FINGERPRINTING AND SOME ECOLOGICAL ASPECTS ON CERTAIN HARD SCALE INSECTS IN EGYPT (COCCOIDEA: DIASPIDIDAE)

BY

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M.Sc. Agric.Sc.(Entomology), Ain Shams University , 2009

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ABSTRACT

Nagwan Mohammed Hamdy Ibrahim: Finger Printing and Some Ecological Aspects on Certain Hard Scale Insects in Egypt.(Hemiptera: Sternorrhyncha: Diaspididae). Unpublished Ph.D. Dissertation, Ain Shams University, Faculty of Agriculture, Department of Plant Protection, Egypt, 2017.

The present work aimed to study some taxonomical and ecological aspects on some diaspid species in Egypt. /as well as molecular genetic techniques. These studies were conducted throughout five successive year 2010- 2014.

Thirty five diaspid species were surveyed on different host plants three of them recorded for the first time in Egypt. Pictorial field key was conducted to facilate identification procedures in the field. Also, bracket pictorial key was constructed to facilate identification in the laboratory. The polymerase chain reaction (PCR) was used to amplify five specific primers. These primers were produced specific bands which used as specific markers for different taxa. Molecular branching key was constructed to facilate identification procedures. Phylogenetic relationships between different taxa were investigated.

Ecological studies on the population dynamics of white mango scale insects, ***Aulacaspis tubercularis*** and associated natural enemies on mango trees were investigated throughout two successive years (2012 & 2013). Seasonal fluctuation of different developmental stages of this species and associated natural enemies were investigated. Number and duration of annual field generations were estimated. Effects of ten ecological factors (6 physical + 4 biotic) on the changes in population density of this species were investigated. Spatial distribution of different developmental stages of this species as well as on both leaf surface of mango trees were also investigated.

Key words:

Diaspididae, *Aulacaspis tubercularis* ,Molecular genetic, Identification key, Polymerase Chain Reaction, Phylogenetic relationships, Specific primer, Population dynamics, Seasonal fluctuation. Annual generation, Spatial distribution.

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