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Studies on Feed Consumption and Nutritional Status on Lactating Murrah Buffaloes of Rural areas of Kushinagar District (U.P.)

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Feeding system of Murrah Buffaloes on the availability of crop residues and crop by-products and pasture and grasses on common property resources. The present work was therefore taken up the assess of the proximate compositions of commonly available feed stuffs in rural areas of Kushinagar District (UP). Feed sample were collected from 250 households were randomly selected from 10 villages of 05 block in District. Each block contain 02 village and each villages included 25 farmers. Which were categorized in to 05 groups on the basis of land holding capacity, Landless, Marginal, Small, Medium and Large categories of farmers. Each category included equal number of farmer in each village.Data were collected in winter, spring, summer, rainy and autumn season. Dry matter intake in winter, summer and autumn seasons were significantly higher in large category of farmers followed by other category of farmers. In spring seasons DMI were significantly higher in medium category of farmers followed by other farmers. Digestible crude protein and total digestible nutrient intake in Milch buffaloes were significantly differed between in all seasons under all category of farmers. DCP and TDN intake feeding were depend upon concentrate mixture feeding and economics status of farmers.

Key words : *Dry matter intake, digestible crude protein intake, total digestible nutrient.*

Introduction

India is predominantly an agrarial economy with more than 70% of the population in village depending upon agriculture. Animal husbandry and allied sector activities for the livelihood. Among many livestock enterprises, dairying is the most ancient occupation established in the rural setting of your country, dairy sector contributed significantly in generating employment opportunities and supplements less labors of rural India (1), besides providing food security. The Indian former maintain a large number of cows and buffaloes in rural areas, cow mostly maintained for producing good quality draft bullocks as well as for milk production, however buffaloes are maintained for fat rich and meat production.

Materials and Methods

The present study was conducted during the different seasons of the years 2019-2020 *viz.,* winter, spring, rainy, summer and autumn seasons. Murrah buffaloes owners were selected from different village of Kushinagar district of UP to assess the feed consumption, and milk production and its composition and feed milk relationship of buffaloes in rural areas of kushinagar. Two hundred fifty lactating Murrah buffalos were randomly selected from ten village of five blocks in kushinagar districts each block contain two village and each village included 25 farmers, which are categorized into 05 groups on the basis of land holding capacity like landless,marginal,small,medium and large category of farmer.

In present investigations data were collected with the help of questionnaire during survey from the individual farmer and by personal observation. Measurement of animal bodyweight of the individual animal was calculated by using Minnesota formula (2)

$$\text{Body weight (kg)} = L \times (G)^2 / 660$$

Where, L = Body length from shoulder point to pin bone in inch.

G = Chest girth in inch.

Order and stage of lactation of buffaloes was recorded from individual farmer during survey. The quantity of feed and fodder offered to various groups of animal during 24 hrs. were recorded by weighimg or oral inquiries, Grazing intake was also recorded. The samples of feed and fodder fed to various animals were collected (minimum 500 gm) from the owners for proximate analysis as per method of (3). The quantity of DM, DCP, and TDN intake by different animal were calculated from the record of intake of feed and fodder using average digestibility coefficient value given by (4). The dry matter intake in winter and summer seasons were35% and 20% respectively after full grazing against the standard requirement given by (5). The statically method adopted in the analysis of data by formula, (Linear model and Cobb-Douglas model).

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Table-1 : Chemical composition and nutritive value of feeds and fodders (on DM basis) on the area under survey.

Sl. No.	Igrediants	DM%	CP%	EE%	CF%	NEF%	D. Coefficient		
							ASH%	DCP%	TDN%
1.	Berseem	20.00	16.80	1.70	26.80	40.00	14.70	12.00	60.00
2.	Sugarcane Top	35.00	3.70	3.50	40.80	47.25	4.75	2.70	45.50
3.	Green Mazie	30.00	7.40	1.90	29.30	53.30	8.10	4.00	56.60
4.	G.G Mxture/posture	25.30	6.50	1.10	30.10	46.50	11.40	4.00	65.00
5.	Doob Grass	25.30	12.10	1.30	3100	43.10	10.00	9.40	62.00
6.	Paddy Straw	90.00	3.70	1.65	30.75	48.40	15.50	0.00	38.88
7.	Wheat Sraw	90.00	2.50	1.00	40.00	42.00	14.50	0.00	44.40
8.	Wheat grain	90.00	6.50	2.10	3.10	82.20	2.50	6.30	92.30
9.	Maize grain	90.00	7.70	3.80	2.00	82.50	2.00	7.00	81.10
10.	Wheat Bran	90.00	10.80	3.15	10.20	64.50	8.45	8.70	70.40
11.	Rice Bran	90.0	10.50	7.70	20.00	49.10	11.76	9.10	76.10
12.	Mustard Cake	90.00	36.00	9.50	8.50	38.50	5.50	27.83	74.20
13.	Arhar Chuni	90.00	14.80	2.60	22.25	52.55	7.80	14.40	74.10

