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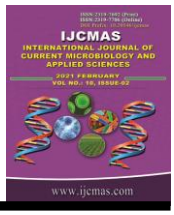

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Study of Correlation between Body Condition Score and Different Milk Constituents

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A B S T R A C T

Body condition scores (BCS) are subjective, visual or physical assessment of the amount of metabolizable energy stored in fat and muscle on a live animal. Present study was carried out on 45 animals of Sahiwal and Kankrej cattle breed each. BCS of individual cows was recorded in a 1-5 scale in which thickness of fat over the lumber and tail head area was estimated and was assigned score accordingly. Fat, protein and SNF were positively significant correlated with BCS whereas Lactose per cent was non significantly correlated.

Introduction

Body condition scores (BCS) are subjective, visual or physical assessment of the amount of metabolizable energy stored in fat and muscle on a live animal. Body weight alone is a poor marker because energy stores can vary by as much as 40 % in cows with similar body weight (Andrew *et al.*, 1994). In addition, tissues are mobilized in early lactation even though feed intake is generally increasing, the extent of body tissue loss can be masked by gastrointestinal fill, such that body weight changes may not reflect changes in bio-energetically important tissues (National Research Council, 2001). In local dairy animals BCS with reproduction and fertility, has been extensively studied by our group (Qureshi *et al.*, 2002) in local buffaloes. BCS was significantly affected by the period of calving and season of the year.

Materials and Methods

The present study was carried out at Livestock Research Station, Collage of Veterinary and Animal Science, Bikaner (RAJUVAS), Rajasthan, India, on Sahiwal and Kankrej cattle maintained in loose housing system. All the animals were fed

seasonal green fodder, dry fodder and compound concentrate mixture as per normal feeding schedule of the farm. A total of 45 milk samples were collected from 45 healthy, lactating Sahiwal and Kankrej cows each. About 50 ml of milk sample was collected aseptically in the clean sampling bottles after discarding the first 2-3 streaks of fore milk. The collected samples were brought to the laboratory immediately for further analysis. Milk samples were processed on the same day. All the samples were analyzed by using Lactose can milk auto analyzer as per standard procedure. The samples were collected in different season viz. Summer, Winter and Rainy. The whole lactation was divided in three stages of lactation i.e. early (1-100 days), mid (101-200 days) and late (201days onwards). Body condition score was determined by observing the condition of tail head and loin areas and BCS of individual cows was recorded in a 1-5 scale in which thickness of fat over the lumber and tail head area was estimated and was assigned a score from 0 (very weak) to 5 (very fat)and increments of 0.25 were added within the whole number of value and the datas were collected once. All statistical analysis was performed using SPSS software statistical package (version 20.0).

Results and Discussion

The results pertaining to correlation coefficient in BCS and milk constituents have been depicted in table 1 Lactose per cent was non significantly correlated with the BCS while all other constituents (i.e. fat, protein and SNF) were positively significant correlated with BCS. Body condition scoring is a widely used method for evaluating the nutritional status of the dairy animals.

Table.1 Pearson correlation coefficients of BCS with milk constituents

		BCS	Fat	Protein	Lactose	SNF
BCS	Pearson correlation	1	.578**	0.291**	0.139	.308**
	Sig. (2- tailed)	90	.000	.000	0.192	.003
	N			90	90	90

* *Significant (P<0.01)

Similar trend observed by Hossain *et al.*, (2015) in Holstein Friesian crossbred dairy cows and found a positive relationship between BCS and Protein, Lactose and SNF. When milk production increase and the energy requirements exceed its intake, the cows usually go for negative energy balance and initiates to mobilize lipid reserves by losing their BCS. It could be due to the reason that, as milk production increased linearly, BCS tended to decrease gradually at the expense of reserved body fat. However, during late lactation, as BCS tended to increase due to linear decrease in milk yield the concentration of milk fat, protein, lactose and SNF increased in the same trend.

In conclusion body condition is a very good indication of physiological status of cow it affects the milk composition effectively. So it will be beneficial for farmers for better feeding, management and fetching good prices of milk.

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