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RESPONSE TO OESTRADIOL IN EWE LAMBS

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The oestrous and ovarian responsiveness to exogenous progesterone and 17 β -oestradiol benzoate (ODB) was studied in a total of 55 low fertility and 64 high fertility 5- to 6-month-old Romney ewe lambs, differentiated according to the lamb production record of their dams. Five treatment groups were compared: 20, 40 and 80 μ g ODB injected intramuscularly on the day of removal of a 375 mg progesterone-impregnated subcutaneous implant¹ inserted for 14 days, progesterone implant alone, and untreated controls. Observations of behavioural oestrus were made at intervals of 4 h for a period of 5 days following treatment in March. The ovaries were examined at laparotomy on the 5th day.

Anovulatory oestrus was induced in all lambs given ODB, whereas lamb in the remaining two treatment groups did not show oestrus. The oestrous response was dose-dependent ($P < 0.001$). The mean duration of oestrus was 37.7, 46.5 and 57.8 h, and mean time to onset of oestrus was 17.6, 14.3 and 11.5 h, following 20, 40 and 80 μ g ODB, respectively. Duration and time to onset of oestrus were significantly correlated ($r = -0.58$).

Ovarian follicles of 3 mm diameter or greater were present in 47.8% of untreated lambs, with the largest follicle measuring 5 mm diameter. There was no significant difference following progesterone treatment alone (56.0%), but ODB caused a reduction to 9.9% ($P < 0.01$). It is assumed that this reflected a suppression of pituitary gonadotrophin release.

No significant correlation was found between oestrous or ovarian measurements and fertility ranking, and no treatment initiated cyclic activity or affected subsequent spontaneous hogget oestrous behaviour.

¹"Sil-Estrus", Abbott Laboratories.