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Inbreeding and its relationship with oocyte production in the Gir (*Bos indicus*) breed: preliminary results

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The Gir breed is native from India. This breed is characterized by low weight (and thus low nutritional requirements), tolerance to heat and parasites, as well as a potential for milk production under tropical conditions. Live animals were imported to Brazil mainly between 1870 and 1962, but less than 700 cattle were actually brought. Due to the small number of imported animals that were used as founders of Brazilian Gir cattle herd, it is important to study the population structure and to control the inbreeding levels. One of the main consequences of high inbreeding levels in cattle herds is the reduction of the genetic variability, decreasing heterozygosity and causing inbreeding depression. Inbreeding can negatively affect animal breeding programs and cause low genetic gains. The aim of this study was to estimate the coefficient of inbreeding means by the analysis of pedigree of a Gir population, and its possible effects on oocyte yield in Gir donors. The pedigrees of 6,108 Gir animals from a commercial farm of Minas Gerais State, Brazil, were used. The database editing and structuring, as well as the calculation of inbreeding coefficients, were performed using the SAS and CFC software, respectively. The estimated coefficient of inbreeding was 4.49%, with a maximum F of 32.03% based on genealogical information from 1,384 females. From the population studied, 22.65% was considered as endogamic, while 69.21% of the individuals showed F < 5%. The association between inbreeding coefficient and *in vitro* embryo production (IVEP) outcomes is currently under evaluation in this population. Preliminary analyzes have shown that F > 0.06 is associated with a reduction in the average number of total and viable oocytes retrieved per donor. In summary, high coefficient of inbreeding can be found within Gir herds, and the resulting inbreeding depression may also affect oocyte yield in donors, potentially reducing IVEP outcomes.

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