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

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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

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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, anestrous 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 Rao respectively.

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