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ABSTRACTS

10_104. DNA BARCODING FURTHER INDICATES CRYPTIC GENETIC VARIATION IN THE MANGO FRUIT FLY, *CERATITIS COSYRA* (DIPTERA, TEPHRITIDAE)

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The mango fruit fly, *Ceratitidis cosyra*, is a major agricultural pest affecting mango production in sub-Saharan Africa. Morphological differences between *C. cosyra* and four closely related *Ceratitidis* (*Ceratalaspis*) species (*C. discussa*, *C. quinaria*, *C. silvestrii*, *C. striatella*) are subtle, so that reliable separation often requires specialized expertise. Additionally, a previous study showed cryptic genetic variation in *C. cosyra* with microsatellite genotypic clusters also occurring in sympatry. DNA barcoding further supported cryptic genetic variation in *C. cosyra* due to outlier DNA sequences. This study aimed to verify whether DNA barcoding can profitably be used to (a) resolve the two main microsatellite genotypic clusters of *C. cosyra*, and (b) separate *C. cosyra* from *C. discussa*, *C. quinaria*, *C. silvestrii*, and *C. striatella*. A subset of 48 *C. cosyra* specimens previously assigned to the two microsatellite genotypic clusters was subjected to DNA barcoding. This dataset was integrated with 83 public DNA barcodes of *C. cosyra*, *C. discussa*, *C. quinaria*, *C. silvestrii*, and *C. striatella* from the Barcode of Life Data Systems (BOLD). Neighbour joining tree (K2P distance) separated the two *C. cosyra* genotypic clusters and also resolved properly supported groups corresponding to (a) *C. quinaria* and *C. silvestrii*, (b) *C. discussa* (only 2 specimens considered) and possibly (c) *C. striatella* (all specimens but one included in the same clade). These results further support the hypothesis of cryptic speciation in the mango fruit fly and suggest that DNA barcoding represents a suitable tool for the identification of *C. cosyra* and of the closely related *Ceratitidis* (*Ceratalaspis*) species.

Keywords: *Ceratitidis cosyra*, *Ceratalaspis*, fruit flies, cryptic species, DNA barcoding