Results and Discussion

The green fodder consumption (Kg/animal/day) in spring and summer season was significantly higher in landless farmer in comparison to other category of farmer. In rainy season highest in marginal farmer compared than other and in winter season GF consumption werehighest in landless farmer in comparison than others.

The dry fodder consumption (Kg/animal/day) in winter, rainy and autumn season were significantly higher in landless category of farmer in comparison to other category and in summer season DF consumption significantly higher in marginal category of farmer followed by others. In spring season none significantly differ under all category of farmer.

The concentrate mixture consumption (Kg/animal/day) in winter, summer, rainy and autumn season of the year significantly higher in large category of farmer in comparison to other category of farmer. In spring season feeding of concentrate mixture were significantly higher in medium category of farmer in comparison to others.

Dry matter intake in milch buffalo have been presented in table-2. DMI was significantly higher in large category of farmer in winter , summer, rainy and autumn season of the year compared than other category of farmer and in spring season DMI was significantly higher in medium category of farmer comparde than other category of farmer, similar observation was reported by (6, 7, 8). Deficient DMI was provided under all season in all category of farmer in comparison to requirement.

Digestible crude protein intakes in milch buffalo have been presented in table-2. DCPI was significantly higher in marginal category of farmers in comparison to other category of farmers under winter, spring , summer and rainy seasons of the year but in autumn season DCPI was dignificantly higher in large category of farmer in comparison to other category of farmers. Similar observation was reported (7, 9). Deficient DCPI was provided under all season in all category of farmer in comparison to requirement.

Total digestible nutrientsintakes in milch buffalo have been presented in table-2. TDNI was significantly higher in marginal category of farmers in comparison to other category of farmers under winter, spring and rainy season of the year and in summer and autumn season TDNI was significantly higher in large category of farmers in comparison to other category. Similar observation was reported by (9,10,11). Deficient TDNI was provided under all season in all category of farmer in comparison to requirement.

Variation due to season/categories/interaction : The record for various nutrient were pooled together over the season and categories. Then they had been subjected to statistically analysis to find out the effect due to season, category and their interaction. Thestatically analysis of data showed that animal body weight was significantly ($P<0.01$) differed in different category as well as in interaction, whereas seasons did not touch the level of significantly .The green fodder consumption in milch buffaloes significantly differed ($p< 0.01$) due to season categories and interaction also. Dry fodder consumption in milch buffaloes differed significantly ($P<0.01$) due to seasons, categories and as well as interaction. Concentrate mixture consumption in milch buffaloes differed significantly ($P<0.01$) due to seasons, categories and interaction. Dry matter intake (DMI) in milch buffaloes differed significantly ($P<0.01$) due to seasons, categories and interaction. Digestible crud protein in take (DCPI) in milch buffaloes differed significantly ($P<0.01$) due to

Table-2 : Average consumption and nutritional of feed and fodder by lactating murrah buffaloes owned by different categories of farmer in various seasons of the years in district Kushinagar.

