

Effect of Feeding a Calf Growth Product on Growth Performance in Pre-Weaned Calves

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ABSTRACT

The objective of the present field trial was to analyse the effect of feeding special nutrition in the form of Calftop on the growth parameter of calves (cows). The pre-weaning period is a critical stage in dairy calf development, during which optimized nutrition can greatly influence growth performance and future productivity. This study trial evaluated the effect of Calftop, a scientifically formulated calf growth supplement containing nutrients intended to support digestion, enhance muscle development and improve overall metabolism, on the growth performance of pre-weaned calves. Ten cow calves were divided into two equal groups, viz., Group T1 (control) and Group T2 (treatment). Group T1 received a roughage (dry and green fodder) mixture prepared as per the practice of Goshala and group T2 received the same ration as group T1 and was supplemented with Calftop (feed supplement) @ 25 ml/day. Growth parameters, including body weight and average daily gain (ADG), body height, body length, and body heart girth, were monitored throughout the study. The results of the study revealed that on 45 days of supplementation in the T2 group there was significantly higher ($P < 0.05$) body weight gain, average daily gain and body measurements as compared to the control T1 group, except body height. Calves supplemented with Calftop demonstrated a significant increase in ADG, achieving an additional 153.3 g of daily weight gain as compared with the control group. No adverse effects were observed and calves maintained normal health scores throughout the feeding period. These findings indicate that supplementation with the Calftop product during the weaning stage can substantially improve growth performance in dairy calves.

Keywords

Calftop,
Calves, body
weight, average
daily gain, growth
parameters

Article Info

Received:

12 March 2026

Accepted:

26 April 2026

Available Online:

10 May 2026

Introduction

Efficient rearing of replacement heifers is essential for the long-term productivity and profitability of dairy operations. The pre-weaning period represents a critical

window in which nutrition, management and health interventions can have lasting effects on growth performance, immune competence and future lactation outcomes. Traditionally, dairy calves have been raised on restricted milk diets with the primary goal of minimizing

feed costs. However, mounting evidence suggests that enhanced early-life nutrition can stimulate greater average daily gain, improve metabolic development and advance the age at first calving, ultimately increasing lifetime milk yield. As calves are the future herd of a dairy farm, their optimum growth must be ascertained.

In recent years, a wide range of commercial calf growth products has entered the dairy market, driven by increasing interest in improving pre-weaning performance and reducing calf morbidity. However, many of these products lack scientifically validated formulations, standardized quality control, or evidence-based evaluation. As a result, their efficacy can be inconsistent and producers may not achieve the intended improvements in calf growth or health. In contrast, Calftop is formulated using a science-based approach developed in consultation with dairy nutrition experts and veterinarians. Its composition is designed to support gastrointestinal development, enhance nutrient absorption and strengthen immune function, making it a promising candidate for improving early-life performance in dairy calves.

Feed supplements significantly boost calf growth by providing missing nutrients (protein, vitamins and minerals), improving feed intake and digestion, leading to higher weight gain, better body measurements (length and girth) and enhanced overall health, with specific impacts depending on the supplement type (protein, minerals, probiotics, or forage) and the calf's age (pre-weaning vs. post-weaning). They help in rumen development, optimize nutrient absorption and support skeletal growth, reducing the time to reach market weight or breeding maturity.

The objective of the present study is therefore to evaluate the effect of feeding a calf growth product on growth performance and health outcomes in pre-weaned dairy calves. By assessing growth rates and morbidity across treatment groups, this study aims to provide evidence-based guidance for producers considering the integration of calf growth supplements into their rearing programs.

Materials and Methods

The experiment was conducted for the period of 45 days at Shri Krishan Goshala, Karnal, Haryana, to evaluate the effect of feeding a calf growth product on growth performance in pre-weaned dairy calves.

The field study was conducted in ten growing cattle calves (all male calves under two months old) that were distributed into two groups with five animals each in a randomized block design. Before the commencement of the experiment, all the calves were dewormed against parasites.

The control (T1) group was not supplemented with any extra things other than what was present in the basal diet; the T2 group was supplemented with the Calftop product (supplied by M/S Carus Laboratories Pvt. Ltd.) at 25 ml daily. Body weight and other body parameters were recorded on weekly intervals. The trial continued for 45 days.

Observation recorded

1. Body weight gain: The calves were weighed at the beginning of the experiment and thereafter at weekly intervals using a standard platform weighing balance (Avery, capacity 500 kg) installed at Shri Krishana Gaushala, Karnal. The body weight was recorded in the morning before providing any water or feed to the calves. These body weights were used for determining the growth rate.

2. Body parts measurement: Body measurements, viz., body length, height and chest girth, of experimental animals were recorded in inches (" or in) at the beginning and then at the weekly interval during the experiment.

Body measurements were recorded in the morning before providing feed and water to the animals.

Statistical analysis

The data were analysed statistically using standard methods. The data were expressed as mean \pm SE and were analysed by one-way ANOVA using the general linear model of SPSS version 16, and Duncan's multiple range tests were applied to test the significance. Significance is declared when the P value is less than 0.05. ($P < 0.05$).

Results and Discussion

Results of the effects of Calftop (feed supplement) in the ration of cow calves on the various body measurements, i.e., body weight, length, height and heart girth that relate to physical growth, have been given in Tables.

