RESEARCH JOURNAL OF ANIMAL HUSBANDRY AND DAIRY SCIENCE (Apr. & Oct., 2011); 2 (1&2) : 74-76

RESEARCH PAPER

Received : Jun., 2011; *Accepted :* Sep., 2011

Effect of urea treated paddy straw along with mineral mixture on milk yield and economics of HF cow

JEETENDRA RAVAL AND N.M CHAUHAN

ABSTRACT

Mineral mixture feeding along with urea treated paddy straw can decipher nutrition related tribulations and could be very beneficial to cattle for enhanced production and facsimile ability. Hence, the technology of feeding animal with mineral mixture along with urea treated fodder needs to be demonstrated to the rural farmers of Tapi district. The farming situation of low milk production in H.F. Cow was identified by Participatory Rural Appraisal method (PRA), in tribal dominated Tapi District of Gujarat State. Three treatments were tested in two blocks including 45 H.F. Cows within three years, *i.e.* 2009- 2011. Among all the three treatments, Treatment -3 (T_3) was found beneficial in terms of milk production (kg/day), milk production per unit, net return (profit) in Rs. / HF cow and also got higher Benefit Cost Ratio (BCR). The feeding method of urea treated paddy straw along with mineral mixture has to be implemented in a large scale for better growth and production of livestock.

KEY WORDS : Urea treatment, Mineral mixture, Paddy straw

Raval, Jeetendra and Chauhan, N.M.(2011). Effect of urea treated paddy straw along with mineral mixture on milk yield and economics of HF cow, *Res. J. Animal Hus. & Dairy Sci.,* **2** (1&2) : 74-76.

INTRODUCTION

Dairy industry in our country is closely interwoven with agriculture and plays an important role in rural economy, mostly in terms of milk, milk products and draft power. Gujarat is a leading state in Cooperative milk marketing. Minerals are very essential for vital body functions, milk yield and other productive concert of cattle/ H.F. cattle. Mineral mixture can help in improvement of mineral status (calcium, magnesium and other micro minerals) of high yielder H.F. cow, but the efficient productive and reproductive animal requires minerals as well as protein. Paddy straw is the major fodder source for livestock in Tapi district, but it is a poor source of protein and it is also having lower digestibility. Urea treatment to fodder is recommended/suggested technology for improvement of poor protein status of paddy straw (Reijntjes *et al.,* 1992). Urea treatment is an economical and less expensive treatment which makes paddy straw more nutritious and digestible at reduced cost. Feeding mineral mixture along with urea treated paddy straw can improve both mineral and protein contents of the ration at lower cost and can also resulted in increasing milk yield (Bhoyar *et al.,* 2010). To demonstrate the consequence of urea treated paddy straw along with mineral mixture in tribal dominated Tapi district, the said OFT was conducted for continuous three years.

Correspondence to:
NIKULSINH M. CHAUHAN, Krishi Vigyan Kandra, (N.A.U.), VYARA, TAPI (GUJARAT) INDIA
Email : nikulsinh_m@yahoo.in

Authors' affiliations:
JEETENDRA RAVAL, Krishi Vigyan Kandra, R.R.R.S. Navsari Agricultural University, Vyara, TAPI (GUJARAT) INDIA

MATERIALS AND METHODS

The on farm trial was arranged in rural farmers of three villages in Tapi district who were contacted door to door. The farming situation of low milk production in H.F cow was identified by Participatory Rural Appraisal (PRA) method. The associated problems with the farming situation identified for low milk production were as follows.

– Low milk production
– Lack of knowledge about urea treatment.
– Poor livestock management.
– Poor knowledge of health and hygiene.
– Lack of knowledge about feeding management.

From five villages, total 15 numbers of rural farmers each having H.F cow were selected for the on farm trial.

Table 1: Methodology of the on farm trial

Treatments		No. of animals	Duration	Procedure
T_1	Only paddy straw feeding without urea treatment	5	40 Days	6-8 kg/day paddy straw feeding
T_2	Urea treatment to fodders	5	40 Days	6-8 kg /day urea treated paddy straw feeding
T_3	Urea treatment to fodders + Mineral mixture	5	40 Days	6-8 kg /day urea treated paddy straw feeding + 35 g mineral mixture/ day feeding

