

Milk Yield Response of Bypass Protein on Smallholder Dairy Animals

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Abstract: Protein need for small holder dairy animals is very limited. Considering this problem one on-station and one on-farm trials were conducted in 2013 and 2014 in Nepal respectively. In on-station trial (2013) 15 milking buffaloes were randomly assigned to 5 dietary treatments (0, 0.5, 1, 1.5 and 2 kg de-oiled soybean meals/day/buffalo) and in on-farm trial (2014), 20 milking buffaloes were assigned to 0.5 kg de-oiled soybean meal/day/buffalo for two months dry period. From on-station trial, significantly higher (42 %) milk production was observed from 0.5 kg and 1 kg de-oiled soybean meal/day/buffalo feeding groups. From the on-farm trials in village dairy buffaloes 20 percent milk production increment was observed compared with the normal farmer's feeding practices (de-oiled soybean meals unfed condition). It was concluded that, in addition to normal diet, 0.5 to 1 kg de-oiled soybean meal (depending up on the body weight of animal and feeding situation) per day feeding as bypass protein sources could be beneficial during dry period where green fodder is scarce to maintain milk production from dairy animals.

Keywords: Bypass protein, milk yield, buffaloes, Small holder.

INTRODUCTION

Feed is the main component to improve animal production. At present about 36 percent feed deficit in the country and whatever available are low in quality, less digestible due to higher fiber content like rice, wheat and pulses straws, sugarcane etc [1]. These feed resources are deficient in one or other nutrients (energy and protein) which results low absorption of nutrients [2], wastage for transportation time and storage problems. Now a day's people trying to adopt high yielding dairy animals, especially near to urban and market assessable areas Chitwan, Pokhara, eastern Terai and road side areas. Limited feeding resources for added stock and whatever available are not in good quality. In high yielding dairy animals, the capacity of rumen do not proportionately meet the nutrient requirement of her milk production level to hold roughages and concentrate in the rumen, and good quality protein (true protein) degrade in rumen by microbes (bacteria and protozoa), after come to in small intestine the amount she intake will ultimately reduce by degradation in rumen [3]), therefore the efficiency of good quality protein will decreases.

For better utilization of good quality protein sources, there should be alteration of protein where rumen bacteria and protozoa may not attack on protein sources and make available in small intestine in other word the amount of ammonia produced in the rumen

from various protein sources is inversely correlated with the N₂ retention. Therefore, high milk yielding dairy animal need good quality feeding resources [4] which are not likely to degrade in the rumen and directly go to abomasums [5] and absorb in small intestine (bypass). In these two (on-station and on-farm) trails objectives were how much soybean meals to supply in day to lactating dairy animals and effects on small holder dairy animals on milk yield were carried out.

MATERIALS AND METHODS

On Station Trial

Fifteen dairy buffaloes were randomly assigned to 5 dietary treatments (de-oiled soybean meals 0, 0.5, 1, 1.5, and 2 kg per day per animals) in National Buffalo Research Station (NBRP) Tarahara Sunsari Nepal in December to January 2012 in on-station trial and

On Farm Trial

A 0.5 kg de-oiled soybean meals per animals was fed to 20 lactating buffaloes in farmer's field Dhading and Gorkha hill districts of Nepal during dry summer (April to May 2014) in addition to normal farmer's practices. Data were collected on daily milk yield and farmer's response and analyzed in Minitab statistical program in personal computer.

RESULT AND DISCUSSION

From on-station trial, significantly higher (33.8 and 42 %) milk production was observed from 0.5 kg and 1 kg de-oiled soybean meal/day/buffalo/ feeding groups.

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Table 1: Milk Yield Response of De-Oiled Soybean Meals in Lactating Buffaloes

S/N	Treatments	Milk yield (kg/day)		Milk yield increment (%)
		Before de-oiled soybean meals feeding	After de-oiled soybean meal feeding	
On Station (Tarahara) trial				
1	0 kg de-oiled soybean meal	2.55	2.72	6.73
2	0.5 kg de-oiled soybean meal	2.13	2.61	22.89
3	1 kg de-oiled soybean meal	2.42	3.45	42.40
4	1.5 kg de-oiled soybean meal	3.09	4.14	33.88
5	2 kg de-oiled soybean meal	2.46	3.18	29.21
Mean		2.53	3.22	27.02
T- value		-5.84		
P-value		0.01		
On-farm trial	0.5 kg de-oiled soybean meal	3.07	3.63	20.84

From the on-farm trials in village dairy buffaloes, 20 percent milk production increment was observed (Table 1) compared with the normal farmer's feeding practices (de-oiled soybean meals unfed condition).

CONCLUSION

In addition to normal diet, 0.5 to 1 kg de-oiled soybean meal (depending up on body weight and milk production level) per day feeding as bypass protein sources could be beneficial during dry period where green fodder is scarce to maintain milk production from dairy animals.

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