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Short-Term CIDR Treatment Improves Fertility and Prolificacy of Ewes After Natural Mating

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Abstract:

This study evaluated the effect of a short-term CIDR + PMSG protocol on ewe fertility following natural mating. The treatment group showed increased litter size, higher total lamb production, and improved synchronization. These findings demonstrate the effectiveness of CIDR-based protocols in enhancing reproductive performance.

Introduction

Greece ranks third among European Union countries in sheep population,
with approximately 9 million animals (Eurostat, 2020).
Reproductive efficiency is a key factor in sheep production systems.
Estrus synchronization using controlled internal drug release (CIDR) devices is widely applied to improve reproductive performance and flock management

Objective

This study aimed to evaluate the impact of a short-term CIDR + PMSG protocol on fertility and reproductive performance in ewes following natural mating.

Materials and Methods

- **Animals:** 100 crossbred ewes (Lacaune × Assaf × Lesvos)
- **Age:** 4 years
- **Body Condition Score:** 4.0

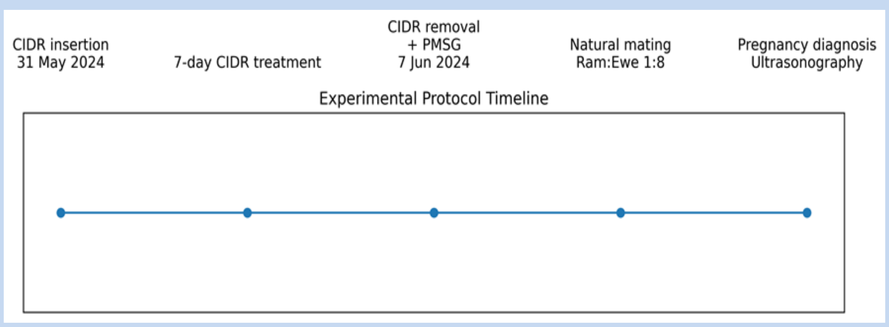
- **Experimental Design:**

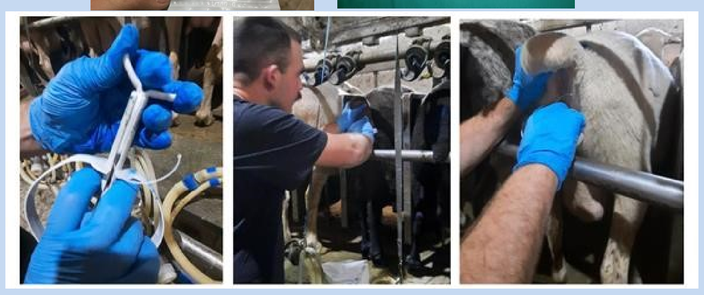
CIDR + PMSG (n=50) | **Control (n=50)**

Natural Mating

Fertility Outcomes (Prolificacy, Lambing)

- Animals were maintained under identical feeding and environmental conditions





Results and Discussion

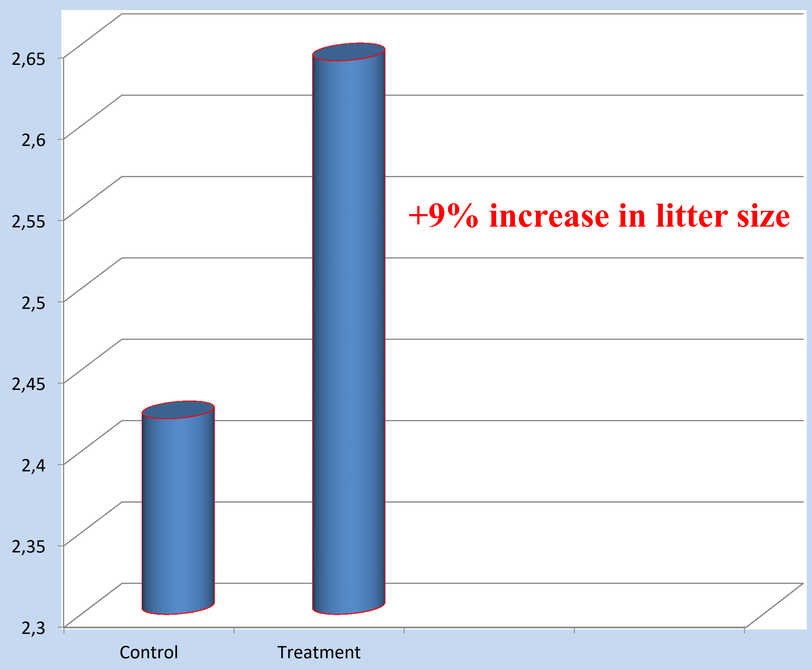
The CIDR + PMSG protocol resulted in improved reproductive performance compared to natural estrus. Ewes in the treatment group exhibited a higher litter size (**2.64 vs 2.42**), increased total lamb production (129 vs 119), and a more synchronized and shorter lambing period (**Table 1**).

Table 1. Reproductive performance of ewes

Parameter	Control Group (n=50)	Treatment Group (n=50)
BCS (mean)	4.0	4.0
Pregnancy rate (%)	100%	100%
Lambing rate (%)	100%	100%
Average number of lambs per lambing	2.42 ± 0.50	2.64 ± 0.49
Total number of lambs	119	129
Start of lambing	31/10/2024	01/11/2024
End of lambing	21/11/2024	24/11/2024
Duration of lambing period (days)	24	22
Days to lambing	168	165
Lambing complications	No	No

Overall, the protocol increased prolificacy by approximately 9%, highlighting its practical value in sheep production systems.

Average Litter Size per Ewe



Conclusions

The CIDR + PMSG protocol significantly enhances reproductive performance and prolificacy in ewes, without negatively affecting animal health.
It represents an effective and practical tool for improving productivity in commercial sheep farming systems.

Implications

- Suitable for commercial sheep farming systems
- Supports improved reproductive efficiency and planning
- Contributes to increased economic returns

Future Research

- Evaluation across different breeds and age groups
- Application in larger commercial flocks
- Cost-effectiveness comparison with alternative protocols
- Long-term monitoring of offspring performance