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ABSTRACTS

# **10\_102. POPULATION GENETIC ANALYSIS OF *DACUS CILIATUS* (LOEW) THROUGHOUT ITS NATIVE RANGE IN AFRICA AND IN RECENTLY INVADED AREAS**

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*Dacus ciliatus*, the Ethiopian fruit fly, is a major oligophagous pest of cucurbit crops, that is abundant throughout and originates from the African continent. It has extended its range to the Indian Ocean islands becoming an invasive pest of major concern. Although the economic importance of this species is well documented, its large-scale pattern of genetic structuring is poorly known. Hence, the current quarantine methods and management plans still rely on general assumptions concerning its intraspecific variation. The aim of this work was to characterize the large-scale population structure of *Dacus ciliatus*, and its diversity within Africa (including Indian Ocean Islands) and Israel. Individuals of *D. ciliatus* were collected from 12 countries (n=1153) distributed in West Africa (Benin, Senegal, Mali, Burkina Faso), East and Southern Africa (Tanzania, South Africa, Mozambique), the Indian Ocean islands (Grande Comore, Mayotte, Mauritius and Réunion) and Israel. They were genotyped at 12 microsatellite loci specifically developed for this species. Genetic diversity was recorded such as genetic discontinuities among geographical regions and levels of population structuring through Bayesian clustering procedures. The optimal genetic structure found with Bayesian clustering procedures separated the whole dataset into three genetic clusters. The first cluster comprised all the mainland African populations, the second one the Mayotte populations and the last genetic cluster comprised the recently invaded Mascarene Islands (Réunion and Mauritius). Grande Comore Island had a mixed pattern between African origin and Mayotte genetic cluster. These results are further discussed regarding the ecological and geographical patterns and genetic differentiation of a population after an invasion in insular environments.

**Keywords:** *population genetic analysis, microsatellites, Dacus ciliatus*