



Review Article
**Journal of Pharmaceutical and Biomedical
 Analysis Letters**

www.pharmaresearchlibrary.com/jpbmal



Role of microminerals for maintenance of reproductive physiology in animals and biochemical factors involved: A Review

Ganguly Subha*

AICRP on Post Harvest Technology (ICAR), Department of Fish Processing Technology, Faculty of Fishery Sciences, West Bengal University of Animal and Fishery Sciences, 5, Budherhat Road, P.O. Panchasayar, Chakgaria, Kolkata - 700 094, WB, India

Abstract

The micro-minerals play an important role in increasing pregnancy rates in apparently barren and reproductively abnormal mares. Provision of micro-mineral supplemented ration containing copper, zinc, iron and manganese during the vernal period of breeding cycle proves to be useful. The pregnancy rate increase significantly in micro-mineral supplemented livestock.

Key words: Biochemical factors, Fertility, Livestock, Reproduction

Contents

1. Introduction	78
2. Conclusion	79
3. References	79

*Corresponding author

Ganguly Subha

E-mail: ganguly38@gmail.com

MS.ID: PRL2014-JPBMAL1897



PAPER-QR CODE

Copyright © 2014, JPBMAL All Rights Reserved

1. Introduction

The accurate diagnosis of mineral deficiency is revealed by clinical and production response.¹ Old mares have lower pregnancy rates per cycle and increased pregnancy loss rates.² Deficiency of minerals causes various reproductive failures such as infertility, repeat breeding, embryonic loss, poor conception rate, anestrus condition etc.³ The influence of micro-minerals on reproductive efficiency, ovulatory mechanism and maintenance of pregnancies and regulation of endocrine functions in the animals is important.⁴

Research findings by investigators

Higher serum copper level in normal mares than in apparently barren animals was observed by Joy and Nair⁵ and Prasad and Rao⁶. Prasad and Rao⁶ and Kalita *et al.*⁷ found significantly low serum zinc level in repeat breeding animals. Increased serum iron level in apparently barren animals was reported by Eltohamy *et al.*⁸ and Singh and Pant⁹. The higher concentration of serum manganese level was observed by Eltohamy *et al.*⁸ and Prasad and Raorespectively.

3. Conclusion

Mineral supplementation at appropriate concentrations can improve the pregnancy rates by reducing the incidences of repeat breeding in breeding livestock. So, optimum formulation of livestock ration mixed with adequate quantity of macro- and micro-minerals proves a stimulating factor in maintenance of pre- and post-pubertal stages in

livestock. It also proves to be helpful in remediation of cases of silent heat, infertility, sterility and other reproductive disorders.

4. References

1. MorrisLHA, Allen WR. An overview of low dose insemination in the mare. *Reproduction in Domestic Animals*. **2002,37**: 206–10
2. Hidioglou M., Manganese in ruminant nutrition: A review. *Can. J. Anim. Sci.* **1979,59**: 217-36.
3. Islam N, Ray SK, Batabyal S, Mukhopadhyay SK, Ganguly S. Effect of certain micro minerals on fertility in mare. *Indian J. Anim. Nutr.* **2012,29**(3): 307-9.
4. Chakraborty D, Ray SK, Datta U, Mukhopadhyay SK, Ganguly S. Selected Proteins and Enzymatic Analysis of Follicular Fluid of Indigenous Pig at Different Developmental Stages of Ovarian Follicle: a Quantitative Study. *Int. J. Bio-res. & Stress Mgt.*, **2012,3**(1): 88-92.
5. Joy G, Nair KP. Phosphorus and trace elements status of anestrus and repeat breeder crossbred cows. *J. Vet. Anim. Sci.* **1995, 46**(2): 91-4.
6. Prasad, K.S.N. and Rao S.V.N., Blood mineral profile of anestrus and repeat breeders crossbred cows-a field study. *Indian J. Anim. Nutr.* **1997,14**(2): 135-7.
7. Kalita DJ, Sarah BC, Bhattacharya BN. Mineral profile and fertility of cows. *Indian Vet. J.* **1999,76**: 971-2.
8. Eltohamy MM, Younis M, Salem HA, AffafAzouz, Shawky H, Farahat AA. Role of some macro and micro elements in inducing repeat breeding in buffaloes. *Indian J. Anim. Sci.* **1989,59**(11): 1406-9.
9. Singh M, Pant HC. Blood biochemical profile of normal ad repeat breeder cows in Himachal Pradesh. *Indian J. Anim. Reprod.* **1998,19**(20): 156-7.