

## Brazilian Oral Research

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### Abstract

[TANAKA, Jefferson Luis Oshiro](#) et al. Comparative analysis of human and bovine teeth: radiographic density. *Braz. oral res.* [online]. 2008, vol.22, n.4, pp. 346-351. ISSN . doi: 10.1590/S1806-83242008000400011.

Since bovine teeth have been used as substitutes for human teeth in *in vitro* dental studies, the aim of this study was to compare the radiographic density of bovine teeth with that of human teeth to evaluate their usability for radiographic studies. Thirty bovine and twenty human teeth were cut transversally in 1 millimeter-thick slices. The slices were X-rayed using a digital radiographic system and an intraoral X-ray machine at 65 kVp and 7 mA. The exposure time (0.08 s) and the target-sensor distance (40 cm) were standardized for all the radiographs. The radiographic densities of the enamel, coronal dentin and radicular dentin of each slice were obtained separately using the "histogram" tool of Adobe Photoshop 7.0 software. The mean radiographic densities of the enamel, coronal dentin and radicular dentin were calculated by the arithmetic mean of the slices of each tooth. One-way ANOVA demonstrated statistically significant differences for the densities of bovine and human enamel ( $p < 0.05$ ) and for bovine and human coronal dentin ( $p < 0.05$ ). No statistically significant differences were found for the bovine and human radicular dentin ( $p > 0.05$ ). Based on the results, the authors concluded that: a) the radiographic density of bovine enamel is significantly higher than that of human enamel; b) the radiodensity of bovine coronal dentin is statistically lower than the radiodensity of human coronal dentin; bovine radicular dentin is also less radiodense than human radicular dentin, although this difference was not statistically significant; c) bovine teeth should be used with care in radiographic *in vitro* studies.

Keywords : Tooth; Cattle; Humans; X-Rays; Radiography, dental.

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