

Determination of Nutritive Value of Wheat Straw and Groundnut Haulm Mixture in Crossbred Bullocks

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In Saurashtra region livestock owners are feeding traditionally the mixture of wheat straw and groundnut haulm (contained thin stems, leaves and immature groundnuts) to their livestock. It is well documented that feeding a mixture of different types of feeds/fodders enhances their digestibility due to associative effect (Ranjhan, 1981 and Maynard *et al.*, 1985). Data are not available on nutritive value of such combination in literature, hence an effort was made to determine the nutritive value of wheat straw and groundnut haulm mixture.

Six crossbred (J x K x HF) bullocks of average body weight 261.8 ± 9.3 kg were used for this experiment and were fed a mixture of 4.0 kg

wheat straw and 3.0 kg groundnut haulm daily. After a preliminary feeding of 21 days, a metabolism trial of 7 days duration was conducted by conventional method. The representative samples of feeds offered, leftover, feces and urine were collected daily during collection period and pooled samples were analysed following standard procedures (AOAC, 1980).

Chemical composition of feeds offered to bullocks is presented in Table 1. The average dry matter consumption was 5.30 kg per day per animal and 2.03 kg/100 kg body weight. The amount of dry matter consumed was sufficient to maintain the body weight of the animals and to meet their maintenance requirement. Groundnut haulm has 11.88 per cent crude protein on dry matter basis. The average data for digestibility (%) of nutrients are presented in Table 1.

Feeding of wheat straw and groundnut haulm mixture provided 3.90 per cent DCP and 56.77 per cent TDN on dry matter basis. However, Shukla *et al.* (1985) reported 5.67 per cent DCP and similar values of TDN for groundnut haulm alone. Lower DCP content under present study

TABLE 1

Chemical composition (per cent on dry matter basis) and digestibility of fodders mixture fed to animals.

Constituents	DM	OM	C. Protein	E. Ext.	C. fibre	N.F.E.	Ash	Silica	P	Ca
Fodders										
Wheat straw	-	-	3.76	3.32	39.51	43.22	10.19	7.09	0.12	0.52
Groundnut haulm	-	-	11.88	4.00	24.50	49.42	10.20	2.06	0.34	2.20
Digestibility%	54.16	59.14	53.90	69.12	64.01	56.88	-	-	-	-
	± 1.52	± 1.33	± 2.21	± 1.94	± 1.20	± 1.78				

nt be due to feeding of groundnut haulm and at straw mixture as against sole feeding of ndnut haulm reported by Shukla *et al.* (1985).

The balances of nitrogen (N) and calcium (Ca) e positive, while that of phosphorus was gative (Table 2). These data suggested that retion of N was 46.13 and 33.89 per cent rough feces and urine, respectively and imals retained about 20 per cent N. However, case of P and Ca main route of excretion was

found to be through feces. The per cent excretion of P through feces was 149.70, which led to negative phosphorus (P) balance. Therefore it is advised to feed or supplement mineral mixture or some other source of phosphorus when this mixture is fed to cattle and buffaloes. The main reason for negative phosphorus balance may be due to deviation in calcium and phosphorus ratio because of high calcium content (2.20 per cent) in groundnut haulm.

TABLE 2
Average balance of N, P and Ca (g per day per animal) of fodders mixture fed to animals.

Nutrients Particulars	N		P		Ca	
Total intake	74.71	(100.00)	13.40	(100.00)	82.78	(100.00)
	±1.52		±0.34		± 1.56	
Excreted through faeces	34.46	(46.13)	20.06	(149.70)	57.88	(69.92)
	± 1.79		± 1.09		± 2.44	
Excreted through urine	25.32	(33.89)	0.09	(0.67)	3.49	(4.22)
	± 1.66		± 0.02		± 0.31	
Balance	+14.93	(19.98)	- 6.75	(- 50.37)	+21.41	(25.86)
	± 1.48		± 0.87		± 1.77	

Figures indicate per cent of intake.

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