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Induction of estrus and fertility of Shal ewes using progesterone injections or intravaginal sponge followed by laparoscopic AI during non-breeding season

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Abstract

The objective of this study was to compare two estrus induction protocols in Shal ewes (Iranian native breed) during the non-breeding season using progesterone injections and an intravaginal sponge. Non pregnant ewes (n=180), considering their age and BCS were stratified randomly into two groups: progesterone injection (n=54; age: 33.0±3.21 months; BCS, 2.5±0.11) and vaginal sponge (n: 54; age: 37.5±3.58; BCS: 2.6±0.11). The progesterone injection group received four consecutive injections of progesterone (50 mg, SC), 3 days apart. Ewes in the sponge group received an intravaginal sponge (40 mg Flugestone acetate) for 14 days. An intramuscular injection of eCG (300 IU) was given concurrent with sponge withdrawal or 48 hrs after the last progesterone injection. Twelve hours after eCG, estrus was detected by rams equipped with harnesses. Laparoscopic AI was performed 50-56 hrs after eCG injection by fresh semen (100×106 sperm in 0.2 ml per uterine horn). Pregnancy was diagnosed by rectal ultrasonography, 35 days after insemination. The incidence of estrus (74.1%) was greater in the sponge group than injection group (38.9%). There were no differences between the two groups in terms of time to estrus and time to AI after eCG injection. There was no differences between the two groups in the interval from estrus to AI, fertility, prolificacy, and fecundity. Fertility was greater in ewes that were inseminated within 24 hrs after estrous detection in the progesterone injected group (76.2%) compared to the sponge group (42.5%). In summary, due to the similarity in fecundity, as the final indicator of reproductive performance, and less cost, availability and no intervention of reproductive tract, progesterone injection method could be advised for inducing estrus in ewes during the non-breeding season.

Key word: Estrus induction, Progesterone injection, Sponge, Non-breeding season, Shal ewes

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