



RESEARCH ARTICLE

AZOLLA FEEDING STATUS AND IT'S BENEFIT FOR LIVESTOCK IN ODISHA

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ABSTRACT

Improved & Crossbred livestock milk production depends mainly on adequate availability of nutrients. It comprises the major protein supply for milk production. The demand of milk is increasing for nutrition of population in country. Presently, Azolla fodder feeding is being considered essential for lactating 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 animals (880 gm per day) which could increase the milk production by 6.43%. The Azolla demonstration in the program area could bring changes in feeding management.

INTRODUCTION

Though India has a huge livestock population of over 350 millions 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 achieve the goal of improving productivity of livestock; a major step would be the streamlining of Azolla cultivation in the area under livestock. Nearly 85 per cent population of Orissa live in rural area and depend on agriculture. Orissa lies in subtropical belt in eastern region of India with a geographical area of 15.57 million Hectare, out of which 44.70 per cent comes under scheduled areas and is declared as tribal sub plan (TSP) area. Almost 38 per cent of the total population of the state is scheduled cast (SC) and scheduled tribe (ST). About 47 per cent of the total families are below poverty line and it ranks 2nd amongst poor state of the country. All these Categories of farmers rear Small animals as well as large animals. In such a Scenario, it is essential to adopt such sustainable and profitable technique for rural people of the State. In Orissa, the cropping dominates with Rice which is grown all over the state as the main staple food. Soil is not quite good to take other crops besides rice and some vegetables. There is also poor development in livestock of Orissa as milking animals get inadequate nutritious fodder throughout the year. As per the field demonstration in Orissa, 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 Orissa livestock if it becomes popular among the farmers through extension.

Azollais found to be profitable feed for livestock farmers in Orissa 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 provitamins 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 Integrated Livestock Programme sponsored by the Odisha Govt, cultivation of Azolla by individual livestock keeper was promoted. This study data was collected from 2 districts of Odisha. Cultivation and feeding of Azolla was taken up by all category of farmers irrespective of them having animals of different breed and stage of their growth. After 5 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. Azollais used as protein rich green. It is mixed with the concentrate and fed to animals. Under the study, data were collected at random from 145 farmers practicing Azolla feeding. The sample data on feeding Azolla to 236 milk animals of 212 CBJ & 24 ND cow is studied for its contribution to milk production.

RESULTS AND DISCUSSION

The Cross Breed milch animals were fed with Azolla on an average of 793 gm. per milch animal per day & Non Descript milch animals with 965 gm. per day. The corresponding rise in milk production was 0.316 & 0.449 Lt. per day per milch animal for CB & ND respectively. The per day per milch animal % of production increase in milk was 5.78 in case of CB animals & 7.09 in ND animals

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Table 1.

Studied District	Cross breed Milch Cow				Non descriptive Milch Cow			
	No of animals	Azolla fed per animal in Kg	Increase of milk in Lt per day	% of increase in Milk	No of animal	Azolla fed per animal in Kg	Increase of milk in Lt per day	% of increase in Milk
Anugul	31	0.977	0.237	5.47	5	1.340	0.500	6.94
Sambalpur	181	0.609	0.394	6.09	19	0.590	0.399	7.23
G T	212	0.793	0.316	5.78	24	0.965	0.449	7.09

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 ready-made 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 accepted by all category of farmers irrespective of breed & level of milk production. Most of the farmers are able to gain milk production from .2 to .3 Lt of milk. It is also observed that 700 to 900 gmAzolla is fed over and above the existing feeding per animal per day. The initial cost of establishing an Azzola pit of 40 sq ft to produce .8 to 1 Kg azolla per day is around Rs. 500/-, whereas the milch animal provided with Azolla will give 60 Lts. of additional milk in the lactation period. With this, the cow owner will be getting an additional income of Rs 1500/.

REFERENCES

- Ambade, R.B., Jadhav, S.N. and Phalka, N.B. 2010. Impact of Azolla as a protein supplement & its influence on food utilization in livestock. *Livestock line*. 4(4): 21-23.
- Chatterjee, A., Sharma, P., Ghos, M.K., Mondal, M. and Roy, P.K. 2013. Utilization of Azolla *Microphylla* as feed supplement for cross bred cow. 4:207-214.
- International Rice Commission news, 33: 30-3.
- Kamalasanen, P. et. al. 2004. Azolla- A suitable feed substitute for livestock, Spice India.
- Khan, M.M. 1983. A Prima on Azolla production and utilization in Agriculture.
- Kumar, K.R. 2008. A study on Azolla as an oil seed meal replacer in dairy animal ration. *The Asian Journal of Animal science*. 3(1):96-97.
- Lejeunea, A, Cagauan, A and Vanhove, C. 1999. Azolla research and development recent trends and properties. *Symbiosis*, 27: 333-351.
- Lumpkin, T.A. 1984. Assessing the potential for Azolla use in the humid tropics.
- UPLB PLARRD and SEARCA, Los Banos <http://resource.cineam.org/om/pdf/c38/03400078.pdf> accessed.
