

*Brief Communication*

PROLACTIN SECRETION IN NONPREGNANT SOWS  
TREATED WITH PROSTAGLANDIN F<sub>2α</sub>

The plasma prolactin level in the sow is highly increased from parturition through lactation until weaning (*Landeghem & Wiel 1978*). During lactation the secretion of prolactin is supported by suckling. The secretion prior to and during parturition may be brought about by prostaglandins released from the uterus. The evidence for this assumption is largely circumstantial, but it has been shown, in a single animal, that administration of prostaglandin F<sub>2α</sub> on day 110 of pregnancy immediately increased the plasma level of prolactin (*Taverne et al. 1979*).

In sows after weaning, and in gilts, the plasma prolactin levels are normally very low but during the oestrous cycle there are two fairly distinct peaks (*Landeghem & Wiel 1977, Dusza & Krzymowska 1979*), one during heat and another one after day 16, that is during regression of the corpora lutea, which is caused by uterine prostaglandins. The increase in prolactin secretion during luteolysis could represent another effect of the prostaglandins. We have tested this possibility by administration of prostaglandin F<sub>2α</sub> to nonpregnant animals.

Prolactin in the plasma was determined by radioimmunoassay, essentially as described by *Landeghem & Wiel (1978)*. The intramuscular injection of prostaglandin promptly resulted in a steep rise of prolactin in the plasma to a maximum after about 30 min (Fig. 1). It is noticeable that the prolactin curves have a shoulder as if a secondary effect of the injection had occurred after about 1 h. A sustained secretion of prolactin could have been caused by prostaglandins from the uterus where their production may be promoted by oxytocin (*Milvae & Hansel 1980*), the release of which in pigs is increased after intramuscular injections of prostaglandin F<sub>2α</sub> (*Ellendorff et al. 1979*).

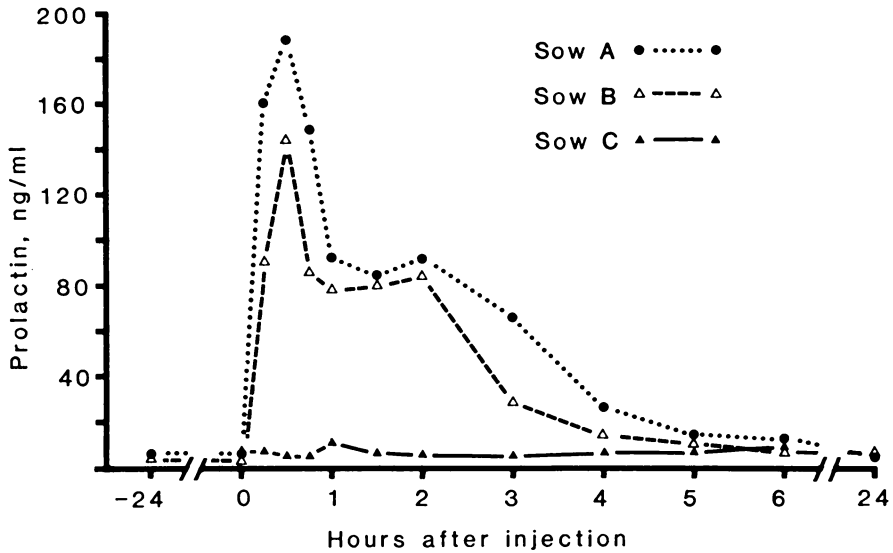


Figure 1. Plasma prolactin in nonpregnant sows after intramuscular injection of 25 mg prostaglandin  $F_{2\alpha}$  (Dinolytic® "Upjohn") (A, B) or saline (C).

The prostaglandin effect on prolactin secretion did not seem to be particularly dependent on plasma progesterone, which was maintained above 10 ng/ml in one of the animals (A), being in the early luteal phase of the cycle. The other animal (B) was in a state of anoestrus after weaning with plasma progesterone below 0.1 ng/ml at the time of injection.

Results similar to those described here have been reported also for the cow (*Renegar et al.* 1978), but the nature of the mechanism by which prostaglandin  $F_{2\alpha}$  may provoke prolactin secretion seems to be unknown.

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