Summary of the DVM thesis No 12019 , Factually of Veterinary Medicine, Urmia University.
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Title of thesis: Studying the time of ovulation in ewes synchronized with CIDR or sponge and conception rate following laparoscopic insemination with frozen-thawed semen outside the breeding season.

Summary:

The purpose of the current study was to determine the ovulation time following synchronization with two different vaginal devices, its relation to progesterone amounts, and conception upon intrauterine insemination with frozen/thawed semen samples. Estrus and ovulation of Qezel females were synchronized using CIDR (n=11) or vaginal sponge (n=11) insertion for 12 days, plus eCG (500 IU) administration at devices removal (Day 0). Presence and sizes of the ovarian follicles were evaluated through the transvaginal approach at -12, 0, and continued at 30-33, 53 -<56, 56-≤60, >60-≤64, >64-≤67, >67-≤71, and >71-75 h timespans after eCG administration. Progesterone amounts were measured in sera samples at -12, 0, +2, and +11. Laparoscopic fixed time insemination (FTI) was done with frozen/thawed samples, 60.5 ± 0.5 h after eCG therapy. The CIDR-treated group initiated and completed ovulations earlier compared to sponge-received females (Median: 64 vs. 71 h; mean: 64.11 vs. 69.26 h; $P < 0.05$). Furthermore, ewe lambs were ovulated earlier compared to ewes in the sponge received group (66.71 vs. 71.5; $P = 0.023$). Mean sizes of ovulatory follicles and corpora lutea were not affected by device types. Progesterone concentrations were not differed between treated groups at -12, +2, and +11 Days. Higher amounts of progesterone were observed in CIDR group compared to sponge received group at device removal (2.68 ± 0.12 vs. 0.30 ± 0.01 ng/ml; $P < 0.001$). The conception was confirmed in 2/10, and 5/11 females of sponge and CIDR treated females, respectively. In conclusion, types of progestogens influences the ovulation time after cessation, and the result of FTI via laparoscopic approach with frozen/thawed samples is influenced by the ovulation time. The optimum timespan for FTI, should be chosen according to the device types during non-breeding season.

Key words: Estrus synchronization, Ovulation time, CIDR, Vaginal sponge, Laparoscopic insemination.