

## Studies on nutritional status of ruminants and availability of food resources in Ramabai Nagar district of U.P.

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### ● ABSTRACT ●

A total 1020 animals out them 495 indigenous cows and 525 graded buffaloes were studied on the basis of nutritional status and availabilities of feed and fodder resources of some rural areas of Ramabai Nagar of U.P. The study revealed that the dry matter (DM) requirement and availability of graded buffaloes was noted higher than the indigenous cows. The average DCP (Digestible crude Protein) requirement of indigenous cows and graded buffaloes per animal was noted  $0.691 \pm 0.12$  and  $0.742 \pm 0.14$  kg, respectively. The requirement of DCP and TDN (Total Digestible Nutrient) were observed to  $0.691 \pm 0.12$  and  $6.012 \pm 0.14$  in indigenous cows and  $0.742 \pm 0.14$ ,  $7.045 \pm 0.16$  in graded buffaloes, respectively. As against this the availability of T.D.N. was found to be  $5.305 \pm 0.012$  and  $6.342 \pm 0.162$  kg per animal per day for indigenous cows and graded buffaloes, respectively.

**KEY WORDS :** Indigenous cows, Graded buffaloes and food resources

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### ● INTRODUCTION ●

The cattle wealth in India is pretty large yet in terms of performance efficiency it is at the lowest ebb. This comprehensive disparity squarely rests in the paucity to high quality feeds including concentrates. As such as animals are not able to display their full genetic potential so as to realize the maximum yields. It has been explored that the country is facing a shortage of DCP and TDN to the tune of about 45 and 58 per cent, respectively. At a time, these situations take a turn for the worst when droughts and floods spell havoc and there is destruction to vast areas of forage crops throughout the country. It is obligatory therefore, to project long term judicious feeding plants along with providing requisite healthy cover to animals in order to exploit their full genetic worth. Imbalanced feeding has tarnished the production potential of animals which in turn has impaired the interest of owners due to reduced margin of profit setting thereby a vicious cycle. in the computation of ration for cattle, the total

requirement in term of DM, DCP and TDN is determined for 24 hours. The requirement of the quantity of DM depends on the body weight of the animals and also with the nature of its production.

Naturally, all its requirements whether organic nutrients like carbohydrate protein and fat or inorganics should come from the total dry matter which an animals is given. The grazing of animals all our country are neglected as the facilities for grazing is extremely poor. While calculating the total requirements of DCP and TDN, one should consider the physiological needs or say the purpose for which the animals have to be fed. Hence, the present study was under taken to determine the nutritional status of animals and work out feed conversion efficiency.

### ● MATERIALS AND METHODS ●

The present study was conducted in some rural areas of ramabai Nagar district of U.P. during 2005-2006. a total 1020 animals, out of them 495 indigenous cows and 525 graded buffaloes reared by various farmers of Ramabai Nagar district were studied. The distribution of families was done according to their size of holding and number of indigenous cows and buffaloes reared in different categories. The amount of dry matter (DM), digestible crude protein (DCP) and total digestible nutrients (TDN) in each of the concentrated, feed and fodder fed to the

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animals were calculated following the procedure of Sen *et al.* (1978). Usually the dry matter consumption varies with the live weight of the animals and also with the nature of its production. Cattle generally eat about 2.0 to 2.5 kg of dry matter per 100 kg of live weight daily. The milch cattle consume 2.5 kg dry matter per 100 kg of live weight whereas the buffaloes are slightly heavier eaters than cows and hence eat 3.0 kg of dry matter per 100 kg of live weight. The body weight of the animals was calculated by the weighing machines but in non-availability of machine, the weight was calculated according to the following formula:

$$\text{Body weight (kg)} = \frac{\text{Length of hert girth}}{8,8.5 \text{ or } 9} \times \frac{933}{1000}$$

(If the hert girth is below 65" the figure used is 9, hert girth is between 65" to 80" figure used is 8.5 and above 80" figure used is 8)

The maintenance rations and the production ration were computed for each animals according to the standard prescribed by Sen *et al.* (1978).

## ● RESULTS AND DISCUSSION ●

In the present study, an attempt was made between the indigenous cows and graded buffaloes to establish the relationship of milk yield and nutritional status of animals with the corresponding intake of different feeds, fodders and concentrates and their nutritive values. The amount of dry matter (DM), total digestible nutrient (TDN), digestible crude protein (DCP) and milk yield of indigenous cows and graded buffaloes were recorded. The results indicated that the body weight and dry matter requirement and availability to graded buffaloes was higher than the indigenous cows. It is evident from Table 1 that average body weight of indigenous cows and graded buffaloes per animals was 412.50±4.12 kg and 485.35±12.50 kg,

respectively. The over all average body weight of both ruminants was found to be 448.92±8.31 kg. the body weight of graded buffaloes was recorded significantly higher ( $P < 0.01$ ).

