozyme, Total protein and RAPD-PCR analysis reflected that the highest similarity was recorded between Rhopalosipum maidis and R. padi, dendrogram analysis can separate the Greaminaceae host plant aphid from the other species. Moreover it showed clearly the gab between Tribe: Macrosiphini and Tribe: Aphidini (Subtribe: Rhapalosiphina). A molecular branching key was constructed to identify thirteen species out of the eighteen tested species. This key is depended on species- specific markers.

**KEY WORDS:** Genetic fingerprints, Phylogentic relationships, Aphids, Molecular branching key.

References


