

Effect of Immunocastration Vaccine Administration at Different Doses on Performance of Feedlot Holstein Bulls

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Abstract : The aim of the study is to determine the effect of immunocastration vaccine administration at different doses on fattening performance of feedlot Holstein bulls. Bopriva® is a vaccine that stimulates the animals' own immune system to produce specific antibodies against gonadotropin releasing factor (GnRF). Ninety four Holstein male calves (309.5 ± 2.58 kg body live weight and 267 d-old) assigned to the 4 treatments. Control group; 1 mL of 0.9% saline solution was subcutaneously injected to intact bulls on 1st and 60th days of the feedlot as placebo. On the same days of the feedlot, Bopriva® at two doses of 1 mL and 1 mL for Trial-1 group, 1.5 mL, and 1.5 mL for Trial-2 group, 1.5 mL, and 1 mL for Trial-3 group were subcutaneously injected to bulls. The study was conducted in a private establishment in the Sirvan district of Siirt province and lasted 180 days. The animals were weighed at the beginning of fattening and at 30-day intervals to determine their live weights at various periods. The statistical analysis for normal distribution data of the treatment groups was carried out with the general linear model procedure of SPSS software. The fattening initial live weight in Control, Trial-1, Trial-2 and Trial-3 groups was respectively 309.21, 306.62, 312.11, and 315.39 kg. The fattening final live weight was respectively 560.88, 536.67, 548.56, and 548.25 kg. The daily live weight gain during the trial was respectively 1.40, 1.28, 1.31, and 1.29 kg/day. The cold carcass yield was respectively 51.59%, 50.32%, 50.85%, and 50.77%. Immunocastration vaccine administration at different doses did not affect the live weights and cold carcass yields of Holstein male calves reared under intensive conditions ($P > 0.05$). However, it was determined to reduce fattening performance between 61-120 days ($P < 0.05$) and 1-180 days ($P < 0.01$). In addition, it was determined that the best performance among the vaccine-treated groups occurred in the group administered a 1.5 mL of vaccine on the 1st and 60th study days. In animals, castration is used to control fertility, aggressive and sexual behaviors. As a result, the fact that stress is induced by physical castration in animals and active immunization against GnRF maintains performance by maximizing welfare in bulls improves carcass and meat quality and controls unwanted sexual and aggressive behavior. Considering such features, it may be suggested that immunocastration vaccine with Bopriva® can be administered as a 1.5 mL dose on the 1st and 60th days of the fattening period in Holstein bulls.

Keywords : anti-GnRF, fattening, growth, immunocastration

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