The recommended allowance for dry matter of indigenous cows and graded buffaloes per day/animal was also observed to be 10.31±0.10 and 14.56±0.37 kg, respectively. Whereas the dry matter availability of these animals was 9.34±0.15 kg and 12.42±0.25 kg, respectively. It is in closed agreement of the observation made by Honda and Gill (1989) who reported 11.10±0.24 kg/day dry matter. The overall average recommended allowances and availability of dry matter of these ruminants was found to be 12.43±0.23 kg and 10.88±0.20 kg, respectively. The nutritional status deficit/surplus in respect to dry matter was also calculated in the present study which indicated that the indigenous cows as well as graded buffaloes did not receive the required amount of dry matter and this was because inadequate feeding of roughage and concentrate to these animals which resulted in lower productivity. Roughages are the cheaper ingredients and form the bulk of the ration which fulfill the dry matter requirement of the animals. A deficit in the supply of dry matter indicates that the animals remained under fed which affected their production performance.

The nutrient (DCP) availability of these animals was also studied and found to be 0.631±0.015 and 0.681±0.017 kg in indigenous cows and graded buffaloes, respectively (Table 2). The overall average nutrient requirement and status in form of DCP was 0.716±0.13 and 0.656±0.014 kg, respectively. It is also clear from the present study that the requirement and availability of DCP of indigenous cow was lower than the graded buffaloes. The result indicated that the DCP status of both cows and buffaloes was poor. The animal did not receive the required amount of DCP in their rations which was due to poor feeding by the farmers that caused a lower milk

**Table 1: Dry matter requirement and status of animal per day**

Ruminants	No. of animals	Average body weight	Recommended allowance	Nutrient available	Nutrient status
Indigenous cows	495	412.50±4.12	10.31±0.10	9.34±0.15	-0.97
Graded buffaloes	525	485.35±12.50	14.56±0.37	12.42±0.25	-2.14
Overall average	1020	448.92±8.31	12.43±0.23	10.88±0.20	-1.55

**Table 2: DCP requirement and status of ruminants per day**

Ruminants	No. of animals	Body weight/ animals (kg)	Milk yield/ day	Recommended allowance (kg)	Nutrient available (kg)	Nutritional status (kg)
Indigenous cows	495	412.5±4.12	3.45±0.14	0.691±0.12	0.631±0.015	0.06±0.001
Graded buffaloes	525	485.35±12.50	5.45±0.12	0.742±0.14	0.681±0.017	0.06±0.001
Overall average	1020	448.92±8.31	4.45±0.13	0.716±0.13	0.656±0.014	0.06±0.001

**Table 3 : TDN requirement and status of animals per day**

Ruminants	No. of animals	Body weight/ animals (kg)	Milk yield	Recommended allowance (kg)	Nutrient available (kg)	Nutritional status (kg)
Indigenous cows	495	412.5±4.12	3.45±0.14	6.012±0.14	5.305±0.012	707±0.20
Graded buffaloes	525	485.35±12.50	5.45±0.12	7.045±0.16	6.342±0.162	703±0.20
Overall average	1020	448.92±8.31	4.45±0.13	6.582±0.15	5.832±0.141	705±0.20

production. It is in agreement with the report of Randne *et al.* (1993).

The deficiency of DCP appeared to be the same order in the both type of animals, reason being to the short supply of leguminous feed and fodder and the high cost of concentrate which were not included in the ration in adequate quantities to meet out the requirements of the animals.

The total digestible nutrients (TDN) requirement and status of indigenous cows and graded buffaloes in the present investigation are presented in table 3. It is evident that the total digestible nutrient (TDN) of indigenous cows and graded buffaloes was 6.012±0.14 and 7.045±0.16 kg, respectively. As against this the availability of TDN was found to be 5.305±0.012 and 6.342±0.162 kg per animal per day for indigenous cow and graded buffaloes, respectively. The overall average nutritional requirement and availability of these animals was 6.582±0.15 and 5.832±0.141 kg, respectively. It is obvious from these results that the TDN requirement of graded buffaloes was higher than that of indigenous cows. Verma and Hussain (1988) have also reported the similar requirements of the animals. The DM and TDN intake of the animals kept by various categories of farmers were according to requirements. Whereas the DCP intake was lower than the recommended allowances in almost all the categories of farmers except small and large farmers.

The results obtained clearly indicated that the nutritional status of indigenous cows and graded buffaloes

was poor in comparison to its requirement of TDN. These animals did not receive the required amount of TDN through their ration.

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