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Short Communication

Post-partum uterine involution and ovarian activity in suckled swamp buffalo

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ABSTRACT

Uterine involution and ovarian activity were monitored by per rectal palpation and oestrus detection from 3 to 5 days to 180 days postpartum in 45 suckled swamp buffaloes maintained at Livestock Research Station, Mandira, Assam. The interval from parturition to regression of the corpus luteum (CL) of pregnancy and involution of uterus were 10.13±0.75 and 30.80±1.01 days, respectively. During the first 180 days post partum 35 (77.78%) out of 45 suckling buffaloes were acyclic (anoestrus) and of 10 animals (22.22%) exhibiting ovarian cycles of which 5(11.11%) were not detected in oestrus.

Key words : Uterine involution, ovarian activity, post partum, buffalo

Problems of oestrus detection and long calving intervals are among the major constraints that impede genetic progress and productivity of the swamp buffalo. The calving to conception interval of 190-200 days in the suckled swamp buffalo (Jainudeen, 1977) may be related to delay in the resumption of post partum ovarian activity, abnormalities of oestrous cycle, and low conception rate.

Uterine involution and ovarian activity have been investigated intensively by rectal palpation in Murrah (Bhalla *et al.*, 1966), Surti (Deshpande *et al.*, 1995), Nili Ravi (Singh *et al.*, 1979) and Mehsana (Suthar and Kavani, 1992) breed of buffalo. The buffalo population of North Eastern region of India including Assam is basically of swamp type and semi wild in nature. No similar studies have been conducted in the swamp buffalo of this region. Therefore, the present study was undertaken to determine the time of uterine involution and the resumption of post partum ovarian cyclicity in the suckled swamp buffalo.

45 suckled swamp buffaloes, 4-9 years old, maintained at Livestock Research Station, Mandira, Assam which calved normally between August 2002 to August 2004 were utilized in the present study. The uterus and ovary were palpated per rectum at weekly interval, commencing 3-5 days after parturition and continuing until 90-180 days post partum. The position of the uterus in the body cavity and the diameter at the external bifurcation of each uterine horn were recorded. Uterine involution was complete when both uterine horns reached normal nongravid size and position. The ovaries were palpated to estimate size and to record palpable structures (follicle or C.L).

The day of ovulation was estimated to be 4 days before the time a CL was first palpable. Buffaloes were penned and tested daily for oestrus using a teaser buffalo bull. Rectal palpation of the ovaries was performed daily for oestrus animals.

Uterine involution: The uterine horns were palpable cranial and ventral to the pelvic brim from days 7 to 10 postpartum. Therefore as the uterus gradually decreased in size, luminal distension decreased, caruncles were not palpable, the horns become clearly demarcated and the uterus attained its normal shape and position. Uterine lochia was recognized in 39% of the animals as a white mucoid discharge until day 19 post partum. It became clear and ceased by day 30 post partum. The cervix which was 4-5 cm in diameter and soft during the 1st week post partum, gradually reduced in size to 2-3 cm diameter, became firm and its outline could be defined as involution progressed. Involution was

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Table 1. Uterine involution and ovarian activity in post partum swamp buffaloes.

Parameters	No. of observations	Mean±SE (days)
Post partum interval to		
Uterine involution	45	30.80±4.25
Ovarian activity		
Cycling with detected oestrus	5 (11.11%)	104±3.4
Cycling with no detected oestrus	5 (11.11%)	113±5.3
Anoestrus (no functional ovary)	35 (77.78%)	—

completed by day 18 to 40 (mean 30.80±4.25) post partum (Table). These findings are in agreement with the findings of Bhuyan (1997) and slightly higher than the report (28±6 days) of Jainudeen *et al.* (1983) in swamp buffalo.

Ovarian activity: The CL of pregnancy (corpus albicans) regressed very rapidly following parturition and by day 10 postpartum was palpable as a hard small protuberance (< 3 mm diameter) on the ovarian surface. During the first month post partum, the ovaries were less than 1 cm in length, smooth and were devoid of either follicle or CL. Between days 30 and 60 (day 42±3) postpartum, 20 (44.44%) of 45 buffaloes possessed mature ovarian follicle, marked uterine tone and discharge of cervical mucus without oestrus. Regular ovarian cyclicity, characterized by palpable CL was initiated at a mean interval of 107±8.4 days in 10 of 45 buffaloes. Of the 10cycling buffaloes, 5 were detected in oestrus with an average postpartum interval to 1st oestrus of 104±3.4 days (Table 1). The remaining 35 buffaloes (77.78%) were acyclic (anoestrus) and had smooth ovaries with no palpable ovarian structure. Jainudeen *et al.* (1983) reported that during the 1st 150 days post partum period, only 32% suckled swamp buffaloes showed ovarian cycle and rest 68% were acyclic. The post partum anoestrus condition found in swamp buffalo in the present study was much higher than other Indian buffalo breed (Srivastav ans Kharche, 1986; and Suthar and Kavani, 1992). This period of anoestrus is not due to maintenance of the CL of pregnancy on a delay in uterine involution. Several factor like suckling (Radford *et al.*, 1978; Bhuyan, 1997) increase frequency of milking (Carruthers *et al.*, 1980), season of calving (Peters *et al.*, 1980) pre partum and post partum energy intake and parity of the animal (Wiltbank *et al.*, 1974) or a combination of these factors may contribute to this anoestrus condition.

The present study employed only rectal palpation of the ovaries to diagnose cyclicity and acyclicity during the post-partum period. Energy status might alter levels of reproductive hormones can neither be confirmed nor denied. Studies need to be conducted to establish the patterns of gonadotrophic and steroid hormone concentration in the blood of suckled buffaloes and to determine the influence of weaning, suckling intensity, age of dam, nutrition, season, or a combination of these factors. It may then be possible to define the circumstances in which an early resumption of ovarian cyclicity is achieved in swamp buffaloes.

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All the life members **(up to 31st March, 2007)** are requested to inform the change in the postal address, if any by 01.07.2007 to Dr. R.K. Pandit, so as to enable him to send the ballot papers on right address.

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