GONADAL STEROID HORMONES DURING GESTATION AND PARTURITION IN GOATS

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Early pregnancy detection is a desirable tool in animal breeding programmes. Hormonal determination is one of the potential techniques used for this purpose. The objective of this study was to determine the hormonal levels during gestation and parturition. Five female goats detected in heat were served naturally. Blood samples were collected from jugular vein at regular intervals, and concentration of progesterone and oestradiol 17β were determined by radioimmunoassay. The increase in progesterone concentration after mating was the same as that seen in the first part of a normal oestrous cycle. An average of 3 ± 0.98 ng/ml (Mean $\pm$ S.D.) progesterone was found in serum from first to the 6th week of gestation with no increase observed during this interval. Progesterone level increased to 16 ± 6.3 ng/ml by the 18th week. This was followed by a decline to 6.4 ± 4 ng/ml about one week prepartum, and a further decline to 2.2 ± 0.14 ng/ml on the day of parturition. The concentration fell abruptly to less than 0.6 ng/ml four hours postpartum. Oestradiol 17β gradually increased from first to the 19th week of gestation (167.4 ± 65.9 pg/ml). There was then a consistent rise in oestradiol 17β one day prepartum and during labour, reaching 527 ± 41.4 pg/ml. The concentration then decreased to 140 ± 6.4 pg/ml four hours after kidding.

From this study it is concluded that progesterone measurement between 20 – 24 days after mating can be used for pregnancy diagnosis. The initiation of parturition appears to be associated with withdrawal of progesterone and elevation of oestradiol.

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