

Short Communications

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## Body Condition Scoring of Lactating Murrah Buffaloes Supplemented with Soybean Oil and Mustard Oil

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### ABSTRACT

#### Keywords

Murrah buffalo, Supplementation, Soybean oil, Mustard oil, Body condition score

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A total of eighteen advance pregnant Murrah buffaloes were divided in three groups of six each: Control (CON), Soybean oil (SBO) and Mustard oil (MO). The oils were supplemented @ 200 ml/animal/day from 21 days prepartum to 90 days postpartum to examine their effects on body condition score of lactating Murrah buffaloes. The results revealed non-significant changes and the values were numerically higher in SBO ( $3.34 \pm 0.16$ ) and MO ( $3.30 \pm 0.15$ ) followed by CON ( $3.17 \pm 0.12$ ). It is concluded that the supplementation of oils has kept the animals in positive energy balance and improved the body condition score in comparison to CON.

### Introduction

The body condition score of an animal is the visual assessment of the amount of fat and muscle covering the bones of an animal, regardless of body size (Anonymous, 2019a) and is directly influenced by the energy balance (Anitha *et al.*, 2011). Energy balance is the difference between energy consumed and energy expended. Early lactating dairy animals are said to be in negative energy balance as do not consume enough feed to meet the energy needs for maintenance and

milk production. Under this state, the animals utilize body fat as an energy source and lose body condition in the process (Anonymous, 2019b). In this context, maximizing energy intake by increasing the energy density of diet is considered logical feeding strategy for early lactating dairy animals. Here, cereal grains play a valuable role as sources of energy in the ration of dairy animals. However, feeding excessive amount of grains is undesirable due to milk fat depression, reduced fibre digestibility and possible rumen acidosis. Alternatively, fat supplements can safely

increase the ration energy density without disturbing the ruminal fermentation and improve the body condition score of animals (Boken *et al.*, 2005). In India, soybean oil and mustard oil are cheap sources of fat supplements and traditionally used in field conditions. The effects of soybean oil and mustard oil on the body condition scoring of lactating Murrah buffaloes is scanty, based on which the present study was carried out.

### **Materials and Methods**

A total of eighteen advance pregnant Murrah buffaloes from Livestock Farm, Adhartal, College of Veterinary Science & A.H., NDVSU, Jabalpur (M.P.) were selected 21 days prepartum and maintained under semi-intensive housing system. The animals were randomly divided in 3 groups of 6 each; CON (control; fed basal diet without supplementation), SBO (basal diet + soybean oil) and MO (basal diet + mustard oil). The oils were supplemented in concentrate @ 200 ml/animal/day upto 90 days postpartum.

All the experimental animals were fed according to their body weight, production and recommended nutrient requirements (ICAR, 2013). Water was made available to the animals round the clock and the daily routine managemental practices were followed in the dairy farm.

The body condition score (BCS) of buffaloes were observed at calving and then at monthly intervals till 90 days of lactation through visual observation and palpation to the 5 point scale with increments of 0.5 (Anitha *et al.*, 2011). The data were statistically analysed using ANOVA, described by Snedecor and Cochran (1994) and means showing significant differences in the ANOVA table were compared using the Duncan's Multiple Range Test (Steel and Torrie, 1980).

### **Results and Discussion**

The overall average BCS was  $3.17 \pm 0.12$ ,  $3.34 \pm 0.16$  and  $3.30 \pm 0.15$  in CON, SBO and MO, respectively (Table 1). There was no significant difference among the groups. The study reveals per cent improvement in body condition from calving to 3 months by 17.12, 23.29 and 27.91 in CON, SBO and MO, respectively whereas; the per cent improvement in SBO and MO was 5.36 and 4.10 in comparison to CON. Continuous increase in BCS was observed in all the groups throughout the study period.

Under conditions of similar DMI (kg/animal/day;  $19.60 \pm 0.44$ ,  $19.93 \pm 0.43$  and  $19.41 \pm 0.48$  in CON, SBO and MO, respectively) and BW (kg;  $529.72 \pm 6.95$ ,  $540.75 \pm 10.40$  and  $538.31 \pm 8.62$  in CON, SBO and MO, respectively) among the groups, the greater energy density of the soybean oil and mustard oil diet allowed a greater intake of energy to support a greater proportion of the milk produced compared with the buffaloes not supplemented.

The latter cows had to rely to a greater degree on body reserves for milk production and hence, had numerically lower body condition scores compared to the supplemented groups. The results are in accordance with the findings of Boken *et al.*, (2005).

It is concluded that the supplementation of oils has insignificantly improved the body condition scoring in lactating Murrah buffaloes by keeping the animals in positive energy balance in comparison to CON.

Soybean oil followed by mustard oil can be recommended during transition period and early lactation to get maximum benefits to the farmers by improving the body condition and ultimately the performances of animals.

**Table.1** Average monthly body condition score (BCS; Mean ± SE) of lactating Murrah buffaloes in different treatment groups

Months	CON	SBO	MO
At calving	2.92±0.20	2.92±0.30	2.83±0.25
1 <sup>st</sup>	3.17±0.28	3.25±0.38	3.25±0.31
2 <sup>nd</sup>	3.17±0.28	3.60±0.32	3.50±0.37
3 <sup>rd</sup>	3.42±0.24	3.60±0.32	3.62±0.25
Overall average	<b>3.17±0.12</b>	<b>3.34±0.16</b>	<b>3.30±0.15</b>

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