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A STUDY ON THE BREEDING PERFORMANCE
OF ROMNEY AND BORDER LEICESTER CROSS ROMNEY
EWE LAMBS AFTER CIDR TREATMENT

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ABSTRACT

The reproductive performance of 117 Border-Leicester X Romney (BLX) and 91 Romney ewe hoggets in 1984 and 108 BLX and 101 Romney in 1985, was studied after treatment with controlled internal drug releasers (CIDRs) containing progesterone or with polyurethane sponges containing medroxyprogesterone acetate (MAP). To induce and synchronise oestrus at the beginning of the breeding season, progestagens were administered for 11-12 days. The animals were joined with teaser rams or with entire rams and data collected on the occurrence and synchronization of oestrus, conception and lambing performance.

In 1986, 36 lambs of each of the Romney or BLX genotypes were used in a study to determine the time of ovulation after treatment with CIDRs either with or without 200 i.u. PMSG injected at CIDR withdrawal. Laparoscopies were carried out one or more times at 54,60,66,72 hours and one week after CIDR withdrawal to determine the occurrence of ovulation. The release of progesterone from the CIDR was monitored in blood samples from entire animals and from ovariectomised animals during treatment and after withdrawal of the CIDRs.

Following progestagen withdrawal, 69% and 42% of sponge- treated hoggets and 45% and 40% of CIDR-treated animals were in oestrus over 5 days in the two years, respectively. In 1986, following progestagen withdrawal, 61% and 83% of animals came into oestrus within 3 days in CIDR- and CIDR + PMSG- treated ewe lambs.

The mean time of ovulation was 67 h and 65 h in CIDR and CIDR + PMSG treated animals, respectively. The incidence of multiple ovulation was similar in CIDR- (15%) and Sponge-treated (20%) ewe lambs. Although the injection of a small amount of PMSG caused a higher incidence of multiple ovulation than in CIDR-treated ewe lambs, the difference was not significant. The conception rate was higher in animals treated in 1984 than in the next year (69% v 49%). Treatment

or breed differences in conception were not significant but in 1985 the BLX animals had a reduced conception rate of only 38%; the Breed X Year interaction was significant ($P < 0.05$). There were only a few multiple births recorded and the gestation length was not affected by treatment. Significant birth weight effects due to year and breed were apparent, but only a difference due to year occurred in the weaning weights. The fleece weights recorded at one year age were not influenced by the treatments, but year effects were important.

Progesterone levels in blood plasma of ovariectomised ewe lambs reached a maximum by 24 h after CIDR insertion, then declined gradually and an abrupt fall resulted soon after CIDR withdrawal. In the entire lambs with CIDRs the levels of progesterone remained high until withdrawal and then fell to basal levels consistent with ovulation. After this the levels rose and were similar to that in animals with a corpus luteum of a natural oestrous cycle.

It was concluded that CIDR treatment can induce earlier breeding among ewe lambs and that the induced ovulation resulted in a normal corpus luteum. The pregnancy rate after CIDR treatment was influenced by year effects and this was probably associated with differences in liveweight among the ewe lambs. ✓

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