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**Research Article**

**High ambient temperature in summer is major contributing factor for low fertility among farm animals**

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Fe and Cu showed higher concentration levels in the upper and the lower regions of the dam respectively, and the statistical t-test confirmed that there is significant difference in concentration of these heavy metals between the lower and upper regions of the dam. The spatial variation in distribution and concentration of these heavy metals can be linked to their related sources within the Galma catchment area. Heavy metals such as Fe whose sources are linked to weathering activities appeared to be in higher concentration in the upper section of the dam where farming activities are much common and chemical elements such as Cu, Zn, Cr, Cd, Co and Zn which are linked to other human practices especially household materials are distributed more in the lower region of the dam which is close to semi-urban and urban settlements, although there is no statistical proof to confirm that there is significant difference in concentration of these elements between the two regions. The efficacy of treatments in terms of oestrus induction and conception rate was 33.33 and 50 per cent, 50 and 66.66 per cent, 16.66 and 0 per cent for Group A, B and C, respectively. Oestrus induction interval was shortest for group A.

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**Introduction**

Sila et al (2012) observed that water plays an essential role in supporting human life and biodiversity, it also has a great potential of transmitting diseases when contaminated. Dike et al (2004) is of the opinion that population growth coupled with other factors such as urbanization, agricultural activities, industrial and commercial process have resulted in the accumulation of wastes and pollutants which end up in water bodies, thereby altering the quality, species, composition and biodiversity in many aquatic systemsHigh ambient temperature in summer is major contributing factor for low fertility and sterlity among farm animals (Hala et al., 2009). In heat stressed animals there is reduction in dry matter intake (Ronchi *et al.*, 2001), which prolongs the period of negative energy balance leading to anovulation in dairy buffaloes during the early post-partum period(Buttler, 2001).Heat stress is also responsible for large declines in pregnancy rates of dairy cattle and buffalo during hot months throughout much of the tropical areas, represented by decrease in the fertility of cows inseminated in the late summer months (Al-Katanani et al., 2002), which is considered as the principal cause of extended post-partum anestrous period after calving in cattle and buffalo (Nasr et al.,2006).

**Material and Methods**

A total of 18 post-partum anoestrus buffaloes belonging to villages around the college of Veterinary Science and Animal Husbandry, Mhow were selected for the study. These buffaloes were per rectally explored twice, ten days apart to confirm ovarian activity and genital status and were divided into 3 equal groups.

Water is absolutely essential for life, it is undoubtedly the most precious natural resource on our planet (Igbinosa et al., 2012). The quality of water available and accessibility to a community has great impact on their living standard and wellbeing; those global and local efforts are widespread at ensuring adequate provision of clean and safe water to the growing population (DWAF, 2003). It is in the quest to supply Zaria community with potable water that the Galma dam was constructed.

**Result and Discussion**

The comparative efficacy of various treatments for induction of oestrus and conception rate is presented in table.

Figures in parenthesis indicate percentage.

Treatment of Receptal with Flomin C alone gave the best response. The percentage of buffaloes exhibiting oestrus in Receptal group (50%) was higher than the Illiren (33.33%) and organ massage (16.66%) as shown in the graphical comparison of three treatment regimens.

The average post treatment interval and induction of oestrus for PGF2α analogue group was shorter (3.0 days) than GnRH analogue (15.33 days) and organ massage (18 days) groups, respectively. The conception rates in PGF2α analogue, GnRH analogue and organ massage groups were 50.00, 66.66 and 0.00 per cent, respectively as depicted in the graphical comparison of three groups. Similar findings were reported by (Dhoble and Gupta, 1987; Tiwari and Gupta, 1995; Thakur et al., 1993 and Reddy et al., 1994).

 The response to PGF2α for estrous induction is not much encouraging as compared to GnRH. It may be because of high environmental temperature and low dry matter intake. Mohammed et al. (1999) have also reported that the season, geographical locations, environmental temperature, and fodder scarcity may influence the response to both GnRH and PGF2α for oestrus induction.

**References**

**Al-Katanani, Y.M., Paula Lopes, F.F. and Hansen, P.J. (2002).** Effect of season and exposure to heat stress on oocyte quality of Holstein cows. J. Daiy Sci. 58: 171-182.

**Butler, W.R. (2001).** Nutritional effects on resumption of ovarian cyclicity and conception rate in postpartum dairy cows. In Diskin M.G. (ed.).

**Dhoble, R.L. and Guplta, S.K. (1981).**Biochemical parameters and response to gonadotrophin administration in anoestrus buffaloes. Indian J. Anim. Sci. 57:47-50.

**Hala, A.A., Abou-Zeina, Hassan, S.G., Sabra, H.A. and Haman, A.M. (2009).** Trials for elevating adverse effect of heat stess in buffaloes with emphasis on metabolic status and fertility. Global Veterinaria 3(1): 51-62.

**Mohammed, F.C., Dhaliwal, G.S. and Sharma, R.K. (1999).** Clinical efficacy of GnRH analogue (Buserelin) and oestradiol benzoate treatment in anoestrus buffaloes. Indian J. Anim. Sci. 69(5): 310-312.

**Nasr, S.M., El Nour, H.H., El-Naggar, A.L., El Said, E.A. and Mahmoud, M.A. (2006).** Clinicopathological studies on dairy cattle suffering from infertility in New Valley governorate. Egyptian J. Comparative. Pathol. Clinc. Patholl. 19: 1-16.

**Reddy, R.K.C., Rao, A.S., Reddy, V.S.C., Yadagiri, B., Sharma, G.P., Rami Reddy, Reddy, M. and Eswa, C. (1994).** Efficacy of certain non hormonal and hormonal drugs on oestrus induction in post partum anoestrus buffaloes. Indian J. Anim. Reprod. 15(2): 127-130.

**Ronchi, B., Stadaioli, G., Verini Suppolizi, A., Bernabuci, U., Lacetera, N. and Accorsi, P.A. (2001).** Infunece of heat stress or feed restriction on plasma progesterone, oestradiol-l7beta, LH, FSH, polactin and cortisol in Holstein heifers. Livestock production Sci. 68: 231-241.

**Thakur, M.S., Jain, P.K. and Rao, M.L.V. (1993).** Induction of oestrus in anoestrus Murrah buffaloes with low doses of Receptal and lutalyse. Inidan J. Anim. Reprod. 17(2): 138.