Poultry rearing with Moringa: An Integrated Farming

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Poultry industry in our country is one of the largest and fastest growing agro-based industries. Reasonable prices of the protein from animal through eggs and meat are accepted by all communities. Poultry sector is facing problems as regards to protein and energy sources because of which production cost increases Integrated Farming helps in lowering the cost of production. Integrated farming is a whole farm management system which aims to deliver more sustainable agriculture. It refers to agricultural systems that integrate livestock and crop production. By supplementing feed bases like moringa leaves (rich source of protein and having antimicrobial and antioxidant properties), earthworms, broken rice and maggots in the traditional feed, we can reduce the cost of feed thereby reducing cost of production which may lead to the benefit of the farmers. Keeping all these problems in view, researchers engaged in poultry production are now looking for cheaply available alternative sources of protein and energy. Further, researchers are also searching for natural antimicrobial ingredients. Integrated Farming with Moringa oleifera is an option to reduce the cost of production and getting organic like poultry production.

Why Moringa?

Conventional feed resources like maize and soybean in the poultry diet is being used since long. Ironically these ingredients have reached sky rocketing price due to competition with human beings. Thus, it is essential to explore non-traditional feed resources which could be used as a feed supplement in poultry feed. One of the non-traditional feed is moringa.

Properties of Moringa oliefera and its importance in poultry feeding

Moringa oleifera is a widely growing plant in India with many uses. It has great economic importance. In many tropical and subtropical countries, leaves of Moringa tree are the preferred part for use in animal diets as leaf meal.

- Moringa leaves have antimicrobial and antioxidant properties.
- Moringa leaves have coccidiostatic and anthelminthic properties also.
- Dried moringa leaves powder have protein which can be used as protein source in poultry diets to reduce the cost of the feed.

Development of Moringa Farm

Directorate of Poultry Research has developed a Moringa farm where trees were grown in an area of 19,450 sft. to feed the birds on Moringa leaves under the direction of Hon'ble minister Shri Giriraj Singhji. The land was ploughed and two tractor trolleys of backyard manure were applied to the field. Ridge cutting was done with a space of 1.3 ft. between two ridges. Sowing of high density ODC-3 Moringa seeds was done.

1. Management of birds

Night shelter:

3000 sq. ft. area is required for the construction of night shelter at the rate of 2 sq. ft. for each bird (from 6-72 weeks of age) made of MS iron mesh, angle iron covered with fibre asbestos roofing. Back height of the shelter should be 6 ft. and front height should be 4 ft. with a door of 3 ft. by 4 ft.

Rearing of birds:

Gramapriya birds were taken for the purpose and were kept in night shelter having an area of 1245 sft. which was constructed within the area where moringa plantation was done.

Feed:

Two types of feed such as up to 7 - 20 weeks of age, standard layer grower mash is to be given @ 7Kg/bird (14 wks. period) and 21 – 72 wks. of age standard layer commercial feed is to be fed @ 50 gm/female/day (night feeding) along with scavenging (in day time) in the entire acre of moringa field.

The birds were raised on dried moringa leaves powder and other supplementary diets like earthworms, kitchen wastes and maggots. The dried Moringa leaf powder was fed at the rate of 2 gm/day/ female.

Table: Feed formulation with traditional and unconventional feed ingredients

Standard layer commercial feed (corn-soya)	65g/female/day
Dried Moringa leaf powder	2g/female/day
Live earthworms	6g/female/day
Free scavenging in moringa farm	8hrs./female/day

2. Free range Management

After attaining 6 weeks of age, the birds gained 600 – 700 g body weight which can be let out under free ranging conditions in the moringa farm where the birds will feed on fallen moringa leaves as well as directly from the moringa trees including some insects from the open environment. The birds can be let out for foraging during day time while at night time the birds can be kept in the night shelter at the rate 1.8 to 2.0 sft. of space per female.

Clean potable water should be provided for drinking for the birds for entire day. After attaining the 16-18 weeks of age the males can be sold out however; females can be retained under free-range condition till production period is completed.

Economic advantage of rearing birds in Moringa farm

Income:

i) Number of eggs produced – 8740 nos.

Income generated @ Rs 7/- for each egg = Rs. 61,180/-

ii) Income through sale of drumsticks = Rs. 1500/-

iii) Income generated through sale of spent hens @ Rs. 70/- per Kg live weight (average weight 2.4 Kg/hen) = Rs. 168 x 128 hens = Rs. 21,504

Total Income generated = Rs. 84,184/-

Expenditure:

i) Cost of feed @ Rs. 21/Kg x 1686 Kg = Rs. 35,406/=.

ii) Depreciation in terms of capital cost = Rs. 3000/-

iii) Cost of Moringa seeds = Rs. 3193/-

Total expenditure = Rs. 41,599/-

Profit:

For 135 female birds, the amount of profit is Rs. 42,585/- which is Rs. 315/- per bird.

Assumptions:

Labour engagement through redeployment within the institute

Conclusion

Rearing of poultry with moringa has got economic advantage to the farmers. The rearing is more beneficial if along with Moringa and other feed bases like earthworms, kitchen wastes and maggots are provided to the birds.