

was used to determine phospholipid synthesis. DNA synthesis closely preceded mitosis in these fractions and stromal synthesis was significantly different in the pregnant and pseudopregnant horns. DNA and phospholipid synthesis will be discussed in relation to the state of the stromal cells at the onset of decidualisation.

GESTATION ET ÉVÉNEMENTS POST PARTUM

PURIFICATION AND LACTOGENIC ACTIVITY OF AN OVINE PLACENTAL HORMONE. — J. MARTAL, J. DJIANE, C. DELOUIS. *I. N. R. A., Jouy en Josas (France)*.

An Ovine Placental Lactogenic hormone (OPL) was isolated and purified from placentas obtained at 100-120 days of pregnancy. Lactogenic activities of various fractions have been measured by a radioreceptor assay, through competitive binding with prolactin. Principal steps of purification were : homogenization of foetal cotyledons, saline extraction at pH 9.5, acid precipitation at pH 4.5, ammonium sulfate precipitation (65 p. 100 saturation). After dialysis, the product is fractionated on DEAE Sephadex, lyophilized and filtered on G-75 S. F. Sephadex.

This purified hormone, studied by disc gel electrophoresis, showed only one band that migrated slowly to the anode, like sheep growth hormone. According to several immunological analysis, it was neither contaminated by ovine growth hormone nor by ovine prolactin. The purified hormone retained lactogenic activity in pseudopregnant rabbit mammary gland organ cultures. Lactogenesis *in vitro* was estimated by histological examination, by the appearance of lactose-synthetase activities, the increase of galactosyltransferase activities and the appearance of casein synthesis.

EVOLUTION IN THE SERUM OF A PLACENTAL LACTOGENIC HORMONE DURING PREGNANCY IN RUMINANTS. — J. DJIANE and G. KANN. *I. N. R. A., Jouy en Josas (France)*.

Co-cultures of mammary gland and sheep foetal cotylodonary tissue showed that placenta produced a lactogenic hormone. This hormone did not immunologically cross-react with ovine prolactin antibodies and bound to the same hormone receptor of the plasmic membranes prepared from lactating rabbit mammary glands. The levels of this hormone were estimated by a radioreceptor assay. In the ewe, a significant level of ovine placental lactogen (OPL) was present in serum obtained from day 80 of pregnancy; the highest level was observed about day 120; a few days before parturition OPL decreased rapidly in the serum. In the goat, lactogenic activity of the placenta was lower than in the sheep but higher than in the cow. In the cow, the lactogenic activity measured in the serum the last two months of pregnancy was very low. Ergocryptin (CB 154 Sandoz) administration which inhibited prolactin release did not reduce OPL levels in the serum.

RELATIONSHIP BETWEEN PLASMA ESTROGENS LEVELS OF PREGNANT COW AND SHEEP AND YOUNG BIRTH WEIGHT. — M. TERQUI, C. DELOUIS, G. KANN. *I. N. R. A., 37380 Nouzilly, I. N. R. A., 78350 Jouy en Josas (France)*.

Total plasma oestrogens were measured by radioimmunoassay after enzymatic hydrolysis and extraction of peripheral plasma from pregnant cows and sheep. The level of conjugated oestrogens was higher than that of free oestrogens.

In the cows of *Charolais* breed, the plasma level of total oestrogens (conjugated plus unconjugated) at the 220th day of pregnancy was higher for cows bearing twins than for cows with one foetus (6.3 ± 0.7 vs 4.7 ± 0.4 ng/ml).

We observed positive correlations between plasma oestrogen levels (at 220 days) and :

- the birth weight of calves ($r = + 0.84$; $P < 0.001$),
- the gain of weight from 1-180 days after birth ($r = + 0.87$; $P < 0.001$).

Similar correlations were obtained in sheep. These results suggest that total oestrogens in the plasma may be a useful criterion to estimate foetoplacental activity and the growth of future new born.

INFLUENCE OF THE SUPPRESSION OF THE *PRE PARTUM* SURGE OF PROLACTIN BY ERGOCRYPTIN ON THE MILK YIELD AND ON THE *POST PARTUM* ANOESTRUS OF THE NURSING EWE. — G. KANN. *I. N. R. A.*, 78350 Jouy en Josas (France).

Prolactin is known to be part of the ovine lactogenic complex necessary to induce a subnormal lactation in hypophysectomized ewes. Moreover, the role of Prolactin in lactogenesis has been demonstrated by *in vitro* work on the mammary tissue of pregnant ewe. Ergocryptin (CB 154 Sandoz Lab.) has been administered to pregnant ewes at various periods during the ten days preceding parturition time. Prolactin, Oestradiol, Cortisol and Ovine Placental lactogen have been measured during the treatment : Administration of 2×1 mg of CB 154 by day is sufficient to nearly completely depress every high levels of Prolactin. Prolactin is the only hormonal component affected by this treatment and the levels recorded before the injection of Ergocryptin are recovered 12 to 24 hours after cessation of administration. Suppression of the very high Prolactin values observed in the immediate prepartum period is followed by a very poor milk yield in the subsequent first days of lactation. In preliminary experiments it has been shown that this treatment shortens the anoestrus period observed *post partum* in the nursing ewe (oestrus behavior observed about 40 days after lambing in these treated animals instead of 60 days in normal nursing ewes). Further experiments are under way to investigate the possible antigonadotrophic potency of prolactin, using CB 154 and an antiprolactin antiserum administered *pre* or *post partum* to the ewe.

THE INFLUENCE OF PRE-CALVING FEEDING LEVEL ON REPRODUCTION IN DAIRY COWS. — B. H. LANGLEY. *Fermoy (G. B.)*.

The intake of silage of 11 cows was restricted to 50 lb (approx. 23 kg) per day for 6 weeks before calving, while control cows received 85 lb (approx. 39 kg) silage and 4 lb (approx. 1.8 kg) dried beet pulp. After calving, all cows received *ad libitum* silage and 6.5 lb (approx. 3 kg) meal until they were put onto grass.

The calves from the restricted group were lighter and the interval from calving to service and conception was longer than in the control group. The level of non esterified fatty acid in blood appeared to give a more sensitive indication of nutritional status than blood glucose.

INFLUENCE DU MODE D'ALLAITEMENT SUR LA DURÉE DE L'ANOESTRUS *POST PARTUM* CHEZ LA FEMELLE ZÉBU. — R. BRITO-CAPALLEJAS. *Université de La Havane (Cuba)*.

Dans la zone tropicale et dans les conditions naturelles d'élevage, la vache zébu allaite son produit pendant 6 mois au moins.

Si le sevrage est pratiqué 6 mois après le part, 34,6 p. 100 et 27,2 p. 100 des animaux respec-