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ADVANCING THE BREEDING SEASON OF YEARLING RED DEER HINDS WITH MELATONIN

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There are significant advantages to be gained by advancing the calving season of red deer hinds from early summer to spring, particularly that of improved pasture utilisation.

The aim of this trial was to evaluate the efficacy of melatonin feeding and melatonin implants to advance seasonal reproductive activity.

From 10 December until 6 March, at 1500 h each day, 20 hinds were fed 5 mg/head/day melatonin incorporated in a ration of deer nuts (MF). During the same period 16 hinds were each given two subcutaneous constant melatonin releasing implants (Genelink, Australia) replaced at approximately 28 day intervals (MI). A further six hinds remained untreated (C).

Ovulation was synchronised in MF and MI groups by either intravaginal progesterone (CIDR) only (inserted 17 February and removed 4 March) or by two prostaglandin F2α (PG) injections (250 µg closprostenol, Estrumate, ICI, on 21 February and 3 March) and in the control group by CIDR only.

Evidence of a previous ovulation, determined by laparoscopy on 12 March, was recorded in 9/20 MF, 12/16 MI and 0/6 C hinds. Nine of the MF hinds which did not ovulate however, did not consistently eat the treated ration. Of the MF hinds which ate their ration, 4/5 CIDR and 5/6 PG treated had a corpus luteum. Of the MI hinds 7/8 CIDR and 5/8 PG treated hinds had a corpus luteum.

This trial has demonstrated that both daily melatonin feeding and melatonin implants are capable of advancing the breeding season of yearling red deer hinds, with both methods appearing reliable once the problem of feed acceptance is overcome. The results from prostaglandin treatment suggests that those animals were cycling prior to the time of synchronisation, and that the breeding season could be advanced still further using the melatonin treatments described here.