

THE EFFECT OF ADDING DIFFERENT LEVELS OF AQUEOUS EXTRACT OF PANAX GINSENG IN THE EXTENDER ON SPERM MOTILITY AFSHARI RAMS AT 5 ° C

Saeed Safavi pour^{1*}, Akbar Pirestani², Fariborz Moattar³, Hadi Fatollahi⁴

^{1,2} Department of Animal Science, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran.

³ Faculty of Pharmacy, Medical University of Isfahan - Iran.

⁴ Agricultural and Industrial Research school-Nuclear science and technology Research Institute of Iran, Karaj, Iran.

* Email Address: damyar.info@gmail.com

INTRODUCTION

Panax ginseng, a member of the *Araliaceae* family, At least 2000 years, *P. ginseng*, known as Korean ginseng, has been evaluated as a medicinal plant in traditional oriental medicine (Yun,2001), Since the beginning of the 20th century, the constituents of *ginseng* root have been investigated and several classes of compounds have been isolated such as triterpene saponins; essential oil-containing polyacetylenes and sesquiterpenes; polysaccharides; peptidoglycans; nitrogen-containing compounds; and various ubiquitous compounds such as fatty acids, carbohydrates, and phenolic compounds (Tang et al,1992). Sperm survived for a short time in undiluted semen, and semen slow cooling to a temperature of 5°C will cause the death of many spermatozoa. Thus, extender is suitable which sperm parameters preserved during cooling and freezing. The aim of this study was to investigate the effect of *Panax Ginseng* extract in extender on sperm motility of Afshari ram.

MATERIALS AND METHODS

In this study, 4 Afshari rams with a mean of 5 ± 50 kg weight and 3 to 4 years, sperm was collected by electrical ejaculation. After extraction of the medicinal plant at a concentration of 1%, 3% and 5%, each concentration was added to the sperm extender as separately and one group were considered as a control. Sperm motility was evaluated at zero time (immediately post ejaculation) and 24 hours post ejaculation by CASA software.

RESULTS AND DISCUSSION

The results of this study shows that levels of 3% and 1% *Panax Ginseng* extract was significantly increased ($p < 0.05$) compare to control and other treatment groups at time zero and 24 hour post ejaculation, respectively. On the other hand, *ginseng* enhances the nitric oxide (NO) synthesis in the endothelium, and nitric oxide has a protective role as an antioxidant. Indeed, *ginsenosides* have contain L-arginine that it is the source of NO and a constitutive NO synthase appears to be involved in sperm motility, metabolism, capacitation, and acrosome reaction (Kim et al, 2009). Therefore, the addition of *Panax Ginseng* extract in extender was advisable to improve sperm parameters in rams.

Keywords: Ram Sperm, *Panax Ginseng*, Extender, Motility.

REFERENCES

- Yun TK .2001. Brief introduction of *Panax ginseng* C. A. Meyer. J .Korean Medecin. Sci. 16: S3-S5.
- Tang W, Eisenbrand G .1992. Chinese Drugs of Plant Origin. Vol .Springer-Verlag, Berlin pp. 711-737.
- Kim YK, Yoo DS, Xu H, Park NI, Kim HH, Choi JE, Park SU (2009) .(Ginsenoside content of berries and roots of three typical Korean ginseng (*Panax ginseng*) cultivars. Nat. Prod. Commun. 4: 903-906.