



Effect of feeding soybean straw on Intake and milk Production of Lactating Crossbred Cows

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Abstract- Madhya Pradesh is also referred as soybean state and thus had a huge production of soybean by-products in addition to the main crop production, which is utilized for oil production. Soybean straw is one of them and on the basis of its huge availability it was incorporated in the diet of crossbred cows and its effect was observed on dry matter intake and milk production. The experiment was conducted on 12 cross bred cows by dividing them into three equal groups as per the completely randomized design on the basis of their milk production. One of the groups was served as control and fed concentrate mixture as per the production requirements (NRC, 2001) and *ad-libitum* wheat straw. The second and third groups were fed similarly but having replaced their wheat straw with soybean straw at the level of 50 and 75%, respectively. The feeding was continued for a period of three months and dry matter intake and milk production of the crossbred cows was monitored daily. The study indicates that incorporation of soybean straw had no negative effects either on dry matter intake or on the milk production of cross bred cows and thus it may be concluded that the soybean straw may be replaced by wheat straw up to 75% in the diet of cross bred cows for short duration without any adverse effect on animal's intake as well as on lactation performance.

Key words: Soybean straw, crossbred cows, Dry matter intake, Milk production

Short running title: Feeding of soybean straw in crossbred cows

Introduction

Soybean state (MP) had a huge production potential of the soybean by products including the straw and if not utilized properly it may be disposed off either in field or even burnt and leads to environment pollution, but if it may be utilized by the ruminant population, which are capable to thrive well of fibrous crop residues and India is also deficit in supply of the demand of the feeds and fodders for different ruminant livestock. Few reports are available regarding the utilization of soybean straw by sheep and goats (Singh et. al., 2005) and buffaloes (Kumar and Garg, 1995), but scanty reports are available regarding use of soybean straw in the diet of crossbred cows. In addition to that soybean is a leguminous crop & its straw is superior in Nitrogen content compared to wheat straw, in this respect also wheat straw is being replaced with soybean straw to find out its effect on milk production. On the basis of these facts an effort was made to find out the utility of soybean straw in the diet of crossbred cows and also to find out its effect on dry matter intake and milk production.

Materials and Methods

Experiment was conducted on twelve crossbred lactating cows in late stage of lactation (150 ± 10 days in lactation). Cows were provided with *ad-lib* fresh water available twice a day and maintained in a concrete well ventilated shed with individual feeding facility. The cows were divided into three equal groups as per completely randomized design, on the basis of their present lactation performance. Cows in control group was fed required amount of concentrate mixture as per their body weight and production performance (NRC, 2001) and *ad-libitum* wheat straw, while in another two groups the same diet was used except that the wheat straw was replaced by soybean straw at the level of 50 and 75%, respectively in group T2 and T3.

The representative samples of feed offered was subjected to dry matter determination to find out daily dry matter intake of the cows. Milk production from individual animal was recorded daily during both milking i.e. morning at 7 a.m. and evening at 5.30 p.m. The study was continued for a period of three months and the data of daily dry matter intake and milk production were

analyzed according to the standard procedure of Snedecor and Cochran (1994).

Results & Discussion

The data regarding the average dry matter intake and milk production in different groups is presented in table. It represents that the dry matter intake was not affected due to either 50% or 75% incorporation of soybean straw in the diet of crossbred cows, which represents that use of soybean straw did not have any negative effect on dry matter intake. Similar to the present findings no negative effect on dry matter intake was observed by feeding of soybean straw in the diet of sheep and goat (Singh et al., 2005) and buffaloes (Kumar and Garg, 1995). The data regarding milk production (table) suggests that the effect on milk production was numerically slightly higher in groups fed soybean straw, but statistically it was comparable ($P>0.05$) among the groups. Similar to the present findings no effect on animals performance was observed by

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feeding of soybean straw in the diet of sheep and goat (Singh et al., 2005) and buffaloes (Kumar and Garg, 1995). On the basis of the present findings it may be concluded that soybean straw may easily be replace the wheat straw up to the level of 75% in the diet of lactating crossbred cows without affecting their dry matter intake and milk production for short duration.

Reference

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Table 1-Dry matter intake (DMI) and milk production of crossbred cows

| Attributes | Control | T1 | T2 |
|---|---------|------|------|
| Average DMI (per head/day) | 8.32 | 8.27 | 8.12 |
| Average milk production (lits/head/day) | 6.08 | 6.25 | 6.31 |