Efficiency of superovulation protocols using 250, 333 or 400 IU pFSH in White Dorper ewes during seasonal anestrus

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INTRODUCTION

This study aimed to evaluate the superovulatory efficiency of three superovulation protocols using 250, 333 or 400 IU of pFSH.

MATERIAL AND METHODS

A total of 48 Dorper ewes received intravaginal progesterone device (P4; 0,36 g; Primer®, Agener União Saúde Animal, Brazil) for nine days and six decreasing doses (25, 25, 15, 15, 10, 10%) of 250 (G250, n=16); 333 (G333, n=16) or 400 IU (G400, n=16) of pFSH i.m. (Pluset®, Biogénesis Bagó, Brazil) plus two doses of 37.5 μg of d-cloprostenol (Prolise, Agener União Saúde Animal, Brazil) i.m., concomitantly with the 5th and 6th doses of pFSH. Animals also received 50 μg of analog of GnRH (Gestran Plus®, Agener União Saúde Animal, Brasil) i.m. 24 h after the P4 removal.

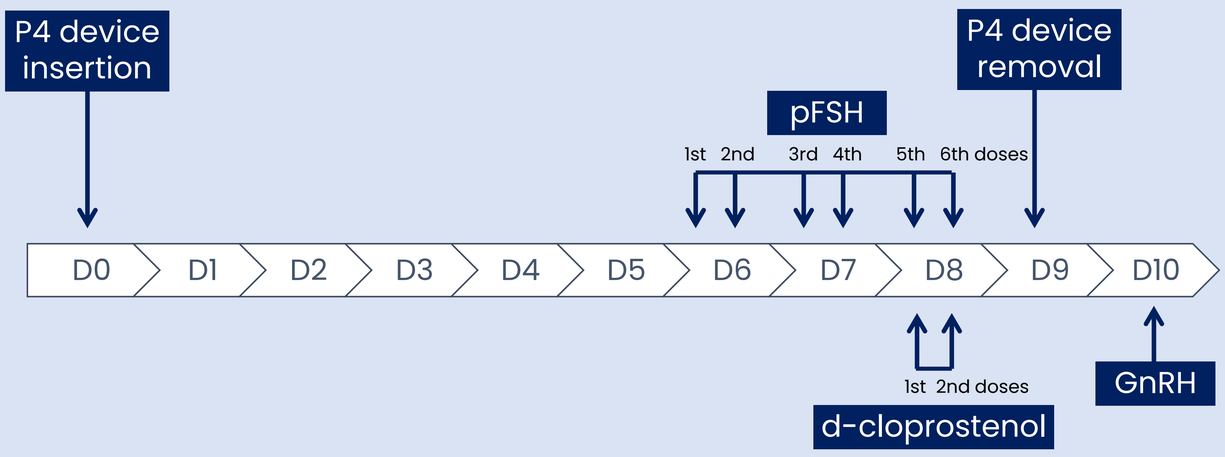

Fig. 1. Superovulation protocol design.

Ewes were checked for estrus behavior and were naturally mated twice a day during 72 h. All animals received a cervical relaxation containing 37.5 μg of d-cloprostenol i.m. plus 0.0 or 0.5 mg of estradiol benzoate (RIC-BE®, Agener União Saúde Animal, São Paulo, Brazil) i.m. 16 h before embryo recovery and 50 IU of oxytocin (Ocitocina Forte UCB®, UCBVet, Brazil) i.v. 20 min before embryo recovery. Non-surgical embryo recovery (NSER) was performed eight days after P4 device withdrawal. Corpora lutea (CL) were counted by transrectal ultrasonography 24 h before NSER.

Data express as percentage and mean and standard error were analyzed, respectively, by Fisher exact test and analysis of variance, followed by Tukey test, at 5% significance level.

RESULTS

A total of 97.9% of animals presented estrus. The mean number of CL/ewe was higher in G333 and G400 groups in comparison to G250 ($P<0.05$), but was similar in animals successfully flushed ($P>0.05$). NSER was successfully performed in 50.0% (24/48) of animals.

Table 1. Reproductive parameters of White Dorper ewes submitted to superovulation protocol and non-surgical embryo recovery (data presented as percentage and mean ± SEM).

	Animals presenting estrus (%)	CL/ewe (all animals)	CL/ewe (flushed animals)	Structures recovered/ ewe	Viable structures recovered/ ewe
G250	93.7	6.1±1.7^{a}	6.0±1.2	2.7±1.3	2.3±1.1
G333	100	9.8±1.5^{b}	11.4±2.4	6.6±2.5	5.4±2.4
G400	100	12.4±1.5^{b}	12.0±1.4	6.0±1.3	4.4±1.3

Different superscripts differ significantly ($P<0.05$).

CONCLUSION

Following data suggest that the use of pFSH at concentrations of 333 or 400 IU are more effective for superovulation in White Dorper ewes.

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