

## Effect of Probiotic supplementation on Growth parameters of Osmanabadi Kids

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### Abstract

The study was conducted to assess the effect of probiotic supplementation on growth parameters viz. body weight, body height, chest girth and body length of Osmanabadi kids. A multi-strain commercially available probiotic (*Protexin*) containing Lactobacillus species, Streptococcus species and Yeast was administered orally at a dose rate of 2 gm per 25 kg body weight daily for 2 months to the treatment group. At the end of the first and second week, all the growth parameters were higher in the treatment group as compared to the control group, though the difference was not statistically significant. However, from the third week onwards, all growth parameters were significantly higher in the treatment group as compared to the control group.

**Keywords** : Osmanabadi, Goat, Probiotic, Growth, Supplementation, Kid, Parameters, Effect.

### Introduction

Absence of scientific or economic approach to goat rearing has been a major constraint in goat farming. Exploring ways and means to increase the productivity with minimum cost of input is the need of the hour. It is well known that farm profits are directly related to weight gain and feed efficiency of growing animals. The present study was therefore undertaken to assess the effect of probiotic supplementation on growth parameters of Osmanabadi kids. Nowadays animals are being subjected to intensive managerial practices to attain high production standards. Such practices test the animal's ability to remain healthy. One of the body systems most susceptible to such stressful conditions is the intestinal tract which constitutes a doorway for pathogenic organisms. Thus, the concept of replacing or supplementation of the gut microbes with beneficial organisms has become popular. Probiotic are products containing viable bacterial and yeast strains that are administered orally, either alone or in feed. The most commonly used probiotics contain strains of lactic acid bacteria (LAB) and Streptococcus species.

### Materials and Methods

64 Osmanabadi kids of 3 months age with identical body weights were selected from the sheep and goat unit of the College of Veterinary and Animal Sciences, Udgir and nearby villages. The selected kids were serially ear tagged, dewormed and split into two groups with one half as control and the other half as

treatment group. A multi-strain commercially available probiotic (*Protexin*) containing Lactobacillus species, Streptococcus species and Yeast was administered orally at a dose rate of 2 gm per 25 kg body weight daily for 2 months to the treatment group. The experiment was carried out with the existing feeding schedule; no concentrate feed was supplied to the kids during the experiment. Weekly growth parameters were recorded for all groups. The data was analyzed as per standard statistical methods.

### Results and Discussion

The weekly means and standard errors of the growth parameters are mentioned in Table 1 to Table 4. At the initial stage, all growth parameters viz. body weight, body height, chest girth and body length did not differ significantly ( $P < 0.05$ ) between the treatment and control groups. At the end of the first and second week, growth parameters were higher in the treatment group as compared to the control group, though the difference was not statistically significant. However, from the third week onwards, all growth parameters were significantly higher in the treatment group as compared to the control group.

Liotta *et al.* (2003) and Lackowski *et al.* (2001) opined that the kids during active growth are more benefited by probiotic supplementation as compared to kids of preweaning age, and observed gain in height, girth and length of kids due to probiotic supplementation. Abe *et al.* (1995) reported that there was an improvement in body weight gain and feed

conversion ratio in calves due to probiotic supplementation. Raman *et al.* (1998) observed that probiotic-supplemented group had higher live weight gain, higher dry matter intake and lower incidence of diarrhoea. Lohnert *et al.* (1999) reported higher daily weight gain and dry matter intake, lower incidence of diarrhoea and increased digestibility of crude protein and crude fiber in calves supplemented with probiotics. Chaucheyras *et al.* (2001) suggested that yeast strains stimulate the development of cellulolytic microflora and enhance microbial activity in the rumen of young ruminants.

Thus, Osmanabadi kids which received probiotic supplementation were found to have increased body weight and growth parameters as compared to the non-supplemented kids, possibly due to increased dry matter intake and crude fiber digestibility, and decrease in the incidence of diarrhoea due to alteration of the rumen microflora by way of decrease in the number of pathogenic microorganisms and increase in the number of beneficial microorganisms.