Table.1 Body weight of calves during experimental period

Trial Group for Calf Body weight gain			
Attributes	Control	Treatment	P- Value
Initial body weight (Kg)	49.02 ±0.19	49.63 ±0.09	0.03
Final body weight (Kg)	62.71 ±0.65	70.21 ±0.44	0.00
Total body weight gain (Kg)	13.69 ±0.11	20.58 ±0.16	0.00
Body weight gain/day (gm)	304.22 ±5.72	457.33 ±3.98	0.00

Table.2 Body length of calves during experimental period

Trial Group for Calf Body Length			
Attributes	Control	Treatment	P- Value
Initial body Length (inch)	29.95 ±0.19	30.01 ±0.22	0.83
Final body Length (inch)	32.48 ±0.23	33.93 ±0.37	0.01
Total body Length gain (inch)	2.53 ±0.17	3.92 ±0.09	0.00

Table.3 Body chest girth of calves during experimental period

Trial Group for Calf Body Chest Girth			
Attributes	Control	Treatment	P- Value
Initial chest girth (inch)	32.89 ±0.26	33.06 ±0.34	0.72
Final chest girth (inch)	35.72 ±0.39	36.98 ±0.15	0.01
Total chest girth gain (inch)	2.83 ±0.07	3.92 ±0.20	0.00

Table.4 Body height of calves during experimental period

Trial Group for Calf Body Height			
Attributes	Control	Treatment	P- Value
Initial body height (inch)	31.53 ±0.25	31.63 ±0.20	0.73
Final body height (inch)	32.25 ±0.21	32.56 ±0.10	0.24
Total body height gain (inch)	0.72 ±0.06	0.93 ±0.10	0.12

Body weight: The initial average body weight of all the groups, i.e., T1 and T2, was 49.03 kg and 49.64 kg, and at the end of the experiment, they were 67.72 kg and 70.22 kg, respectively. No significant difference could be established between the two treatment groups in respect to body weight (BW) in the first week of the trial; however, at 14 days of the experimental period, body weight (BW) was significantly ($P < 0.05$) higher in experimental calves of treatment group T2, which were fed a diet supplemented with Calftop, as compared to control T1 with only a basal diet. Average Daily Gain (ADG) was 457.4 gm (T2) as compared to control (T1), which was 304.1 gm. There was 153.4 gm more body weight gain in the treatment group (T2) than the control group (T1).

Average increase in body length (Table 2) and chest girth (Table 3) were significantly higher ($P < 0.05$) in calves fed Calftop (T2) as compared to control (T1). Body height (Table 4) was non-significant.

At the end of the treatment, the mean values of body length, chest girth and body height were 33.93, 36.98, and 32.56 in the treatment (T2) group, respectively.

Body length and body chest girth showed a higher significant difference ($P < 0.05$) at 45 days in calves fed the Calftop feed supplement in the treatment group (T2) as compared to the control (T1); however, these parameters did not differ significantly between groups T1 and T2 up to 21 days of the experiment. The results

of the study revealed that total weight gain and gain per day, body length and chest girth were significantly ($P < 0.05$) higher in calves fed a ration supplemented with Calftop as compared to the control group (T1).

Improvement in body weight, length and girth due to feeding of Calftop supplement in T2 treatment might be due to the better availability of minerals and vitamins at the absorption site in the small intestine. Especially calcium, phosphorus helps in bone growth. Zinc is vital for maintaining intestinal integrity by strengthening the gut barrier, reducing intestinal permeability (leaky gut) and enhancing mucosal repair. Mannan oligosaccharide and beta-glucan: these probiotics help to create the right microbial and immune condition for the calf to start eating solid feed early, which is the key to healthy rumen development.

The above findings are in agreement with findings of Mowat *et al.*, (1993) and Hong *et al.*, (2002) observed that there was an increase in daily weight gain of beef steer when the basal diet was supplemented with chelated chromium. Bhanderi *et al.*, (2010) concluded that supplementation of Mineral Bio-Organic Trace Minerals (MBOTMs) at NRC requirements in male calves can improve body weight gain more than that of inorganic trace minerals. Similarly, Mondal *et al.*, (2008), Kadu *et al.*, (2016) and Chang *et al.*, (2020) also observed a similar pattern of significant ($P < 0.05$) improvement in daily weight gain in calves. The results are in agreement with Parmar *et al.*, (2022) and Mudgal *et al.*, (2018), who studied the effect of chelated minerals on buffalo calves. The present findings of the study are comparable with earlier reports of Kumar *et al.*, (2017) and Mallaki *et al.*, (2015), who observed that dry matter intake was significantly more in buffalo calves and in lambs in a study of supplemented chelated minerals and organic zinc, respectively.

From the result obtained in the present study, it can be concluded that feeding the supplement Calftop has a beneficial effect on body weight and average daily weight gain in calves.

Author Contributions

Deepak Kumar: Investigation, formal analysis, writing—original draft. Vinod Garjola: Validation, methodology, writing—reviewing. Hilal Ahmad Bhat:—Formal analysis, writing—review and editing.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical Approval Not applicable.

Consent to Participate Not applicable.

Consent to Publish Not applicable.

Conflict of Interest The authors declare no competing interests.

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How to cite this article:

Deepak Kumar, Vinod Garjola and Hilal Ahmad Bhat. 2026. Effect of Feeding a Calf Growth Product on Growth Performance in Pre-Weaned Calves. *Int.J.Curr.Microbiol.App.Sci*. 15(5): 59-63.

doi: <https://doi.org/10.20546/ijcmas.2026.1505.008>