Table 2: Results of the on farm trial

Parameters	Treatment	Average milk production (kg/day)	Results of assessment	Feedback from the farmer
Milk production	T_1	5.9	Paddy straw with urea treatment + Mineral mixture (35 gm mineral mixture feeding daily)	Increased milk production after urea treated paddy straw and mineral mixture feeding
	T_2	6.7		
	T_3	7.2		

Table 3 : Economics of on farm trial

Technology assessed	Average production per unit (Lit)	Average net return (profit) in Rs./ HF cow	IBC BCR
T_1 - Farmers practice (paddy straw without urea treatment)	5.9	15	1:1.16
T_2 - Paddy straw with urea treatment	6.7	29.2	1:1.30
T_3- Paddy straw with urea treatment + Mineral mixture (35 g daily)	7.2	32.6	1:1.34

(5 from each village) Animals were identified and selected for performing on farm trails. These 15 H.F. cows were allotted for following treatments for continuous 40 days for last three years.

– Treatment 1(T_1): 5 H.F cows were fed only paddy straw (6-8 kg) without urea treatment
– Treatment 2(T_2): 5 H.F cow were fed urea treated paddy straw (6-8 kg daily)
–Treatment 3(T_3): 5 H.F cow were fed urea treated paddy straw (6-8 kg daily)+ Mineral mixture (35g daily)

The same OFTs were taken for three years. The pooled data regarding milk yield, net returns and cost benefit ratio have been presented in different Tables.

RESULTS AND DISCUSSION

The major parameters evaluated were as follows:

– Milk production (kg/day)
– Milk production per unit
– Net return (profit) in Rs. / HF cow
– Benefit cost ratio (BCR)

It is avident from Table 2 that the milk production per unit (lit/day) was found 5.9 lit in the case of T_1, 6.7 lit .in case of T_2 and the same 7.2 liters was observed in case of T_3.The average milk yield was increased by 7.5 per cent and 22.00 per cent over treatment T_2 and T_3, respectively.

The value of net return (profit) in Rs. / HF cow was recorded for all the three treatments. The value for T_1 was 15 Rs. and for T_2 was 29.2 Rs while the same for T_3 was 32.6 Rs. The net return per HF cow per day was increased by 117 per cent with urea treated paddy straw and 95 per cent with mineral mixture as compared with only simple paddy straw feeding.

As benefit cost ratio (BCR) is the very critical parameter for economics of the trial. It was also evaluated and given in Table 3. The BCR obtained for treatment, T_1 was 1: 1.16, for T_2 was 1:1.30 and the same for T_3 was observed to be 1:1.34. Bhoyar *et al,* (2010) had also reported the similar trends. The results are also in agreement with the opinion mentioned in animal husbandry literature for the benefit of urea treatment and mineral mixture in livestock feeding Handbook of Animal Husbandry (Anonymous,1997).

Farmers feed back was also recorded for the assistance or downside of each treatment. Urea treated paddy straw increased milk production of cows. Farmers treasured the feeding method as per T_3 and were ready to espouse in large scale. Gopala *et al.* (2010) also reported the same impact on rural poor.

Conclusion:

Among all the three treatments, T_3 was found beneficial in terms of milk production (kg/day), milk production per unit, net return (profit) in Rs. / HF cow and benefit cost ratio (BCR). The feeding method of urea treated paddy straw along with mineral mixture has to be implemented in a large scale for better growth and production of livestock.

Implication:

These OFTs were eye opener for tribal dairy entrepreneurs.The mineral mixture and urea treatment to paddy straw is becoming popular in the region by seeing is believing. It would be a great significance in tribal dominated areas for economic upliftment through higher milk production and also to raise their standard of living. This OFT can pave the way of sustainable dairy business in the region and also in surrounding areas.

LITERATURE CITED

Anonymous (1997). *Handbook of Animal Husbandry* Chapter: Animal Nutrition, p. 297.

Bhoyar, C.V. Shende, N.A. and Salunke, M.S. (2010). Mineral status of normal and subclinical mastitic milk of cross-bred cow.*Res. J. Ani. Hus. & Dairy Sci.*,**1**(2): 69-72.

Gopal,G.T., Veerana,K.C., Shivakumar,K. Radder and Shivan, S. Kumar (2010). Impact of goat rearing among livestock interest groups on empowerment of poor rural people. *Vet. Sci. Res. J.* **1**(2): 89-92.

Reinjtjes, C., Haverkort, B. and Bayer, A. W. (1992). Farming for future: an introduction to low external input and sustainable agriculture; ILEIA, Leusdan, Netherlands, pp. 52, 210-218.