

Genetic polymorphism of the kappa-casein gene in Brazilian cattle

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ABSTRACT. Frequencies of κ -casein gene alleles were determined in 1316 animals from the Brazilian *Bos indicus* genetic groups (Sindhi cows, Gyr sires, Gyr cows, Guzerat sires, Guzerat cows, Nellore sires, and Gyr x Holstein crossbreds) by means of polymerase chain reaction-restriction fragment length polymorphism analysis using two independent restriction nucleases (*Hinf*I and *Hae*III). The genotyping of κ -casein alleles (A and B) is of practical importance, since the B allele is found to correlate with commercially valuable parameters of cheese yielding efficiency. The frequencies of the B allele of κ -casein among breeds ranged from 0.01 to 0.30. The Sindhi breed had the highest frequency for the B allele (0.30), while the frequencies of this allele in other breeds ranged from 0.01 to 0.18. A wide variation in the B allele frequency among *B. indicus* breeds was

found suggesting that molecular selection for animals carrying the B allele could impact breeding programs for dairy production.

Key words: Zebu cattle; Casein; Candidate genes; κ -casein; Molecular markers