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Status of Azolla Feeding and Its Benefit for Livestocks in Sitapur District (Uttar Pradesh)

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ABSTRACT

Livestock performance mainly depends on adequate availability of quality feeds and fodder. Presently, Azolla as supplement fodder feeding is being considered essential for lactating and growing animals. Azolla is nothing but floating fern in shallow water, which is very rich in protein, essential amino acids, vitamins (A, B12 Beta carotene). Azolla can be easily digested by the livestock Owing to its high protein and low lignin content, green Azolla can be used as feed supplement for the milch cattle (1kg per day) which could increase the milk production by 9.8 to 13% more than without azolla diet group. The Azolla demonstration in the program area could bring changes in feeding management. The results indicated that the cow owner will be getting an additional income by azolla feeding.

KEYWORD

Concentrate; crude protein; feed conversion ratio; Azolla , Livestock

INTRODUCTION

The demand for milk and meat in India is creating new potential in the profitability of animal husbandry as an occupation. Yet, at the same time, there is a substantial decline in fodder availability. The area under forest and grasslands is decreasing as is the amount of various crop residues available for feed, largely due to the introduction of high yielding dwarf varieties. A huge livestock population of India over 350 million besides poultry, yet the production of milk and other livestock products are the lowest in the world. One of the main reasons for the low productivity of our livestock is malnutrition, under nutrition or both, besides the low genetic potential of the animals. To attain the goal of improving productivity of livestock; a major step would be the streamlining of Azolla cultivation in the area under livestock. Azolla is wonderful plant, which holds the promise of providing a sustainable feed for livestock. Azolla is a floating fern and belongs to the family of Azollaceae. Azolla hosts symbiotic blue green algae, *Anabaena azollae*, which is responsible for the fixation and assimilation of atmospheric nitrogen. Azolla, in turn, provides the carbon source and favourable environment for the growth and development of the algae. It is this unique symbiotic relationship that makes azolla, a wonderful plant with high protein content.

Nearly 85 per cent populations of Siatpur district live in rural area and depend on agriculture. Sitapur is located at 27.57°N 80.68°E. It test has an average elevation of 138 meters (452 feet). It is located in the Gangetic Plain, with elevations ranging from 150 m above sea level in the north-west to 100 m in the south-east. About 38 per cent of the total families are below poverty line. All these categories of farmers rear small animals as well as large animals. In such a Sceneario, it is essential to adopt such sustainable and profitable technique for rural people of the State. In Sitapur, the cropping dominates with Sugarcane and Rice which is grown all over the District. Soil is good to take other crops like Wheat, Pulses, Oil seed, Mango Orchard and some vegetables. But their poor development in livestock of Sitapur district as milking and meat animals get inadequate nutritious fodder throughout the year. As per the field demonstration in Sitapur, Azolla cultivation is found to be effective for dairy animals, Goats, Ducks, pigs and poultry birds as it is palatable, easy to digest, has low lignin content and is rich in protein. Azolla can change the face of Sitapur livestock if it becomes popular among the farmers through extension. Azolla farmers found to be profitable feed for livestock farmers in as it's cultivation is cheap, is easy to produce and is having better nutrients per unit for animals over concentrate. Azolla can be used as a plant protein source and pro-vitamins for poultry nutrition (Lejeunea *et al*., 1999). It is also a potential source of nitrogen and is a potential feed ingredient for livestock (Lumpkin, 1984).

MATERIALS AND METHODS

Under the National Initiative on Fodder Technology Demonstration which is sponsored by the Indian Fodder and Grassland Research Institute, Jhansi, cultivation of Azolla by individual livestock keeper was promoted. This study data was collected from 3 Blocks of Sitapur District (UP). Cultivation and feeding of Azolla was taken up by all categories of farmers irrespective of them having animals of different breed and stage of their growth. After 3 years, a sample survey was taken up, to study its efficacy at farmer's level. The study revealed that Azolla cultivation was accepted by the farmers to a modest extent. Azolla is used as protein rich green. It is mixed with the concentrate and fed to animals. Under the study,

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data were collected at random from 156 farmers practicing Azolla feeding. The sample data on feeding Azolla to 268 milking animals of 91 CB & 177 ND cow is studied for its contribution to milk production.

RESULTS AND DISCUSSION

The Cross -bred milch animals were fed with Azolla on an average of 1030 gm. per milch animal per day &Non-Descript milch animals with 867 gm. per day. The corresponding rise in milk production was 0.556 & 0.326 Lt. per day per milch animal for CB & ND respectively. The per day per milch animal % of production increase in milk was 9.8 in case of CB animals & 13.08 in ND animals Green fodder is not available in summer season due to lack of irrigation. It is observed that azolla feeding practice has a good result at the level of small farmer; they get an opportunity to feed azolla round the year. Besides this, it is less costly to get protein rich food for their animals easily. Animal owners who used to spend more money to feed their animals by purchasing commercial cattle feeds; for them, azolla cultivation worked as a cost saving approach. Not only azolla increased milk production but also improved animal's health condition.

CONCLUSION

Azolla feeding has been adapted by all category of farmers irrespective of breed & level of milk production. Maximum of the farmers are able to improvement milk production from 0.3 to 0.5 Lt of milk. It is also observed that 900 to 1100 gm Azolla is fed over and above the conventional existing feeding per animal per day. The initial cost of establishing an Azolla pit of 100 sq ft to produce .8 to 1.25 Kg azolla per day is around Rs. 700/-, whereas the milch animal provided with Azolla will give 86.4 Lts. of additional milk in the lactation period. With this, the cow owner will be getting an additional income of Rs 2592/.

Table 1:

Studied Block	Crossbred Milk Cow				Non-Descriptive Cow			
	No. of Animals	Azolla fed per animals (Kg)	Increase of milk in Lt per day	% of increase Milk Production	No. of Animals	Azolla fed per animals (Kg)	Increase of milk in Lt per day	% of increase Milk Production
Biswan	45	1.25	0.65	10.83	58	0.9	0.375	12.5
Laharpur	25	0.9	0.55	9.16	44	0.9	0.35	14.0
Maholi	21	1.0	0.47	9.4	75	0.8	0.255	12.75

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