

Effect of Dietary Micronutrients on Growth and Biochemical Profile in Growing Crossbred Calves

Gaurav Thorat, Anjali Khare, S.S. Lathwal, Chander Datt and Khushbu Jain

ICAR-National dairy Research Institute, Karnal ,132001, India

¹Research Scholar, ICAR-NDRI Karnal

²Ph.Dscholar, ICAR-NDRI Karnal

³Principle Scientist, ICAR-NDRI Karnal

⁴Principle Scientist, ICAR-NDRI Karnal

⁵Research Scholar, ICAR-NDRI Karnal

Abstract—Twenty four female KF calves were selected and distributed randomly into 4 groups of 6 animals each based on their body weight and age in a randomised block design (RBD). In group T₁, the concentrate mixture consisted of mineral mixture without iodine. The animals in group T₂ and T₃ were supplemented with iodine at 0.25 and 0.5 ppm of dietary DM while in group T₄, 4 micronutrients i.e. chromium, naicin, vitamin E and Zn were supplemented @ 1.5, 600 40 and 40 ppm, respectively for 150 days. Results there is no significant (P>0.05) difference observe in body weight of calf in treatment and control. There is no significant difference observed in cortisol value. Thus, it may be concluded that the supplementation of iodine has no added benefit on growth and biochemical parameter in cross bread calves.

Keywords: Cold stress, Micronutrient, Crossbred calf, Iodine

1. INTRODUCTION

Farm animals have known zones of thermal comfort that primarily dependent on the species, physiological status of the animals, relative humidity and the severity of solar radiation. Cold stress increases dry matter intake. Cattle's maintenance energy requirements increases by 1 to 1.5% for each degree below the critical temperature (Johnson, 1986). To overcome these problem zinc, niacin, iodine, chromium and vitamin E to be supplemented in our study is discussed below.

2. MATERIAL AND METHODS

The study was carried out at Livestock Research Center, National Dairy Research Institute, Karnal for 150 days on 24 female KF calves distributed randomly into 4 groups of 6 animals each based on their body weight and age in a **randomised block design (RBD)**. In group T₁, the concentrate mixture consisted of mineral mixture without iodine. The animals in group T₂ and T₃ were supplemented with iodine at 0.25 and 0.5 ppm of dietary DM while in group T₄, 4 micronutrients i.e. chromium, naicin, vitamin E and Zn were supplemented @ 1.5, 600 40 and 40 ppm, respectively.

3. RESULTS

The results indicated that there is no significant (P>0.05) difference observe body weight and cortisol in treatments group compare to control.

4. CONCLUSIONS

It could be concluded from the study that effect of micronutrient did not have any effect on body weight and cortisol. But it will affect significantly in physiological parameter.

REFERENCES

- [1] Johnson H.D., Shanklin M.D. and Hahn L.1986, Productive adaptability indices of Holstein cattle to environmental heat *Agri. For. and Mete.*, **33**:291-297