In vitro supplements improves motility and progressive score of spermatozoa in Jermasia goats

ABSTRACT

Several supplement intakes exert a marked effect on sperm quality, and this is useful in Artificial Insemination practice which is widely used in goat farming. The aim of this study was to determine the effect of in vitro supplementations in different concentrations (selenium, L-Arginine and Vitamin E) on sperm qualities; motility and progressive score of Jermasia goats. Results shown from observation at time interval; 2, 2.5, 3, 4 and 6 hours that the percentage of motility and progressive score of spermatozoa treated with 0.01 mM L-Arginine and 1 mg/ml vitamin E were significantly higher between 2 and 3 hours 0.01 mM L-Arginine and 1 mg/ml vitamin E compared to Control and other supplementation groups ($p<0.05$). Meanwhile, after 2 hours, the motility and progressive score of 0.6 ppm selenium were declined drastically compared to other groups ($p < 0.05$). The combination of L-Arginine and vitamin E supplements leads to increase productions of Nitric Oxide, hence stimulates the metabolism of glucose and triggering the ATP production in the sperm. In conclusion, both L-Arginine and vitamin E supplements are significantly stimulated and the motility of fresh semen of goats in a concentration-dependent manner is improved.

Keyword: Selenium; L-Arginine; Antioxidant