



Effects of polymorphisms of LHR and FSHR genes on sexual precocity in a *Bos taurus* x *Bos indicus* beef composite population

E.P. Marson¹, J.B.S. Ferraz², F.V. Meirelles², J.C.C. Balieiro²
and J.P. Eler²

¹Produção Animal, Colégio Agrícola Senador Carlos Gomes de Oliveira,
Universidade Federal de Santa Catarina, Araquari, SC, Brasil

²Departamento de Ciências Básicas,
Grupo de Melhoramento Animal e Biotecnologia,
Faculdade de Zootecnia e Engenharia de Alimentos,
Universidade de São Paulo, Pirassununga, SP, Brasil

Corresponding author: E.P. Marson
E-mail: epmarson@gmail.com

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ABSTRACT. The purpose of the present research was to investigate the effects of polymorphisms of luteinizing hormone receptor (LHR) and follicle-stimulating hormone receptor (FSHR) genes, evaluated by polymerase chain reaction-restriction fragment length polymorphism in European-Zebu composite beef heifers from six different breed compositions. The polymorphism site analysis from digestion with *HhaI* and *AluI* restriction endonucleases allowed the genotype identification for LHR (TT, CT and CC) and FSHR (GG, CG and CC) genes. A high frequency of heterozygous animals was recorded in all breed compositions for both genes, except in two compositions for LHR. The probability of pregnancy (PP) at first breeding was used to evaluate the polymorphism effect on sexual precocity. The PP was analyzed as a binary trait, with a value of 1 (success) assigned to heifers that were diagnosed pregnant by rectal palpation and a value of 0 (failure) assigned to those that were not pregnant at that time. Heterozygous heifers showed a higher pregnancy rate (67 and 66% for LHR and FSHR genes, respectively), but no significant effects were observed for the genes studied ($P = 0.9188$ and 0.8831 for LHR and FSHR,

respectively) on the PP. These results do not justify the inclusion of LHR and FSHR restriction fragment length polymorphism markers in selection programs for sexual precocity in beef heifers. Nevertheless, these markers make possible the genotype characterization and may be used in additional studies to evaluate the genetic structure in other bovine populations.

Key words: Luteinizing hormone receptor; Composite heifers; Follicle-stimulating hormone receptor; Sexual precocity; Restriction fragment length polymorphism