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# Effect of Feeding Mixture of Herbal Plants (Harad and Garlic), S. Cerevisiae and Combination of Both on Blood Lipid Profile of Growing Male Buffaloes

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**ABSTRACT**

Abstract: An experiment was carried out for a period of 180 days on twenty growing buffaloes to find out the effect of dietary supplementation of Harad and Garlic, S. cerevisiae and combination of both on blood lipid profile. The dietary treatments comprised of viz CON (control with no additive); T 1, fermented feed (containing 106 S. cerevisiae/g) @ 100g/100kg body weight; T 2, mixture of harad and garlic @ 2% of dry matter intake and T 3, mixture of harad and garlic plus feed fermented with S. cerevisiae. The basal diet consisted of wheat straw and concentrates mixture (50:50) to meet the nutrient requirement of animals. Blood samples were collected aseptically on 0 day, 90 day and180 day of the experiment.

Summary: Supplementation of mixture of harad and garlic, S. cerevisiae and combination of both has no influence on the lipid profile growing buffaloes as the values were within normal range in the study.

**KEYWORDS** Harad, Garlic, S. cerevisiae, buffalo calves, lipid profile

## Introduction

The shortage of feed and fodders as well as diversion of agricultural by-products towards industry, which primarily were used as animal feed, make the livestock production more challengeable. Modern approaches offer incredible opportunities to make livestock sector more profitable by getting better output in term of milk and meat. The changing perspectives in animal as well as human nutrition towards chemical feed additives, their side-effects and increasing focus on natural products as feed additives has drawn attention of researchers towards the additives of natural origin containing secondary metabolites. The highly specific anti-microbial activity of plant secondary metabolites (PSM) is being exploited in ruminant nutrition to modulate rumen fermentation for decreasing methane production. Thereby use of feed supplements in the microbial and functional form can offer a solution to some extent to combat the problems faced by livestock owners.

## Materials and Methods

Twenty healthy growing buffalo calves (262.3±10.00 kg average body weight, 1-1.5 years old) were housed in well-ventilated shed with facilities for individual feeding and watering during the experimental period of 180 days at Animal Nutrition Shed, Indian Veterinary Research Institute, Izatnagar. The buffalo calves were randomly divided into four groups of five calves in each on the basis of body weight in complete randomized design. The basal diet fed to all the calves in four groups consisted of concentrate mixture (40% wheat bran, 30% ground maize grain, 27% soyabean meal, 2% mineral mixture, and 1% common salt) and wheat straw in the ratio of 50: 50. In addition to the basal diet, calves were supplemented with mixture of harad and garlic, **S. cerevisiae** fermented wheat bran and combination of both in T1, T2 and T3, respectively. Amount of feed, mixture of harad and garlic, and **S. cerevisiae** fermented wheat bran required for each calves was calculated at fortnightly interval based on their body weights.

About 5 ml of blood was drawn from each of the calves on 0, 90 and 180 days of experimental feeding by puncture of jugular vein in a sterile vial for estimation of hematological and blood biochemical parameters. Serum was separated by centrifugation as per standard procedure. The processed serum was used for estimation of cholesterol and triglycerides. Span Diagnostics Ltd. Kits were used for the same purpose as per manufacturer's protocol. Data generated in the experiment were statistically analyzed using ANOVA, general linear model (GLM) procedures for difference between treatments (T) and period (P) as described by Snedecor and Cochran (1994).

## Result

Effects of feed additives on serum lipid profile of growing buffaloes are depicted in Table 1. The cholesterol and triglycerides values ranged from 92.31±0.19 to 91.92±0.18 and 11.28±0.14 to 12.57±0.12 mg/dL, respectively.

## Discussion

Results revealed no significant (P>0.05) difference in the cholesterol and triglycerides values due to treatments and time intervals. In the study mixture of harad and garlic, **S. cerevisiae** and their combination as such have no influence on serum cholesterol and triglycerides level as all the values were within the physiological limit of 0-14 and 80-120 mg/dL, respectively (Kaneko et al., 1997).

In agreement with our finding (Samal, 2012) observed no effect on serum lipid profile of buffalo fed diet containing feed additives of plant origin. Similarly, Abu El-Ella and Kommonna (2013) also reported cholesterol was not significantly affected by dietary yeast culture (YC) supplementation during pre-mating and gestation periods of Damascus goats.

## Conclusion

The result of the present study implies that supplementation of mixture of herbal plants, **S. cerevisiae** and combination of both in the basal diet of growing buffaloes had no effect on blood lipid profile.

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**Table 1. Effect of feeding mixture of herbal plants, S. cerevisiae and combination of both on serum lipid profiles in growing buffaloes**

| Attributes | Periods (Days) | Dietary Treatments (T) | | | | Mean | SEM | P value | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | CON | T1 | T2 | T3 | | | T | P | T*P |
| Lipid profile | | | | | | | | | | |
| Cholesterol (mg/dL) | 0 | 93.22±0.67 | 92.75±0.51 | 92.35±0.67 | 92.62±0.52 | 92.74±0.15 | 1.086 | 0.993 | 0.744 | 1.000 |
| | 90 | 92.86±0.43 | 90.78±0.63 | 91.83±0.56 | 92.62±0.64 | 92.02±0.14 | | | | |
| | 180 | 90.84±0.62 | 91.05±0.54 | 90.45±0.53 | 90.52±0.47 | 90.71±0.13 | | | | |
| | Mean | 92.31±0.19 | 91.53±0.18 | 91.54±0.19 | 91.92±0.18 | | | | | |
| TG (mg/dL) | 0 | 13.39±0.45 | 12.37±0.26 | 11.67±0.56 | 13.02±0.27 | 12.61±0.11 | 0.394 | 0.635 | 0.429 | 1.000 |
| | 90 | 12.54±0.28 | 11.70±0.29 | 11.16±0.28 | 12.50±0.21 | 11.97±0.07 | | | | |
| | 180 | 11.77±0.25 | 10.98±0.25 | 11.02±0.22 | 11.61±0.18 | 11.35±0.06 | | | | |
| | Mean | 12.57±0.12 | 11.69±0.09 | 11.28±0.14 | 12.38±0.08 | | | | | |

**TG: triglycerides; CON: control with no additive; T1: mixture of herbal plants; T2: S. cerevisiae; T3: combination of T1 and T2; SEM: standard error of mean**

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