Category of farmer	Animal body weight (kg)	Consumption/day/animal(kg)			Available fromration/Day/Animal			Nutrient requirements /animal/day		
		GF	DF	Conc Mix	DMI	DCPI	TDNI	DMR(kg)	DCPR(kg)	TDNR(kg)
Winter Season										
Land less	483.12 ± 0.81	11.74 ± 0.25	2.56 ± 0.11	1.62 ± 0.10	6.25 ± 0.13	0.41 ± 0.038	4.88 ± 0.12	14.48 ± 0.14	0.59 ± 0.14	6.21 ± 0.11
Mariginal	508.48 ± 0.76	11.30 ± 0.19	2.68 ± 0.10	3.49 ± 0.14	7.86 ± 0.15	0.59 ± 0.042	6.29 ± 0.13	9.50 ± 0.11	0.71 ± 0.04	7.18 ± 0.11
Small	487.66 ± 0.76	10.38 ± 0.19	2.57 ± 0.10	2.71 ± 0.13	6.85 ± 0.14	0.42 ± 0.040	5.09 ± 0.12	14.52 ± 0.13	0.63 ± 0.04	642 ± 0.10
Medium	487.24 ± 0.83	9.64 ± 0.20	2.70 ± 0.10	3.19 ± 0.14	7.23 ± 0.14	0.57 ± 0.041	5.91 ± 0.12	14.49 ± 0.15	0.65 ± 0.04	6.58 ± 0.10
Large	499.22 ± 0.47	9.76 ± 0.22	2.90 ± 0.11	3.88 ± 0.16	9.74 ± 0.21	0.52 ± 0.043	5.54 ± 0.13	12.61 ± 0.16	0.62 ± 0.04	6.53 ± 0.12
Avr. SEm ±	493.14 ± 0.670	10.6 ± 0.04	2.69 ± 0.011	2.98 ± 0.019	7.59 ± 0.025	0.50 ± 0.020	5.54 ± 0.015	13.12 ± 0.020	0.64 ± 0.002	6.58 ± 0.012
Spring season										
Land less	50028 ± 0.81	12.40 ± 0.22	2.76 ± 0.12	2.24 ± 0.11	6.93 ± 0.13	0.40 ± 0.04	4.71 ± 0.12	14.92 ± 0.14	0.73 ± 0.05	7.03 ± 0.15
Marginal	490.66 ± 0.76	12.54 ± 0.22	2.76 ± 0.11	2.76 ± 0.12	7.62 ± 0.14	0.52 ± 0.04	5.74 ± 0.14	14.72 ± 0.12	0.74 ± 0.04	7.07 ± 0.11
Small	490.92 ± 0.65	13.34 ± 0.17	2.78 ± 0.12	2.68 ± 0.11	7.62 ± 0.12	0.43 ± 0.04	4.99 ± 0.12	14.71 ± 0.11	0.71 ± 0.04	6.95 ± 0.10
Medium	491.86 ± 0.75	12.34 ± 0.20	2.85 ± 0.11	3.49 ± 0.12	8.22 ± 0.14	0.49 ± 0.03	5.35 ± 0.12	14.77 ± 0.13	0.66 ± 0.04	6.67 ± 0.11
Large	493.14 ± 0.82	10.42 ± 0.22	2.72 ± 0.10	2.98 ± 0.15	7.19 ± 0.15	0.50 ± 0.04	5.43 ± 0.13	14.84 ± 0.14	0.62 ± 0.03	6.45 ± 0.11
Avr. SEm ± sq	493.37 ± 0.56	12.21 ± 0.04	2.78 ± 0.013	2.83 ± 0.015	7.52 ± 0.19	0.470 ± 0.02	5.25 ± 0.016	14.80 ± 0.017	0.69 ± 0.002	6.83 ± 0.013
Summer Season										
Land less	501.40 ± 0.76	9.68 ± 0.19	2.61 ± 0.10	2.86 ± 0.11	6.84 ± 0.13	0.52 ± 0.04	5.71 ± 0.13	15.07 ± 0.13	0.61 ± 0.03	6.52 ± 0.11
Marginal	493.84 ± 0.77	12.68 ± 0.21	3.07 ± 0.10	2.55 ± 0.17	9.24 ± 0.17	0.51 ± 0.04	5.94 ± 0.12	14.80 ± 0.13	0.687 ± 0.041	6.80 ± 0.10
Small	492.94 ± 0.82	12.98 ± 0.20	2.57 ± 0.10	3.48 ± 0.14	7.92 ± 0.14	0.51 ± 0.04	5.33 ± 0.11	14.88 ± 0.14	0.73 ± 0.03	6.32 ± 0.11
