



Effect of a single or two doses of an anti-GnRH vaccine on testicle morpho-functional characteristics in Nelore bulls

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Abstract

Anti-gonadotropin releasing hormone (GnRH) vaccines may reduce undesirable aggressive behavior of males, while avoiding surgical castration side-effects. The objective of this study was to compare testicle morpho-functional characteristics and carcass traits in bulls undergoing a single or two immunizations against GnRH Nelore (n=35) bulls with an average age of 24 months were allocated into three experimental groups: G1(n=12), a single 400 µg dose of anti-GnRH vaccine on day 0; G2 (n=11), a first 400 µg dose of anti-GnRH vaccine on day 0 followed by a second (boost) dose 30 days later; Control group (CG; n=12), 1 mL saline 0.9% at day 0. Every 30 days, from day 0 until slaughter at day 90, the bulls were weighed and underwent testicular biometry, semen collection and analysis, and blood sample collection for testosterone measurement. Immediately after slaughter, the testicles were individually identified, removed, and transport at 15°C to the Laboratory for histopathological analysis. There was a decrease in testicular height (P=0.0476), width (P=0.0021), and in scrotal circumference (P=0.0001), after either a single (G1) or two (G2) active immunizations against GnRH. Both G1 and G2 had lower testosterone concentrations than CG from day 60 on (P<0.01), but in G2 it was also lower than in G1 on day 90 (P=0.0006). All sperm parameters were affected by active immunization against GnRH (P<0.05), and in G2 averages were lower (P<0.05) than in G1 from day 60 on. No sign of seminiferous tubules degeneration was found in any sample from the CG, contrasting with 75.0% and 100.0% of the samples from G1 and G2, respectively. In summary, immunocastration affected testicle morpho-functional characteristics in bulls in a time- and dose-dependent way.

Biography

Emanuel M. Doroteu has completed his PhD at the age of 35 years from Universidade de Brasília and Master Science at the same university. He was professor at the university FACISA and now he

is field veterinarian in northeast of Brazil and works with bovine reproduction and immunology animal system. He has published some papers in reputed journals.