PSXV-1 - The effect of Improvac® at two live weights on testes size, behavior, gains and hormonal profile of beef bulls

Wednesday, Jul 11 10:15 AM – 11:15 AM

Physical castration implies pain, inflammatory reactions and weight losses to the animals. Bopriva® (an anti-gonadotropin releasing hormone vaccine for cattle) is not authorized in Europe; therefore, the aim of this assay was to study the effects of the administration of Improvac® (a similar vaccine for pigs, authorized in Europe) on development, sexual function and temperament in calves vaccinated at two live weights (LW). The assay was a 2x2 factorial design, in which factors were calf LW at start of immunization (Light vs. Heavy) and treatment (Vaccinated vs. Control). Sixteen Serrana calves received a fattening diet (ad lib concentrate and straw) during 164±8.8 days. Calf LW was recorded fortnightly and blood samples were collected monthly to analyze testosterone and IGF-I concentrations. Temperament was scored in a “Chute Test” (calves restrained in a single animal scale) and a “Flight speed Test” over 5 m on days 1, 28, 104 and 146. Subcutaneous fat thickness, scrotal circumference, echotexture and diameter of testes were registered by ultrasounds (days 1, 21, 61, 104, 164). Vaccinated calves had lower weight gains than control ones (1.33 vs. 1.64 kg/d, P<0.01) and higher feed conversion ratios (5.5 vs. 4.7 kg DM/LW kg, P<0.01), regardless of LW at start of immunization. During the last three months of assay, Light-Vaccinated calves had lower plasma IGF-I than Light-Control ones, reflecting the growth differences. Improvac® did not evidence differences in fat thickness or behavior tests, but reduced testis growth and plasma testosterone (10 ng/dL vs. 350 ng/dL, P<0.001). In our conditions, Improvac® was a non-invasive alternative to surgical castration, which reduced bulls’ development, testes growth and testosterone concentrations, regardless of calf LW at start of immunization. These results highlight the potential use of the vaccine at commercial farms, with the aim of fattening together males and females without risk of undesirable pregnancies.

Author(s)

Albina Sanz – Scientist, CITA de Aragón-IA2, Zaragoza, Spain

AN

Agustí Noya – PhD student, CITA de Aragón-IA2

IC

Isabel Casasús – Scientist, CITA de Aragón-IA2

EM

Eva Monleón – Scientist, Facultad de Medicina, Universidad de Zaragoza, Zaragoza, Spain

GR

Guillermo Ripoll – Scientist, CITA de Aragón-IA2