Effect of estrus behavioral pattern on pregnancy rates in synchronized Angora goats

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The assisted reproductive biotechnologies to control reproduction in small ruminants are well reported and useful tools to increase farm profitability. Fixed time artificial insemination (FTAI) is the most common method. However, FTAI does not contain estrus behavioral pattern before insemination. The limitation of the hormonal synchronization displaces different estrus behavior patterns and interferes with FTAI protocol. In addition, the complex anatomy of the cervical canal restricts the passage of the insemination instruments during the different time of insemination periods. Therefore, we aim to evaluate the estrus behavioral pattern and its effect on pregnancy rates in angora goats, inseminated with fresh semen.

The experiment carried out with angora does (n: 227) which were randomly divided into four groups; group 1 (PT5 - n: 50), group 2 (PT7 - n: 45), group 3 (PT9 - n: 48) and group 4 (PT11 – n: 96). Hundred and fifty µg of d-cloprostenol i.m. was administered at day 0 and all animals received intravaginal sponges (Chronogest, 20 mg flugestone acetate). All animals received IM 500 IU of PMSG (Oviser, Hipra-Turkey) 24 hours before sponge removal. Estrus behavioral patterns were recorded and categorized as three different scores (0: zero 1: mild and 2: severe) of standing heat, tail wagging, urination, courting behavior, peri-vulvar discharge, vulvar edema and vaginal discharge 24 hours of sponge removal respectively. FTAI was carried out with 0,25 ml fresh diluted semen at 48 h from sponge removal.

Standing heat and tail wagging were the most predominant signs of synchronized estrus. Highest pregnancy rate was recovered with 79,4 % according to vulvar edema zero, vaginal discharge mild and severe with 67 % and 70,3 % respectively. Moreover, significantly higher vaginal discharge was noticed and came along with a close relation with vaginal edema as well ($P < 0.05$). Both standing heat and courting behavior effected the pregnancy rates significantly higher ($P < 0.05$) in the treatment groups.

Results indicate that vulvar edema, vaginal discharge, tail wagging, standing heat, courting behaviors are reliable signs with minimum 55,5 % of pregnancy rates for artificial insemination protocols. However, vulvar edema and vaginal discharge of the doe and time from synchronized estrous to ovulation must be considered for estrous cycle manipulation and artificial insemination of Angora goats.

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