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Amplifiability of mitochondrial, microsatellite and amelogenin DNA loci from fecal samples of red brocket deer *Mazama americana* (Cetartiodactyla, Cervidae)

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ABSTRACT. We tried to amplify mitochondrial, microsatellite and amelogenin loci in DNA from fecal samples of a wild *Mazama americana* population. Fifty-two deer fecal samples were collected from a 600-ha seasonal semideciduous forest fragment in a subtropical region of Brazil (21°20'S, 47°17'W), with the help of a detection dog; then, stored in ethanol and georeferenced. Among these samples 16 were classified as "fresh" and 36 as "non-fresh". DNA was extracted using the QIAamp® DNA Stool Mini Kit. Mitochondrial loci were amplified in 49 of the 52 samples. Five microsatellite loci were amplified by PCR; success in amplification varied according to locus size and sample age. Successful amplifications were achieved in 10/16 of the fresh and in 13/36 of the non-fresh samples; a negative correlation (R = -0.82) was found between successful amplification and locus size. Amplification of the amelogenin locus was successful in 22 of the 52 samples. The difficulty of amplifying nuclear loci in DNA samples extracted

from feces collected in the field was evident. Some methodological improvements, including collecting fresh samples, selecting primers for shorter loci and quantifying the extracted DNA by real-time PCR, are suggested to increase amplification success in future studies.

Key words: Fecal DNA; Molecular ecology; Microsatellite; Cytochrome b; Detection dog

