Abstract

Dog overpopulation is a major health problem in developing countries due to the existence of some zoonotic diseases in which dogs act as reservoirs, besides the aggressive events to humans. Distribution, behavior patterns and combined methodologies are needed aspects in the design of successful dog population control programs. Coumestrol is a phytoestrogen which induces alterations in the reproductive male system, when bind to alpha and beta estrogen receptors acting as an agonist or antagonist fashion. Both receptor types also exist in central nerve regions governing sexual behavior of those animals such as the preoptic area, ventro medial nucleous, the amygdala and the olfactory bulb. In this study, 300 mg/kg coumestrol was orally administered to male dogs, once a week for a 4 week period. Dogs were freed for 5 min in a 9 m2 area having a recipient containing vaginal discharges from estrous dog females and other similar vessel containing sterile saline solution. Smelling latency time for each recipient, smelling frequency and territory marking in response to stimulus, was recorded. At the end of the test, semen was collected and evaluated. A significant difference (P < 0.005) in smelling latency time and smelling frequency to the vaginal discharge was found; sperm count decreased from 518.4 ± 215.4 × 10^6 to 57.6 ± 50.4 × 10^6 at week 4 and the abnormal sperm morphology increased from 14.7 ± 3.3% at 0 week to 60.0 ± 20%. In conclusion, 300 mg/kg coumestrol given orally to male dogs for 4 weeks induces alterations in the olfactory behavior along with an oligo and teratospermic effect.

Keywords

OLFATORY EXPLORATION, COUMESTROL, DOGS, SPERM PRODUCTION, VAGINAL MUCUS.