

## ABSTRACT

M. Sc. Thesis

### MOLECULAR CHARACTERIZATION OF *Anopheles maculipennis* COMPLEX (DIPTERA: CULICIDAE) IN TURKEY

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*Anopheles maculipennis* complex consisting of eleven species, six of which are vector, in Palearctic region was the first described sibling species group in family Culicidae. Identification of these sibling species is very difficult using morphological data alone. The egg morphology has been used widely by many authors, but this method has not been satisfactory enough due to the intraspecific variations,. Three new taxa have recently been discovered by using both morphological and molecular data together. Some of the previous reports on the complex known from Turkey are based on highly dated data while the others have had insufficient sampling and inadequate morphological characters. Therefore, composition of members of *An. maculipennis* complex has not been clarified sufficiently in Turkey. The aim of the present study was to determine the distribution and molecular identification of *An. maculipennis* complex in Turkey. For this purpose, 117 specimens were collected from seven different geographical regions in Turkey and analyzed by modern molecular techniques. Eggs of 35 specimens were studied and, all specimens collected were sequenced and their rDNA ITS2 sequences compared with those stored in the GenBank database. As a result, three species of *An. maculipennis* complex (*An. maculipennis*, *An. sacharovi* and *An. melanoon*) were identified and their geographical distribution pattern in Turkey was determined.

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**Key Words:**

*Anopheles maculipennis* complex, species identification, PCR, ITS2, Turkey