

THE INDUCTION OF CYCLICITY IN POSTPARTUM ANESTRUS BUFFALOES : A REVIEW

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(Received 12 January 2021, Revised 29 March 2021, Accepted 10 April 2021)

ABSTRACT : Postpartum anestrus is a major cause of infertility in buffaloes. The resumption of estrus in such animals depends on several factors such as nutrition management and suckling. Season too affects estrus expression in buffaloes. Estrus expression during summer months is decreased in buffaloes which makes estrus detection difficult in them. Nutrition and reproduction are two aspects of the bio-physiology of animals that have a close relationship with reproduction. Since anestrus buffaloes do not have enough pulsatile Luteinizing Hormone to support the final stages of follicular growth, so the occurrence of estrus behaviour and ovulation is affected in them. Normally after calving the animal needs time to rebuild its reproductive and metabolic system to become pregnant again. In buffaloes, the postpartum period is longer and highly variable. It may be due to genetic and environmental reasons factors that buffaloes suffer from delayed puberty, silent estrus and a long postpartum period. Seasonal and postpartum anestrus in buffaloes can be controlled using a range of therapeutic strategies such as follicular wave and ovulation synchronization using hormonal procedures, non-hormonal therapies, nutrition and management.

Key words : Anestrus, buffalo, cyclicity, postpartum, stress, hormone.

How to cite : Manisha Sethi, Nadeem Shah, Tushar K Mohanty, Mukesh Bhakat, Raju K Dewry, Dileep K Yadav, Vinod K Gupta and Sapna Nath (2021) The induction of cyclicity in postpartum anestrus buffaloes : A review. *J. Exp. Zool. India* **24**, 989-997. DocID: <https://connectjournals.com/03895.2021.24.989>

INTRODUCTION

With annual milk production of 187.7 million tonnes, India is the world's largest milk producer with the majority of milk contributed by buffaloes (55.5%) followed by cattle (40.0%) and goat (4.5%), respectively (DAHD & F, GOI, 2018-19). The buffalo has been dubbed "The Black Gold" because of its value and capacity for development (Acharya and Bhat, 1988). Buffalo has a reputation for being a bad breeder due to its late puberty, long postpartum ovarian quiescence, lack of estrus symptoms, and long inter-calving periods (Brar and Nanda, 2004). The buffalo (*Bubalus bubalis*) is a species that has a seasonal reproductive cycle. In late summer and early autumn, they become sexually active as the day length decreases (short days). The incidence of postpartum anestrus in buffaloes is found to be around 33.4% (Kaurav *et al*, 2019). The postpartum period plays a vital role in animal reproduction and its duration

influences reproductive performance. After calving the hormonal status of the animal undergoes marked changes such that the progesterone block is eliminated and the animal restores its cyclicity. It is normal for an animal to not have cyclicity immediately after parturition, but if this period prolongs it becomes an issue and reduces the reproductive efficiency of the animal. Low energy level, low body reserves, postpartum diseases delay the return to cyclicity of animal. Normally follicular growth occurs as follicular recruitment – deviation – selection – growth – ovulation. If there is a failure of any of these events the postpartum period will prolong. The duration of the postpartum period is not determined by the emergence of follicular waves but by the deviation and fate of the dominant follicle. Normally puerperium is completed in an animal in 6 weeks after calving. If any uterine disease is present it decreases the levels of gonadotrophin and also has local effects on ovarian functions thereby