References

1. Abe, F., Ishibashi, N. and Shmimamure, S. (1995): Effect of administration of bifidobacteria and lactic acid bacteria to new born calves and piglets. *J. Dairy Sci.* 78: 12
2. Chaucheyras, Durand, F. and Fonty, G. (2001): Establishment of cellulolytic bacteria and development of fermentative activities in the rumen of gnotobiotically reared lambs receiving the microbial additive. *Cuban J. Agril. Sci.* 37(2): 125-129.
3. Lachowski, W. (2001): Influence of probiotic Yea-Sacc 1026, Lactosacc and of Acid Pack 4 way application on the productivity of sheep. *Rozprawy Akademia Rolnicza Wszczcincin* 198: 68.
4. Liotta, Piccitto F., Chiofalov and Mariani, P. (2003): Administration of lactobacillus to growing kids - Effect on biomorphological traits. *Italian J. Ani. Sci.* 2003(2): 536-538.
5. Raman, Mallik, Sharma, D. D. and Mallik, R. (1998): Influence of mixed probiotic on growth feed conversion efficiency and incidence of diarrhoea in young calves. *Ind. J. of Ani. Nutr.* 15: 228-231.

Table - 1 Means and Standard Errors for Weekly Body Weight (kg)

Group	No.	Weeks								
		Initial	1	2	3	4	5	6	7	8
T	32	6.09±0.10	6.29±0.11	6.61±0.12	6.79±0.11	7.02±0.11	7.25±0.11	7.60±0.12	7.71±0.11	7.93±0.12
C	32	5.99±0.11	6.12±0.12	6.28±0.12	6.44±0.12	6.60±0.12	6.74±0.12	6.91±0.12	7.06±0.12	7.23±0.12
CD		0.32	0.32	0.33	0.33*	0.36*	0.34*	0.34*	0.34*	0.36*

Table - 2. Means and Standard Errors for Weekly Body Height (cm)

Group	No.	Weeks								
		Initial	1	2	3	4	5	6	7	8
T	32	42.75±0.25	43.12±0.33	44.12±0.33	44.90±0.37	45.12±0.35	46.03±0.36	46.68±0.41	47.28±0.43	48.09±0.30
C	32	42.23±0.29	43.18±0.32	43.31±0.37	43.75±0.29	44.06±0.44	44.81±0.33	44.87±0.33	45.56±0.46	45.93±0.34
CD		0.77	0.83	1.02	0.97*	0.98*	0.97*	1.10*	1.30*	0.94*

Table - 3. Means and Standard Errors for Weekly Chest Girth (cm)

Group	No.	Weeks								
		Initial	1	2	3	4	5	6	7	8
T	32	41.70±0.25	42.09±0.26	42.96±0.34	43.81±0.23	44.31±0.31	44.59±0.51	45.81±0.42	46.34±0.38	47.20±0.34
C	32	41.20±0.28	42.31±0.30	42.40±0.37	42.84±0.29	43.13±0.38	43.93±0.34	44.03±0.46	44.43±0.36	45.18±0.37
CD		0.75	0.80	1.04	0.87*	1.08*	1.22*	1.22*	1.10*	1.04*

Table - 4. Means and Standard Errors for Weekly Body Length (cm)

Group	No.	Weeks								
		Initial	1	2	3	4	5	6	7	8
T	32	41.03±0.28	41.31±0.35	42.31±0.35	43.00±0.37	43.66±0.39	44.25±0.36	44.96±0.45	45.62±0.40	46.00±0.75
C	32	41.03±0.34	41.71±0.36	41.78±0.38	41.84±0.32	42.28±0.42	43.09±0.33	43.09±0.36	43.75±0.42	44.18±0.39
CD		0.88	0.95	1.06	0.98*	1.11*	0.96*	1.13*	1.20*	1.31*

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