Non-additive genetic effects on weights and performance of a Brazilian *Bos taurus* x *Bos indicus* beef composite

G.B. Mourão, J.B.S. Ferraz[2], J.P. Eler[2], R.S. Bueno[3], J.C.C. Balieiro[2], E.C. Mattos[2] and L.G.G. Figueiredo[4]

Departamento de Ciências Exatas, Escola Superior de Agricultura
"Luiz de Queiroz", Universidade de São Paulo, Piracicaba, SP, Brasil
[2]Departamento de Ciências Básicas, Faculdade de Zootecnia e Engenharia de
Alimentos, Universidade de São Paulo, Pirassununga, SP, Brasil
[3]Universidade Tecnológica Federal do Paraná, Dois Vizinhos, PR, Brasil
[4]Departamento de Melhoramento e Nutrição Animal,
Faculdade de Medicina Veterinária e Zootecnia,
Universidade Estadual Paulista "Júlio de Mesquita Filho", Botucatu, SP, Brasil

Corresponding author: G.B. Mourão
E-mail: gbmourao@esalq.usp.br

ABSTRACT. The aim of the present study was to evaluate the heterosis effects on weaning weight at 205 days (WW, N = 146,464), yearling weight at 390 days (YW, N = 69,315) and weight gain from weaning to yearling (WG, N = 59,307) in composite beef cattle. The fixed models were: RM, which included contemporary groups, class of age of dam, outcrossing percentages for direct and maternal effects, and additive direct and maternal (AM) breed effects; R, RM model, minus AM breed effects, and H, RM model, minus additive breed effects. The estimates for W205 were in general positive (P < 0.01). The R and H models resulted in similar estimates, but they were very different from the ones estimated by the RM model. For W390, the R and H models resulted in general positive estimates (P < 0.05). For WG, the RM model resulted in

general significant heterosis effects ($P < 0.05$). It can be concluded that the RM model seems to supply estimates of better quality ($P < 0.01$).

Key words: Beef cattle; Crossbreeding; Heterosis; Performance