

A Note on Utilization of Beet (*Beta vulgaris*, L) pulp in Concentrate Mixture by Lactating Cows

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Dried beet pulp is a carbohydrate rich byproduct of sugar beet industry. Various workers have tried sugar beet pulp in cattle feeds (Bhattacharya and Sleiman, 1971; Bhandari and Maheshwari, 1973). Hence, an attempt was made to study the utilization of beet pulp in the ration of lactating cows.

To know its suitability in cattle feeds, metabolism trial was conducted

as per conventional method on three lactating Kankrej cows. Daily ration of cows consisted of concentrate mixture (40% beet pulp; 25% groundnut cake; 15% guar meal; 7% cotton seed cake; 10% molasses; 2% salt and 1% bone-meal), 2 kg green N.B. 21 fodder and dried N.B. 21 hay *ad lib*. After 10 days period of preliminary feeding, digestibility and balance trial was conducted for 7 days. Samples of feed, feces, urine and milk were analysed by Anon. (1975) methods.

Palatability: The average dry matter consumption was 2.88 ± 0.28 kg/day/100 kg body weight. Thus, the lactating cows could consume sufficient quantity of concentrate mixture containing 40% dried beet pulp.

TABLE 1

Digestibility coefficients and balances.

Animal No.	C. Protein	E. Extract	C. Fibre	N.F.E.	O. Matter
<i>Digestibility Coefficient ((Whole ration)</i>					
1	59.78	43.68	80.80	62.56	67.21
2	65.13	49.16	72.01	63.32	65.45
3	58.26	57.87	71.47	58.68	62.37
Av.	61.06	50.24	74.76	61.52	65.01
SE	± 2.08	± 4.13	± 3.02	± 1.44	± 1.41
Balances of Nitrogen, Phosphorus and Calcium (g/day/animal).					
Nutrients/Particulars	Nitrogen		Phosphorus		Calcium
Total intake	206.02		57.76		81.73
Voided in Feces	79.95		38.57		59.75
,, in Urine	70.57		0.16		1.99
,, in Milk	42.30		9.08		10.92
Total voided	192.82		47.81		72.66
Balance	+13.20		+9.95		+9.07
SE	± 5.80		± 0.35		4.43

Composition: The beet pulp and concentrate mixture used had 11.1, 23.5 C. protein; 0.1, 3.0 ether extract; 16.5, 10.5 crude fibre; 51.9, 48.6 N.F.E; 0.17, 0.63 phosphorus and 0.95, 1.06% calcium on dry basis respectively.

Digestibility and digestible nutrients:

The results on digestibility coefficients for organic nutrients with the balances of nitrogen, phosphorus and calcium are given in Table 1.

The digestibility data revealed that the crude protein and NFE of whole ration were digested to the extent of 61.0%. The digestibility of crude fibre was found to be 74.76% while ether extract digestibility was comparatively low (50.24%) than that of other organic nutrients. Bhattacharya and Sleiman (1971) reported that beet pulp was well utilized for maintenance and production in dairy cows when it was incorporated at 55% level in the ration. They had also observed that crude fibre digestibility was increased at each increasing level of beet pulp in the ration.

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The available digestible nutrients have also been worked out from the nutrients intake and voided in faeces. The average data indicated that the ration supplied 0.788 kg DCP and 6.56 kg TDN per animal. This result suggested that the available nutrients are higher as compared to Sen and Ray (1971) requirement for lactating cows.

Balances of nitrogen and minerals:

The data on balances (Table 1) indicated that all the animals showed positive nitrogen, phosphorus and calcium balances.

The overall results suggested that dried beet pulp can be incorporated in the concentrate mixture of lactating cows at 40% level without any deleterious effect on nutrients utilisation.

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