

Effect of various eCG doses on reproductive performance of Kohgiluyeh and Boyerahmad province native goats at during the summer and spring seasons

Habibizad, J.¹; Hoseini, Gh.²; Zarrin, M.¹; Ostadyan, S.² and Mearmar, M.¹

Received: 18.09.2018

Accepted: 22.04.2019

Abstract

To investigate the effect of different doses of eCG on reproductive performance of Kohgiluyeh and Boyer-Ahmad province native goats, 75 goats (2-3 years age and 46 ± 1.9 Kg mean weight) and 75 goats (3-4 years age and 45 ± 2.6 Kg mean weight) were chosen during the summer season (first experiment) and during the spring season (second experiment), respectively. The estrous cycle of goats was synchronized by progesterone sponges in an 18 days period. In each experiment, one day before removing sponges, 300, 400, 500 and 600 IU of eCG were injected intramuscularly to the goats in experimental groups, and one group was assumed as control group. The results indicated that the groups which received 500 and 600 IU of eCG and the control group all had less kidding compared with the remaining groups. The fecundity rate in treatment groups that received 400 and 500 IU of eCG (1.2 and 1.13, respectively) was also more than the remain groups. During the spring season, the results indicated that all the goats which received eCG doses more than 300 IU cycled in 42 hours and in the groups, which received 500 and 600 IU of eCG doses, the onset of estrus was significantly earlier compared to other groups. The results indicated that the eCG dose up to 500 IU level, the percentage of triple kidding was increased. Fecundity and prolificacy rate among different treatment groups tended to significant difference and these characteristics were higher in the group receiving 500 IU of eCG, compared to other groups. In conclusion, the result of this study indicated that 400 and 500 IU of eCG had the most effect on increasing the pregnancy rate, twin kidding, and fecundity rate of native goats during the late summer and the beginning of spring seasons, respectively.

Key words: Reproductive performance, eCG, Pregnancy rate, Twinning rate, Goat

1- Assistant Professor, Department of Animal Science, Faculty of Agriculture, Yasouj University, Yasouj, Iran

2-Expert, Department of Animal Science Research, Agriculture and Natural Resources Research Center, Kohgiluyeh and Boyer-Ahmad Province, Yasouj, Iran

Corresponding Author: Habibizad, J., E-mail: j_habibi58@yahoo.com

References

- Abecia, J.A.; Forcada, F. and Gonzalez-Bulnes, A. (2012). Hormonal control of reproduction in small ruminants. *Animal Reproduction Science*, 13: 173-179.
- Contreras-Villarreal, V.; Mmza-Herrera, C.A.; Rivas-Munoz, R.; Angel-Garcia, O.; Luna-Orozco, J.R.; Carrillo, E. et al. (2016). Reproductive performance of seasonally anovular mixed-bred dairy goats induced to ovulate with a combination of progesterone and eCG or estradiol. *Animal Science Journal*, 87: 750-755.
- Husein, M.Q. and Ababneh, M.M. (2008). A new strategy for superior reproductive performance of ewes bred out-of-season utilizing progestagen supplement prior to withdrawal of intravaginal pessaries. *Theriogenology*, 69: 376-383.
- Kara, C.; Orman, A.; Topal, E. and Carkungoz, E. (2010). Effects of supplementary nutrition in Awassi ewes on sexual behaviors and reproductive traits. *Journal of Biological and Environmental Sciences*, 4: 15-21.
- Karaca, F.; Tasal, I. and Alan, M. (2009). Preliminary report on induction of estrus with multiple eCG injections in Colored Mohair goats during the anestrus season. *Animal Reproduction Science*, 114: 306-310.
- Kermani-Moakhar, H.; Kohram, H.; Zareh-Shahneh, A. and Saberifar, T. (2012). Ovarian response and pregnancy rate following different doses of eCG treatment in Chall ewes. *Small Ruminant Research*, 102: 63-67.
- Khalilavi, F.; Mamouei, M.; Tabatabaei, S. and Chaji, M. (2016). Effect of different progesterone protocol and low doses of equine Chorionic Gonadotropin (eCG) on oestrus synchronization in Arabian ewes. *Iranian Journal of Applied Animal Science*, 6: 855-861.
- Kridli, R.T. and Al-Khetib, S.S. (2006). Reproductive responses in ewes treated with eCG or increasing doses of royal jelly. *Animal Reproduction Science*, 92: 75-85.
- Mohtar, M.S.M.; Haron, A.W.; Yusoff, R.; Bakar, M.Z.A. and Malik, A. (2014). Effect of high doses of equine chorionic gonadotrophin (eCG) treatments on follicular developments, ovulation and pregnancy rate in boer goats. *African Journal of Biotechnology*, 13: 1374-1378.
- Nosrati, M.; Tahmorespoor, M.; Vatandoost, M. and Behgar, M. (2011). Effects of PMSG doses on reproductive performance of Kurdi ewes artificially inseminated during breeding season. *Iranian Journal of Applied Animal Science*, 1: 125-129.
- Rahman, M.R.; Rahman, M.M.; Wan Khadijah, W.E. and Abdullah, R.B. (2017). Effect of supplementation of hCG or GnRH on ovulation and subsequent embryo production of eCG superovulated goats. *Indian Journal of Animal Research*, 51: 438-443.
- Simonetti, L.; Forcada, F.; Rivera, O.E.; Carou, N.; Alberio, R.H.; Abecia, J.A. et al. (2007). Simplified superovulatory treatments in Corriedale ewes. *Animal Reproduction Science*, 45: 95-113.
- Vahedi, V.; Abdi Benemar, H. and Ghanbari, R. (2017). The effects of eCG and GnRH administration on reproductive performance of Khalkhali goat during breeding season. *Animal Science Researcher*, 27: 55-67. (In Persian)