

Seasonal variations of the seminiferous tubules morphometry in domestic rams (*Ovis aries*)

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Cryosurvival of spermatozoa in some small ruminant species is poorer at the onset and in the middle of the rutting season, when plasma testosterone levels are the highest, than at the end of the rutting season coinciding with fall of testosterone levels. We hypothesized that variation in sperm cryoresistance may be related to changes in the seminiferous epithelium at the end of the rutting season. The aim of the present work was to study morphological changes of the seminiferous tubules, within the rutting season, at high (July) and low (December) plasma testosterone concentrations in Merino sheep (*Ovis aries*). There was an effect of season on cell density inside the seminiferous tubules of Merino sheep. Immunohistochemistry results of PCNA and Ki67 (proliferation markers of spermatogonia and spermatocytes) in ram testis showed a higher expression coinciding with the period of high testosterone concentrations. In contrast, GATA-4 (proliferation marker of Sertoli cells) increased at the end of the rutting season, when testosterone levels were decreasing. Although domestic rams are able to produce good quality ejaculates throughout the year, a marked testis regression was quantified in biopsied testis with low testosterone levels.