

## Comparative Assessment of hCG with Estrogen in Increasing Pregnancy Rate in Mixed Parity Buffaloes

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**Abstract :** Water Buffaloes contribute significantly in Asian agriculture. The objective of this study was to evaluate the efficacy of two synchronization protocols in enhancing pregnancy rate in 105 mixed parity buffaloes particularly in summer season. Buffaloes are seasonal breeders showing more fertility from October to January in subtropical environment of Pakistan. In current study 105 lactating buffaloes of mixed parity were used having normal estrous cycle, age ranging 5-9 years, weighing between 400-650 kg, BCS  $4 \pm 0.5$  (1-5) and lactation varied from first to 5th. Experimental animals were divided into three groups based on corpus luteum morphometry. Morphometry of C.L was done using rectal palpation and ultrasonography. All animals were injected 25mg of PGI.m. (Cloprostenol). In Group-1 (n=35) hCG was administered at follicular size of 10mm having scanned after detection of heat. Similarly Group-2 (n=35) received 25 mg EB i.m (Estradiol Benzoate) after confirmation of follicular size of 10mm with ultrasound. Likewise, buffaloes of Group-3 (n=35) were administered normal saline respectively using as control. All buffaloes of three groups were inseminated after 12h of hCG, EB, and normal saline administration respectively. Pregnancy was assessed by ultrasound at 18th and 45th day post insemination. Pregnancy rates at 18th day were 38.2%, 34.5%, and 27.3% for G1, G2, and G3 respectively indicating that hCG and EB administered groups have no difference in results except control group having lower conception rate than both groups respectively. Similarly on 42nd day, these were 40.4%, 32.7% for G1 and G2 which are significantly higher than G3= 26.6 (control Group). Also, hCG and EB treated buffaloes have more probability of pregnancy than control group. Based on the findings of current study, it seems reasonable that the use of hCG and EB has been associated with improving pregnancy rates in non-breeding season of buffaloes.

**Keywords :** buffalo, hCG, EB, pregnancy rate, follicle, insemination

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