

# Current Report

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## TERMINOLOGY USED TO DESCRIBE REPRODUCTION IN CATTLE

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**Capacitation**---the preparation process that sperm cells must undergo inside the reproductive tract of the female; allows the sperm to penetrate the egg cell

**Corpus Luteum (CL)**---structure on the ovary that produces progesterone; will continue producing progesterone if pregnancy occurs; if no pregnancy then CL will regress and cease to produce progesterone

**Estrus**---the time of receptivity of the male by the female; occurs at approximately 21 day intervals in swine and cattle; behavior of female is dominated by estrogens in blood

**Fertilization**---the combining of a sperm cell with an egg cell; occurs in utero-tubule junction of the female reproductive tract

**Follicle**---structure on the ovary that contains egg (or ovum); produces estrogen; becomes corpus luteum after ovulation

**Hormone**---chemical messenger that is produced in one location of the body, travels via the blood stream to another or target tissue and causes changes in the target tissue

**Luteinization**---the change of the follicle to the corpus luteum caused by the surge or large concentration of Luteinizing Hormone (LH)

**Ovulation**---the release of the egg (or ovum) from the follicle on the ovary; occurs after the end of behavioral estrus; caused by surge or increase in blood concentration of luteinizing hormone (LH)

**Pituitary gland**---often called the "master" gland; produces hormones which regulate many of the vital functions of the body; located at the base of the brain; produces FSH and LH which are hormones that influence the reproductive tract

### HORMONES OF IMPORTANCE TO REPRODUCTION

**Gonadotropin Releasing Hormone (GnRH)**---released by the hypothalamus (in the lower brain) travels to the pituitary gland (just below hypothalamus) and causes release of FSH and LH.

**Follicle Stimulating Hormone (FSH)**---released by the pituitary gland; is released in response to GnRH; travels to ovary and causes growth of follicles on the ovary;

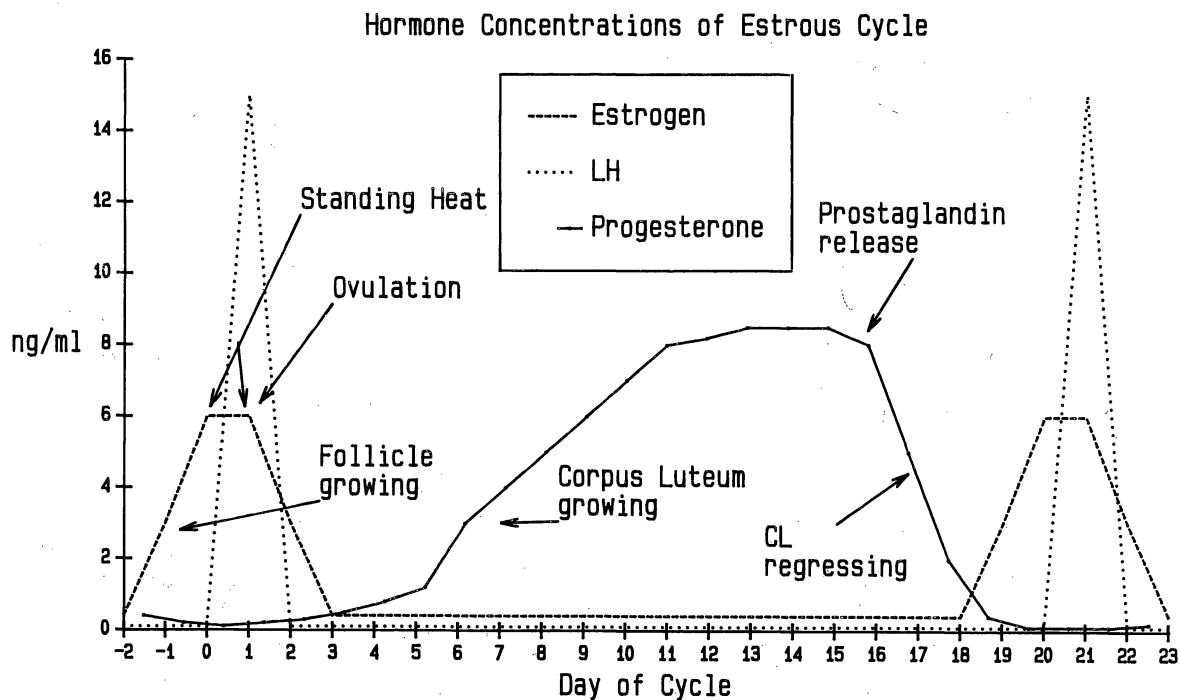
**Luteinizing Hormone (LH)**---released by the pituitary gland; is released in response to GnRH; travels to ovary and causes ovulation and change of follicle to corpus luteum.

**Estrogen**---released by the follicles of the ovary; causes behavioral signs of estrus; prepares the reproductive tract for pregnancy; encourages production of LH

**Progesterone**---released by the corpus lutea (CL); causes the reproductive tract to be quiet; promotes pregnancy or gestation; decline in progesterone becomes signal for new cycle.

**Prostaglandin**---released by the uterine lining; causes regression or death of the corpus lutea (CL); therefore is a signal that the cow or heifer is not pregnant; Used commercially as a synchronizing drug or for aborting feedlot heifers.

Figure 1. The major events of the normal estrous cycle of female livestock including changes in blood concentrations of Estrogen, Luteinizing Hormone (LH), and Progesterone.



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