

Comparison of pregnancy rate of two intravaginal synchronization devices under anoestrus conditions in a commercial meat sheep farm.

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INTRODUCTION

Producing lambs throughout the year, especially in the second half when prices are better, is a fundamental pillar for the profitability and sustainability of meat sheep farms. To achieve this, planning and controlling the reproduction of the herd is needed. In addition, reproductive planning allows for a better distribution of farm labor, food resources and other agricultural tasks. To achieve this, inducing and synchronizing female estrus, according to the availability of rams, is needed to achieve the highest number of pregnancies per batch.

OBJECTIVE

The objective was to compare the fertility obtained with two different estrus synchronization devices: intravaginal progestagen-impregnated sponges and progesterone-loaded silicon-based devices under seasonal anoestrus period conditions.

MATERIALS AND METHODS

A total of 300 Merino ewes from a farm located in Cáceres (Spain) with three mating periods per year participated in the study (4 mating batches, 75 ewes/ batch on average). Inclusion criteria: lambing-breeding Interval >60 days and body condition score (BCS) above 2.25.

All sheep and rams were subjected to an energy flushing, starting 15 days before the beginning of the mating period, consisting of 300 gr/day of maintenance concentrate (15% crude protein) to complement grazing.

The ewes were blindly and randomly allocated stratified by BCS to one of the study groups: Chronogest[®] 20mg-CHG group (CHG) or CIDR[®] Ovis (CIDR). Both intravaginal progestagen devices were removed after 14 days. After removal, a dose of 440 IU PMSG (Foligon[®], MSD Animal Health) was applied in both groups.

Fertility was calculated based on the ultrasonographic scanning of pregnancy at day 40 after ram's removal for each mating batch and treatment group. The data were analyzed using ANOVA for the comparison of means using the statistical program IBM SPSS Statistics, version 25.

Intravaginal progestagen devices achieved high pregnancy rates during the seasonal anoestrus period in beef ewes. Moreover, synchronization with CHG tended to be significantly better ($p < 0.10$) than CIDR, at overall level, with consistent results in the different mating batches.



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RESULTS

It is possible to achieve high fertility results under seasonal anoestrus conditions in Merino meat sheep, by using an estrus synchronization protocol.

The better average overall fertility results, as expressed in pregnancy proportion, were achieved in the CHG* group (0,92) compared with the CIDR* group (0,86) (Table 1).

Both treatment groups in each batch were homogeneous based on BCS and parity. Consistently better results throughout the different dates of the mating batches were found for CHG* group (min 83.8- max 97.4% pregnancy rate) compared with the CIDR* group (min 70,3- max 92,1% pregnancy rate) (Table 2 and Figure 1).

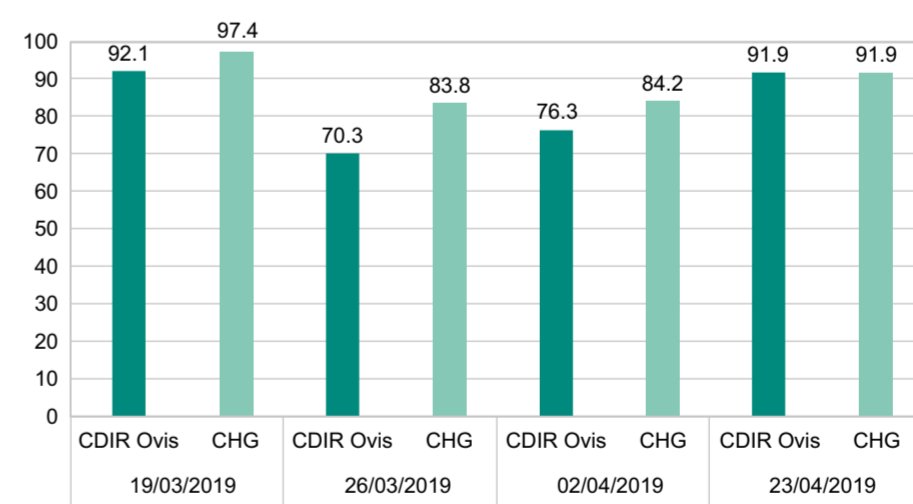
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TABLE 1. Average fertility results based on proportion of pregnancy diagnosis and associated standard deviation (SD) at ultrasonographic scan by treatment group at day 40 after ram's removal.

Fertility				
CHG		CIDR		Significance level
N	Average ± SD	N	Average ± SD	
145	0,92 ± 0,022	144	0,86 ± 0,029	P=0,084

FIGURE 1. Fertility results, measured as the percentage of pregnant ewes by ultrasonography 40 days after ram's removal, in the different dates of the mating batches and study groups.



* CHG = Chronogest 20mg (MSD AH) and CIDR Ovis (Zoetis).

TABLE 2. Description of different mating batches and treatment groups and their main fertility results based on probability of a positive pregnancy diagnosis at ultrasonographic scan at day 40 after ram's removal.

Number ewes	Batch	Study group	BCS	Date starting synchronization	Ultrasonography				
					Pregnant		Open		Non present
					N	%	N	%	
38	2	CIDR	2,78	19/03/2019	35	92,1	1	2,6	2
38		CHG	2,75		37	97,4	0	0,0	1
37	3	CIDR	3,30	26/03/2019	26	70,3	10	27,0	1
37		CHG	3,28		31	83,8	5	13,5	1
38	4	CIDR	3,19	02/04/2019	29	76,3	6	15,8	3
38		CHG	3,16		32	84,2	4	10,5	2
37	5	CIDR	3,00	23/04/2019	34	91,9	3	8,1	0
37		CHG	3,10		34	91,9	2	5,4	1