

The present experiment was designed to monitor plasma progesterone concentrations over the beginning of the breeding season and the oestrous cycle, and to investigate the effects of intravaginal progesterone treatment.

Three tame adult hinds were blood sampled daily via indwelling jugular cannulae from 28 March until 17 May. Oestrus was detected by running the hinds with a vasectomised stag for 30 minutes, twice daily. In addition, the effects of 14 days of intravaginal progesterone implants (CIDR, AHI Plastic Moulding Co., Hamilton, N.Z.) containing 320 mg (9% w/w) progesterone were investigated by (1) measuring plasma progesterone levels in samples obtained daily by jugular venepuncture from 4 hinds inserted with CIDRs during seasonal anoestrus (11-25 February) and (2) recording the distribution of oestrus following CIDR withdrawal in 26 hinds during the breeding season. Plasma progesterone concentrations were determined by solid-phase ^{125}I radioimmunoassay.

Progesterone concentrations were low during anoestrus (usually <0.20 ng/ml). Immediately preceding first oestrus, concentrations increased (up to 0.88 ng/ml) for a short period (6-11 days). Following first oestrus, progesterone concentrations increased within 2-3 days reaching peak levels of 2.21 - 3.09 ng/ml 14-16 days after mating. Subsequently, concentrations fell within 3 days followed by a second oestrus in two animals.

In hinds given CIDRs during seasonal anoestrus, peak concentrations of 3.97 - 9.30 ng/ml were recorded on the first or second day of treatment. Concentrations declined over the first 7 days to 0.96 - 2.07 ng/ml plasma on Day 7 then remained about 0.72 - 2.60 ng/ml plasma from Days 8-14. On the last day of treatment concentrations ranged from 1.40 - 2.40 ng/ml plasma.

During the breeding season 21/26 (81%) hinds were detected as being mated on Days 2-4 following CIDR withdrawal.

The results show that as in other farmed animals, plasma progesterone in the hind is elevated prior to first oestrus, the oestrous cycle comprises distinct luteal and follicular phases and furthermore exogenous progesterone can synchronise oestrus.