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Effect of leptin gene polymorphisms on growth, slaughter and meat quality traits of grazing Brangus steers

P.M. Corva[1], G.V. Fernández Macedo[1], L.A. Soria[2], J. Papaleo Mazzucco[3], M. Motter[2], E.L. Villarreal[3], A. Schor[4], C.A. Mezzadra[3], L.M. Melucci[1] and M.C. Miquel[2]

[1]Departamento de Producción Animal, Facultad de Ciencias Agrarias, Universidad Nacional de Mar del Plata, Balcarce, Argentina
[2]Área de Genética, Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Buenos Aires, Argentina
[3]Instituto Nacional de Tecnología Agropecuaria, Balcarce, Argentina
[4]Laboratorio de Carnes, Facultad de Agronomía, Universidad de Buenos Aires, Buenos Aires, Argentina

Corresponding author: P.M. Corva
E-mail: pcorva@balcarce.inta.gov.ar

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ABSTRACT. Leptin is a hormone that affects the regulation of feed intake, energy balance and body composition in mammals. Several polymorphisms in the bovine leptin gene have been associated with phenotypic variance of these traits. We evaluated two known single nucleotide polymorphisms (SNPs) in the leptin gene of 253 grazing Brangus steers. Brangus is a 5/8 Angus-3/8 Brahman composite. Data were collected during two consecutive growth/fattening cycles from two farms in southeast Buenos Aires province, Argentina. One of the markers is in the promoter region of the gene (SNP1) and the other is a non-synonymous polymorphism in exon 2 (SNP2). The traits that we evaluated were live weight gain in the spring, gain in backfat thickness in the spring, final live weight, final ultrasound backfat thickness, final ultrasound rib eye area, carcass weight and length, carcass yield, kidney

fat, kidney fat percentage, backfat thickness, rib eye area, and intramuscular fat percentage. Both markers affected some meat traits; though the only significant associations were of SNP1 with ultrasound rib eye area and of SNP2 with carcass yield and backfat thickness. Under the same conditions as in the present study, leptin markers could be of help only as part of a larger genotyping panel including other relevant genes.

Key words: Beef cattle; Brangus; Leptin; Body composition; Beef quality

