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REVIEWED

Immunocastration of goats using anti-gonadotrophin releasing hormone vaccine

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ABSTRACT

The aim of this study was to evaluate the immuno-sterilizing action of anti-gonadotrophin-releasing hormone (anti-GnRH) vaccine in goats. Eighteen male goats were randomly distributed to receive three treatments: T1 (control) - whole animals, and T2 and T3 - application of 0.5 and 1.0 mL of anti-GnRH vaccine, respectively, with six replicates and one goat per experimental unit. Vaccine was administered at 8 months of age and 30 days after the first immunization. Testicular biometry was evaluated monthly, along with seminal collections, for the physical and morphological evaluation of semen. At the time of slaughter, the testicle were collected, and fragments were measured and removed for histological evaluation. The data were evaluated for normality by the Shapiro-Wilk test, followed by appropriate statistical tests for each variable. A reduction in width and length of the right and left testicles was observed and, consequently, the scrotal circumference of the immunized animals reduced after the second vaccine application ($P < 0.05$). Thirty-days after the first vaccine application, there was a negative effect on seminal production and quality; and 60 days after the second application, a pronounced reduction was observed in all seminal parameters in the vaccinated animals, including azoospermia (83.33% of animals; $P < 0.05$). Vaccine application reduced testicular weight, seminiferous tubule diameter, and gonadosomatic and tubulosomatic index ($P < 0.05$), but did not influence the proportion of testicular parenchyma components ($P > 0.05$). Two applications of the anti-GnRH conjugate are effective for the immunological castration of goats, and the 0.5 mL dose is recommended for use in crossbred goats.