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Genetic characterization of the mite *Varroa destructor* (Acari: Varroidae) collected from honey bees *Apis mellifera* (Hymenoptera, Apidae) in the State of Santa Catarina, Brazil

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ABSTRACT. The mite *Varroa destructor* is an ectoparasite that is considered a major pest for beekeeping with European honey bees. However, Africanized bee colonies are less threatened by this ectoparasite, because infestation levels remain low in these bees. The low reproductive ability of female mites of the Japanese biotype (J), introduced to Brazil early in the 1970s was initially considered the main factor for the lack of virulence of this parasite on Africanized bees. In other regions of the world where the Korean (K) biotype of this mite was introduced, there have been serious problems with *Varroa* due to the high reproductive potential of the mite. However, a significant increase in the reproductive rate of females of *Varroa* in Brazil has been recently demonstrated; the cause could be a change in the type of *Varroa* in the bee colonies. We evaluated the prevalence of haplotypes J and K in mite samples collected from the State of Santa Catarina and from the island of Fernando de Noronha in the State of Pernambuco. The analysis of the mitochondrial genome (PCR + RFLP) revealed haplotype K in all samples from Santa Catarina and haplotype J in all samples from Fernando de Noronha. The analysis of microsatellites (nuclear genome) in bees from Fernando de Noronha

showed only the specific alleles of haplotype J, while in bees from Santa Catarina, these alleles were found in only 2.8% of the samples. The high frequency of individuals with Korean genetic material is probably to the reason for the current high reproductive capacity of the mite *V. destructor* recorded in Santa Catarina.

Key words: Varroasis; Africanized bee; Haplotype; Microsatellites; Polymerase chain reaction + Restriction fragment length polymorphism

