

Morphometric discrimination of honey bee races and ecotypes in Turkey

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There is a very rich genetic and phenotypic diversity in honey bees in Turkey. There are five subspecies that are known, and many ecotypes within those races. We wanted to discriminate the ecotypes found in Anatolia using traditional and geometric morphometrics. In traditional morphometry 17 wing traits have been measured and 19 landmarks have been used from the wings of 370 honey bees. Five subspecies and three ecotypes of *A. mellifera anatoliaca* found in Anatolia have been compared using both morphometric methods. Discrimination of subspecies and ecotypes were pretty well in both. Traditional morphometry contains both shape and size elements, whereas geometric morphometrics discriminates the groups on the basis of shape only. Positions of the three ecotypes that are plotted resulting from both methods are compared. In the traditional morphometrics, ecotypes and races of honey bees were separated to a large extent on the basis of size on the first axis of the canonical variate analysis. Whereas geometric morphometric analysis discriminated the three ecotypes and five races on the basis of shape which reflects to a large extent genetic differences among the groups.

Key words: Honey bee, *Apis mellifera*, morphometry, discrimination