

Post-Partum Anoestrous in Cow

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The livestock sector acts as a significant global asset in development of economy and socio-economic growth of India. This sector acts as an efficient tool for upliftment of poverty and securing financial perspective of small and marginal farmers. Fertility and good reproductive health decide economics of dairy farm. Any disruption to the breeding pattern results in progressive economic loss due to the extension of the dry season over the lifespan of the animals. Reproductive efficiency of dairy farm generally depends upon calving interval and anestrus time after calving which should not exceed more than 85 days. Thus, reproductive management act as primary determinant of sound and economic animal production system and contribute significantly to economic sector of India.

Cows have generally ovulation and oestrus at a regular interval of 21 days following puberty which may disrupt after calving. The time interval between calving and restoration of next oestrus cycle is called postpartum anestrus. In other words, postpartum anestrus is a time of sexual quietude after calving during which the female does not have a regular estrus cycle. It has become a nightmare for common dairy farmers throughout the world as absence of estrus more than 90 days can be considered as pathological anestrus or prolonged postpartum anestrus. Disturbance in ovarian events, such as follicular maturation and ovulation, negative energy balance and hormonal insufficiency can lead to inactive ovaries i.e. true postpartum anestrus. Sometimes often after calving, ovulatory estrus may not display signs of heat but the animal does not display signs of heat; it is called postpartum silent estrus.

Postpartum anestrus results in substantial economic losses for the dairy industry due to slower uterine involution, decreased reproductive rate, prolonged inter-conception and calving period, adverse effects on fertility, increased cost of treatment, reduced milk output, reduced calf crop yields and early depletion of potentially valuable cows.

A large number of interacting factors like poor nutrition (imbalanced diet can reduce GnRH secretions), seasonal influence (it can reduce ovarian activity), periparturient diseases like abnormal calving, metritis, mastitis and ketosis also influence the onset of postpartum cyclicity) and stress factor (managerial and environmental), lactation (high yielders have prolactin hormone secretion is more which cause negative effect on GnRH secretion that cause anestrus due to insufficient LH and FSH secretion), parity (primiparous have longer interval to first ovulation than multiparous animals) plays a significant role in postpartum anestrus.

Apart from this, some biological and metabolic components that reflect the nutritional status of the cows also influence the postpartum anestrus interval, either by acting as precursors of hormone synthesis or by influencing the target tissue response. This hormonal and biochemical insufficiency is due to the lack of some trace elements. Nutrition and suckling by the calf are the main factors; resulting in a temporary arrest of the hypothalamic-pituitary axis, leading to inactive ovaries and thus inhibiting follicular development.

The nutritional status of the cow is assessed by the Body Condition Score (BCS) which represents the body's energy reserves available for metabolism, growth, lactation and reproduction. Extreme low and high BCS of cows before or during calving and the early postpartum period may delays the onset of cyclicity. Suckling can also suppress the postpartum ovarian activity both in cattle resulting in extended postpartum anestrus period.

Therapeutic treatment of postpartum anestrus can be both preventive and therapeutic. The preventive approach to management of postpartum anestrus is practiced under modern systems of milk management. Anestrus animals are conventionally treated with a variable effect vitamin-mineral mixture supplement. Various therapeutic methods, such as hormonal or non-hormonal, have been used to restore ovarian cyclicity in cattle and buffalo with varying degrees of success. The non-hormonal methods of treatment of anestrus include the use of plant-based heat inducers (feeding plants rich in vitamins and minerals along with estrogenic properties useful in restoring cyclicity in cows, herbal preparations, ovarian massage. oldest and cheapest effective method of inducing estrus in cattle and stimulating the cervix with 5% Lugol's iodine Hormonal methods involve the use of various hormones such



as estrogen, prog-esterone, non-pituitary GnRH gonadotropins, prostaglandins, insulin and antiprolactins for treatment different categories of anestrus.

