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EFFECT OF PROGESTERONE–PMSG ESTRUS SYNCHRONIZATION ON LITTER SIZE IN ALPINE FRENCH AND SAANEN GOATS

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Abstract: The objective of this study was to evaluate the influence of an estrus synchronization protocol using progesterone and PMSG on litter size in Alpine French and Saanen goats under the conditions of a Western Romanian farm. The research was conducted in 2025 on a dairy goat farm located in Traian Vuia, Timiș County, Romania. A total of 40 adult does were included and divided into two main groups: a treated group of 20 goats (10 Alpine French, 10 Saanen) and a control group of 20 goats (10 Alpine French, 10 Saanen). In the treated group, estrus synchronization was performed by inserting intravaginal progesterone sponges (CIDR) on Day 0, removing them on Day 10 and administering PMSG at a dose of 350 IU, followed by natural mating on Days 11–14, at the onset of estrus. The control group was subjected only to natural mating, without any hormonal treatment. The results showed an average litter size of 2.0 per doe in the treated Alpine French group and 1.9 per doe in the treated Saanen group, compared with 1.5 in the Alpine French control group and 1.4 in the Saanen control group. The applied protocol therefore increased litter size in the treated groups compared with the controls, suggesting a beneficial effect of the progesterone–PMSG combination on reproductive performance in the studied goat breeds.

• Introduction

In goats, cyclic ovarian activity is influenced by season, photoperiod and body condition, which can lead to seasonal anestrus and a reduction in the incidence of estrus. In this context, the present study aims to evaluate the influence of an estrus synchronization protocol using progesterone-containing vaginal sponges and PMSG on litter size in Alpine French and Saanen goats, compared with control groups in which only natural mating was used.

• Material and method

The study was carried out in 2025 on a dairy goat farm located in Traian Vuia, Timiș County, Romania. The experimental herd consisted of 40 clinically healthy adult goats belonging to the Alpine French and Saanen breeds.



The goats were divided into two main groups, treated and control, each group consisting of 20 animals.

In the treated group, on Day 0 progesterone-containing CIDR vaginal sponges were inserted and left in situ for 10 days. On Day 10, the sponges were removed and all does in the treated group received an intramuscular injection of PMSG at a dose of 350 IU per animal.



In the control group, the goats were monitored daily for the detection of spontaneous estrus, and natural mating was carried out when the animals showed clear signs of heat, without the use of any induction or synchronization treatment.

• Results and discussions

Application of the estrus synchronization protocol with progesterone and PMSG in Alpine French and Saanen goats resulted in an increased litter size in the treated groups compared with the control groups.

In the treated Alpine French group (n = 10), litter size ranged from 1 to 3 kids per doe, with a total of 20 kids and a mean prolificacy of 2.0 kids per doe.

The situation was similar for the Saanen breed. In the treated Saanen group (n = 10), litter size ranged from 1 to 3 kids per doe, with a total of 19 kids and a mean prolificacy of 1.9 kids per doe.

The obtained results are consistent with data from the scientific literature, which indicate that protocols based on intravaginal progestagens followed by PMSG/eCG administration improve estrus expression and increase prolificacy in goats by stimulating and synchronizing ovulation.



• Conclusions

The estrus synchronization protocol based on progesterone-impregnated vaginal sponges and PMSG applied to French Alpine and Saanen goats resulted in higher prolificacy in the treated groups compared with the control groups subjected exclusively to natural mating. Under the conditions of the studied farm, French Alpine does showed, on average, slightly higher prolificacy than Saanen does in both treated and control groups, which can be taken into account when designing reproductive strategies in mixed herds. The tested protocol can be recommended as a useful tool to improve reproductive performance in dairy goats in western Romania, provided it is adjusted to the specific conditions of each farm and that the recommended doses and usage guidelines are strictly followed.