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Effect of yeast culture feeding on body weight of heifer

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Abstract

The present investigation entitled “study the effect of yeast culture feeding on body weight of heifer” was undertaken during year 2017-18. Selected the twenty heifers for experiments and divided into 4 groups. Thus, each consisted of 5 heifer for the study. They were randomly allotted to four treatments via T₁ - (control) Green Fodder + Dry Fodder + Concentrate mixture + without yeast culture, T₂ - Green Fodder + Dry Fodder + Concentrate mixture + 5 gm yeast culture, T₃ - Green Fodder + Dry Fodder + Concentrate mixture + 10 gm yeast culture and T₄ - Green Fodder + Dry Fodder + Concentrate mixture + 15 gm yeast culture. The multi strain yeast culture used were containing four strain yeast culture containing four strain namely *Lactobacillus acidofellus*, *Saccharomyces cerevisiae*, *Saccharomyces boulardii* and *Profionibacterium frendenreichii* of bacteria and fungi respectively. Multi-strain yeast culture was supplied by Wokhardt co. Mumbai namely Biovet-YC Gold was fed as per treatment to the heifers. Observation on feed intake, dry matter intake and growth parameters like a weight weight was recorded and statistically analyzed by adopting randomized block design. The heifers fed under treatment T₄ amongst all treatments showed average daily weight gain (0.451 kg per day).

Keywords: Heifer, fodder, yeast culture, body weight

Introduction

In ruminants the nutrient utilization efficiency of Lignocellulose feeds can be augmented by beneficial rumen microbial fermentations. A very complex population of microorganisms predominantly bacteria, protozoa and anaerobic fungi present in rumen which interacts with each other and with host animal. The term probiotic means “for life” and has a contrast with the term antibiotic, which means “against life” (Dutta *et al.*, 2009) [2]. *Saccharomyces cerevisiae* is one of the most widely used cultures in the livestock feeding. Yeast culture has been shown to improve the nutrient supply to the animal at fixed intake. Which in turn improve the live weight gain and production performance of animal rumen development when compared to forage Due to the increased concern with antibiotics and other growth stimulants in the animal feed industry, research of other feed additives, such as direct fed microbial (DFM) has increased. An interest in the effect of DFM on animal health and performance has heightened (Krehbiel, 2003) [4].

Lesmeister *et al* (2004) [5] reported that yeast supplementation increased the hemicelluloses degradability and some important nutrient digestibility. The addition of yeast culture has many positive effects in the absorption of some minerals and improves the metabolic health of animals (Dolezal *et al.*, 2011) [1]. Many heifers can get digestive disturbance during their growing period which leads to imbalance bacterial flora. Supplementation of microbial feed additive as a tool to maintain the microbial balance of intestine prevents diarrhea (Timmerman *et al.*, 2005) [6].

Materials and Methods

The preparation of feed by incorporation different levels of yeast culture was undertaken at Livestock Instructional Farm of Department of Animal Husbandry and Dairy Science, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during the year 2017-2018, for a period of 90 days. Yeast culture was added in feed at different levels, *i. e.* 0gm (T₁), 5gm (T₂), 10gm (T₃) and 15gm (T₄) and heifers were allotted by dividing five heifers in each group on the basis nearness to age and weight.

Determined the initial body weight and final body weight of heifer of different 4 group of heifers. The present experiment was conducted by Randomized Block Design with a four treatment as detailed in below table No. 1.

Table 1: Details of allotment of treatments in feeding trials

Treatment	Details
T ₁	Green fodder + Dry fodder + Conc. mixture without yeast culture (control)
T ₂	Green fodder + Dry fodder + Conc. mixture + 5gm. yeast culture
T ₃	Green fodder + Dry fodder + Conc. mixture + 10gm. yeast culture
T ₄	Green fodder + Dry fodder + Conc. mixture + 15gm. yeast culture

The experimental groups of animals were fed with concentrate mixture every morning and evening. The concentrate mixture was fed as per thumb rule and additional 0.400 kg for weight gain of animal. A measured quantity of green fodder as per thumb rule requirement and dry feed ad Lib. was provided to the animals throughout the experimental period. Left over and intake was measured and recorded. For

two weeks preliminary trial period only TMR were fed, after two weeks preliminary period yeast culture was substituted with TMR.

Body weight of the experimental heifers was recorded at the start of experiment on a "A very weighing balance" before feeding and watering in between 8 to 9 am on three consecutive day. The data obtained was analyzed by Randomized Block Design (RBD) as per the procedure described by Gomez and Gomez (1984) [3].

Results and Discussion

Growth performance of the heifers on supplementation of yeast culture i.e. multi-strain yeast culture was evaluated in terms of body weight changes along with requirements of nutrients to achieve unit growth.

Body Weight Changes

The average body gain per day in the heifers was 0.369, 0.391, 0.423 and 0.451 gm in T₁, T₂, T₃ and T₄ groups respectively. The difference was found significant as detailed in below table No. 2.

Table 2: Effect of Supplementing Yeast Culture on Body Weight Gain of Heifers (kg)

Treatments	Initial body Weight (kg)	Final body Weight (kg)	Total gain in Body weight (kg)/heifer	Average body Weight gain per day (kg)/heifer
T ₁	125.10	158.32	33.22	0.369
T ₂	124.76	159.96	35.20	0.391
T ₃	127.52	165.58	38.06	0.423
T ₄	128.38	169	40.62	0.451
F-test	NS	Sig	Sig	Sig
SE (m)±	1.155	0.838	1.601	0.018
CD @ 5%	-	2.581	4.928	0.055

Conclusion

Thus, it can be concluded that, dietary addition of Multi-strain yeast culture @ 15 gm/animal/day seems to offer benefits to Heifers through improved DMI, growth, feed efficiency without any adverse effect.

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