Medium	505.86 ± 0.77	11.64 ± 0.23	3.02 ± 0.09	2.76 ± 0.18	7.53 ± 0.14	0.53 ± 0.03	5.62 ± 0.12	14.88 ± 0.21	0.62 ± 0.03	6.46 ± 0.09
Large	495.42 ± 0.88	12.44 ± 0.19	3.02 ± 0.10	4.34 ± 0.16	9.39 ± 0.17	0.62 ± 0.044	6.24 ± 0.11	14.83 ± 0.15	0.67 ± 0.037	6.70 ± 0.09
Avr. SEm ±	497.89 ± 0.640	11.88 ± 0.040	2.86 ± 0.010	3.18 ± 0.021	8.18 ± 0.022	0.540 ± 0.002	5.77 ± 0.014	14.89 ± 0.024	0.660 ± 0.005	6.56 ± 0.01
Rainy Season										
Land less	488.44 ± 0.82	9.22 ± 0.18	2.94 ± 0.13	2.66 ± 0.10	6.89 ± 0.13	0.425 ± 0.036	5.17 ± 0.10	14.65 ± 0.14	0.64 ± 0.04	6.45 ± 0.10
Marginal	49+3.1 4 ± 0.76	1208 ± 0.21	2.65 ± 0.10	2.92 ± 0.11	7.48 ± 0.15	0.464 ± 0.036	5.49 ± 0.11	14.86 ± 0.13	0.64 ± 0.03	6.55 ± 009
Small	495.10 ± 0.82	11.44 ± 0.22	3.03 ± 0.12	2.87 ± 0.012	7.57 ± 0.14	0.431 ± 0.036	5.07 ± 0.11	14.77 ± 0.14	0.62 ± 0.02	6.50 ± 0.10
Medium	480.56 ± 0.75	11.72 ± 0.03	2.67 ± 0.11	2.70 ± 0.11	7.21 ± 0.13	0.438 ± 0.036	5.16 ± 0.11	14.53 ± 0.53	0.60 ± 0.03	6.25 ± 009
Large	515.04 ± 0.96	11.42 ± 0.23	3.02 ± 0.12	3.05 ± 0.12	8.11 ± 0.15	0.448 ± 0.389	5.39 ± 0.12	15.45 ± 0.17	0.62 ± 0.04	6.54 ± 0.11
Avr. SEm ±	494.46 ± 0.680	11.18 ± 0.05	286 ± 0.013	2.84 ± 0.013	7.45 ± 0.20	0.440 ± 0.010	5.26 ± 0.012	14.85 ± 0.020	0.62 ± 0.001	6.46 ± 0.010
Autumn season										
Land less	4800.8 ± 1.28	1.68 ± 0.18	3.13 ± 012	2.01 ± 0.11	7.23 ± 0.13	0.386 ± 0.031	4.80 ± 0.08	14.84 ± 0.14	0.62 ± 0.03	6.45 ± 0.10
Marginal	495.08 ± 1.17	12.58 ± 0.24	2.65 ± 0.10	2.32 ± 0.14	7.54 ± 0.16	0.412 ± 0.039	4.92 ± 0.11	14.74 ± 0.19	0.63 ± 0.05	6.42 ± 0.13
Small	494.82 ± 0.70	1.34 ± 0.23	2.71 ± 0.10	2.39 ± 0.11	7.11 ± 0.13	0.432 ± 0.033	5.12 ± 0.10	14.85 ± 0.12	0.61 ± 0.04	6.34 ± 0.09
Medium	488.89 ± 1.23	11.74 ± 0.25	3.00 ± 0.13	2.51 ± 0.12	4.78 ± 0.15	0.426 ± 0.034	5.05 ± 0.11	4.98 ± 0.13	0.61 ± 0.03	6.36 ± 0.09
Large	522.20 ± 0.95	11.28 ± 0.20	3.32 ± 0.13	2.87 ± 0.10	7.87 ± 0.13	0.437 ± 0.033	5.04 ± 0.09	15.64 ± 0.1	0.63 ± 0.04	6.58 ± 0.10
Avr. SEm ±	496.12 ± 1.150	12.12 ± 0.05	2.96 ± 0.014	2.42 ± 0.013	7.51 ± 0.0020	0.420 ± 0.010	4.99 ± 0.011	15.01 ± 0.023	0.62 ± 0.001	6.43 ± 0.011

seasons, categories and interaction. Total digestible nutrient in take (TDNI) in milch buffaloes differed significantly (P<0.01) due to seasons, categories and interaction.

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