Exogenous and Endogenous Progesterone in Ovariectomised Red Deer Hinds.

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The efficacy of several commercial methods of progesterone administation was investigated in ovariectomised red deer hinds. Treatments were: (1), control, (2), intravaginal controlled internal drug releasing (CIDR) sheep device containing 9%w/w progesterone, (AHI Plastic Moulding Co., N.Z.), (3), 12% sheep CIDR, (4), 12% hogget CIDR and (5) a subcutaneous silastic Sil-Estrus implant, (Ceva Ltd, France). Each treatment was administered to 10 animals for 14 days and progesterone concentrations measured on plasma samples collected daily.

All 3 CIDR treatments produced similar mean plasma progesterone concentrations with peak levels of up to 3.1ng/ml occurring one day after CIDR insertion. Concentrations were maintained at about 2ng/ml for the first 6 days then fell to 1.2ng/ml over the last 8 days of insertion. In contrast, the Sil-Estrus implants maintained a steady progesterone concentration, around 0.7ng/ml over the 14 day period.

Unexpectedly, on some occasions, hinds with no progesterone devices were found to have up to 3.3ng/ml plasma progesterone. To determine if the adrenal gland was a significant source of plasma progesterone, concentrations were measured at 0,15,30,60,90,120 and 240 minutes following intravenous injection of either 0,10 or 200 ug synthetic ACTH (Synacthen, Ciba-Geigy Ltd, Switzerland). ACTH administration elevated plasma progesterone concentrations up to 1.3ng/ml 15-30 minutes following injection.

None of the exogenous progesterone treatments used maintained plasma progesterone concentrations at levels similar to those recorded during the luteal phase of the oestrus cycle. The results also indicate that the adrenal gland may be a significant source of progesterone secretion in the red deer hind.