

Study of Phenotypic Polymorphism and Detection of Genotypic Polymorphism in *Menochilus sexmaculatus* (Coleoptera: Insecta) Using RAPD PCR

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Abstract : *Menochilus sexmaculatus* commonly known as six spotted zig zag ladybird, is an aphidophagus and the most misidentified Coccinellids due to the occurrence of numerous color variants. The correct identification of *Menochilus sexmaculatus* and its strains is necessary to implement the use of biological control. In the present study phenotypic and genotypic polymorphism was investigated in *Menochilus sexmaculatus* collected from Punjab, NWFP and Sindh provinces of Pakistan. Six different morphs of the species were distinguished by analyzing its Elytral color and spot pattern and then Polymerase Chain Reaction was used to generate random amplification of polymorphic DNA (RAPD) from six different types of *Menochilus sexmaculatus*. Forty primers (OPA & OPC Kit) were used to perform RAPD PCR on six different types of *Menochilus sexmaculatus* of which, seven primers revealed different patterns related to the *Menochilus sexmaculatus* types. These seven primers (OPA-04, OPA-09, OPA-18, OPC-04, OPC-12, OPC-15 and OPC-18) produced 111 clear polymorphic bands and 6 scorable strain specific markers. The cluster analysis applied to RAPD data showed high polymorphism among six types and it can be concluded that these six types are six polymorphic strains of the same species.

Keywords : *Menochilus sexmaculatus*, aphidophagus, coccinellids, phenotypic and genotypic polymorphism, RAPD-PCR, strain specific markers

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