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Research Article

Effect of Yeast Culture and Probiotic Feeding On Growth Performance of Osmanabadi Kids

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ABSTRACT

Eighteen weaned Osmanabadi kids with similar age and body weights have been exposed to three different treatments having 6 kids in each treatment. Three diets with or without probiotic were fed as T_0 (control) Dashrath grass (0.5kg) + Jowar kadbi (Adlib) + concentrate as per requirement, T_1 Dashrath grass (0.5kg) + Jowar kadbi (Adlib) + 0.025% *Lactobacillus acidophilus* + 0.025% yeast *Saccharomyces cerevisiae* , T_2 Dashrath grass (0.5kg) + Jowar kadbi (Adlib) + 0.05% *Lactobacillus acidophilus* + 0.05% yeast *Saccharomyces cerevisiae*. The kids subjected to different groups were fed for the periods of 91 days including last 7 days as digestion trial. The DMI intake and body weight gain during the experimental period were found significantly ($p<0.05$) superior in T_2 treatment over T_1 and T_0 and variation between remaining groups was non-significant. Thus, feeding of yeast culture may be recommended with probiotic mixture for body weight gain in the diet of Osmanabadi kids.

Key Words: Probiotic, Yeast culture, DMI, Kids.

INTRODUCTION

Goat is considered as poor man's cow as they are reared by poor people, mostly marginal farmers and landless labourers. The term "probiotic" (a Greek word meaning "for life") was first used by Parker (1974) and he described it as 'the organisms and substances that contribute to intestinal microbial balance'. It is a live microbial feed supplement that beneficially affects the host animal by improving intestinal microbial balance. Thus, the effective micro-organisms (probiotics) culture includes strains of lactic acid bacteria (*Lactobacillus acidophilus* and *Streptococcus*) and other organisms such as yeast (*Saccharomyces cerevisiae*) *Bacillus substilis*, *Bifidobacterium*, *Aspergillus oryzae*, Torulopsis (Panda, 2002).

Most of the research workers tried either single strained or two or six strained effective micro-organism culture for the preparation of feeds. Information on effect of feeding multi-strain probiotics as feed additive on growth promoter is scanty. Hence, the present experiment was conducted.

MATERIALS AND METHODS

Eighteen weaned Osmanabadi kids with similar age and body weights were divided into three groups of 6 kids each for a period of 91 days. The kids in control group (T_0) were offered Dashrath grass (0.5 kg) + Jowar kadabi (Ad.lib) + concentrate mixture as per requirement, T_1 Dashrath grass (0.5 kg) + Jowar kadabi (Ad.lib) + concentrate mixture as per requirement + 0.025% *Lactobacillus acidophilus* + 0.025% yeast *Saccharomyces cerevisiae* , T_2 Dashrath grass (0.5 kg) + Jowar kadabi (Ad.lib) + concentrate mixture as per requirement + 0.05% *Lactobacillus acidophilus* + 0.05% yeast *Saccharomyces cerevisiae*. The weekly body weights and body measurements of individual kids were recorded in morning before offering the feed and water to the kids so as to estimate the accurate weight gain. The body measurements such as height, length, chest girth and belly girth were recorded with standard tape. The data were statistically analyzed by complete randomized design (CRD) (Federer, 1967).

RESULTS AND DISSUSION

It was observed (Table 1) that, the average DM intake per animal per day on 100 kg body weight basis under treatment T_0, T_1 and T_2 were 2.94, 3.15 and 3.36 kg, respectively. The DMI on 100 kg weight basis by the kids under treatment T_2 was significantly ($P<0.5$) higher than T_0. The differences observed in DMI under treatment T_1 and T_0 and T_2 and T_1 were non-significant. Reddy and Bhima (2003) reported that the DMI was significantly higher in sheep fed with conventional

Table 1: Dry matter intake per animal over an experimental period (kg)

Particulars	**DM intake kg /100 kg body weight**		
Treatment→ Period↓	**T0**	**T_1**	**T_2**
P-I	2.52	2.65	2.74
P-II	2.85	3.13	3.42
P-III	3.45	3.68	3.93
Average	2.94	3.15	3.36
SE	0.100		
CD±0.5%	0.278		

Table 2: Body weight gain per animal per day (kg)

Treatment→ Period↓	**Total body weight gain (kg)**			**Daily body weight gain (kg)**		
	T0	**T1**	**T3**	**T0**	**T1**	**T3**
P-I	1.023	1.193	1.130	36.54	42.60	40.38
P-II	1.043	1.151	1.183	37.25	41.12	42.26
P-III	1.157	1.255	1.424	41.33	44.85	50.86
Average	1.074	1.199	1.245	38.37	42.85	44.50
SE±	0.011			0.421		
CD at 5%	0.032			1.166		

Table 3: Average body measurements of experimental kids (cm).

Treatment→ Period↓	**Height**			**Length**			**Chest girth**			**Belly girth**		
	T0	T1	T3	T0	T1	T3	T0	T1	T3	T0	T1	T3
P-I	0.057	0.060	0.060	0.056	0.060	0.061	0.073	0.076	0.082	0.086	0.085	0.084
P-II	0.055	0.059	0.060	0.057	0.058	0.061	0.075	0.077	0.085	0.083	0.085	0.089
P-III	0.055	0.058	0.061	0.056	0.058	0.062	0.078	0.076	0.078	0.086	0.088	0.090
Average	0.056	0.059	0.061	0.056	0.059	0.061	0.075	0.076	0.082	0.085	0.086	0.089
SE±	0.0018			0.0022			0.0023			0.0018		
CD at 5%	0.0050			0.0060			0.0066			0.0051		

ration than those offered complete diets which were similar to present investigation.

It was observed (Table 2) that, the average total body weight gain and daily body weight gain per animal over an experimental period under treatment T_0, T_1 and T_2 were 1.074, 1.199 and 1.245 and 38.37, 42.85 and 44.50 kg, respectively. The total body weight gain and daily body weight gain by the kids under treatment T_2 was significantly higher than kids of treatment T_1 and T_0 groups. Williams (1989) reported that the average daily gain (ADG) was significantly higher in the lambs fed with ration containing yeast culture than control group which was in agreement with present investigation. Jenkins (2003) reported that fermentation extract probiotic product have a significant effect on lamb weight gain. Mahender *et al.,* (2006) recorded significantly higher average daily gain in lambs on feeding ration containing yeast culture, over control group.

It is observed from Table 3 that, the daily average gain in height of lambs were 0.056, 0.059, and 0.061 cm, daily length gain 0.056, 0.059 and 0.061 cm, daily chest girth gain were 0.075, 0.076 and 0.082 cm and daily belly girth gain was 0.085, 0.086, 0.089 cm for treatment T_0, T_1, and T_2 respectively. The daily gain in height, length, chest girth and belly girth by kids under treatment T_2 is superior over treatment T_1 and T_0. The differences in body measurement gain among the treatments were non-significant. Similar findings were reported by Kulkarni (1990) and Phad (1994).

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