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Status of backyard and small scale poultry production to sustainable livelihood- a case study

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ABSTRACT

Backyard chicken production is a subsistence activity, providing eggs and meat for family consumption and, to some extent, cash income. The survey work was taken up in selected villages of 33 Gram panchayets in three blocks of 24 Parganas (South). The study reveals that the birds are seldom kept for production beyond a period of two years. Households consume about 55.60±3.10 %, sell 28.50±0.60 % eggs laid and remaining 15.90±2.88% eggs are used for hatching purpose. Average hatchability was 72.22% in the present study. The annual average of eggs used for hatching by a household was 48.17±6.90. The mortality rate during outbreak is often more in case of adult fowl (13.07±2.77 %) as compared to chicks (12.86±1.65%). The average annual frequency of egg setting was 3.08±1.42. 36.13±6.47% farmer prefer winter season for setting of eggs.

Key words: backyard poultry, deworm, hatchability, mortality.

Poultry industry is one of the shining industries of West Bengal. Backyard chicken production is a subsistence activity, providing eggs and meat for family consumption and, to some extent, cash income. Though the level of monthly income from backyard poultry is low but for many women it is the only income source. Even for women with other income sources, the income from their backyard poultry farming contributes significantly to their total income. Food and Agricultural Organization (1998) in Special Programme for Food Security (SPFS) viewed the poultry as a crucial element in the struggle for sustained food production and poverty alleviation. Income from family poultry has a positive impact on the livelihood of family poultry owners Shakir *et al.* (1999) reported productivities of 2976 eggs per household and 129 eggs per bird on an annual basis under backyard conditions in Chitral. In Charsadda a smaller number of eggs per household (1582) was observed by Farooq *et al.* (2001). About 84% eggs are produced in backyard farming system within the state, where Deshi hens contribute 50%. Only 16% (4532.66 lakh) eggs are produced from 19.99 lakh number of improved layer population (Anonymous, 2005).There are various advantages which make poultry attractive in the context of poverty alleviation and quality protein supply in West Bengal as well as India. It is efficient in transforming feed protein and energy into human food and it uses a very low capital investment and space for small-scale poultry production which allows poultry production to be practiced even by landless families or other rural poor. The present study aims evaluation of sustainable and integrated backyard poultry farming system for the economic upliftment of the poor and unskilled rural community in some underprivileged districts of West Bengal and implementation and linking of identified and proven technologies by optimum utilization of local resources to establish sustainable backyard poultry production system.

MATERIALS AND METHODS

There are 33 Gram Panchayets (GP) at 3 blocks namely Mogrrahat –I, Mogrrahat –II and Diamondharbour-I of South 24 Parganas district were selected randomly for survey work during 2008-09. The blocks as well as Gram Panchayets were selected at random. The variables as perceived by the rural poultry owners were recorded in the schedule prepared for the purpose of the study. Purposive sampling techniques were used since survey work was done to those Self Helps groups (SHG) who are engaged with backyard poultry production. The survey work were done to all the householders, whose subsidiary occupation is backyard poultry production in a selected village of each GP of the specified blocks, where Mograhat – I block have 11GPs, Mograhat – II block have 14 GPs and Diamondharbour – I block have 8 GPs. Variables studied with respect to rural poultry farmers are

1. Egg production and consumption status of a household.
2. Management practices and health coverage.
3. Hatching performance.

RESULTS AND DISCUSSION

Farmers opined that local hens start laying at an age varying from 160 to 180 days.. Hens lay an average of 17 eggs per month with an annual production varying from less than 180 to 212 per year. Average weights of eggs are 51.15 grams. It could be noted that the birds are seldom kept for production beyond a period of two years. Households consume about 55.60±3.10 % of the eggs laid. They sell 28.50±0.60 % eggs laid and remaining 15.90±2.88% eggs are used for hatching purpose. Though the

income generated through the sales of these eggs is not too significant, the improvement in the nutritional status of the households need to be considered. The findings of this study is in agreement with the findings of Mandal (2006), who reveals that majority of the poultry owners (85%) did not sell the eggs and used them for domestic consumption, whereas, only 15 per cent respondents sold the surplus eggs. Those birds which do not produce any egg are sold for meat at around 8 months of age when they attained around 2 kg body weight. All the poultry owners reported that, the price of eggs and birds varied according to season and religious festivals like Easter, Eid etc.

Table 1: Egg production and consumption status.

SL. No	Parameters		South 24 Parganas DH	Mograhat-1	Mograhat-2	Mean ± SE	Range
1	Gap between two laying (days)		10.73	11.21	13.81	11.92±0.95	10.73-13.81
2	Days continuously get egg		16.08	13.88	14.71	14.89±0.64	13.88-16.08
3	Upto which age it produce egg (month)		20.97	26.19	22.42	23.19±1.56	20.97-26.19
4	Eggs month^{-1} get bird^{-1}		17.66	17.55	15	16.74±0.87	15.00-17.66
5	Use of eggs (%)	Eat	61.24	50.55	55.02	55.60±3.10	50.55-61.24
		Sale	27.56	28.32	29.61	28.50±0.60	27.56-29.61
		Hatch	11.2	21.13	15.37	15.90±2.88	11.20-21.13
6	Average wt. of eggs (g)		47.72	51.66	54.06	51.15±1.85	47.72-54.06
7	Preserve egg (mean days)		6.92	No	No	-	-
8	Mortality rate during outbreak (Mean) %	Chicks	10.04	15.75	12.79	12.86±1.65	10.04-15.75
		Adult fowl	8.98	18.35	11.87	13.07±2.77	8.98-18.35

Table 2: Management practices and health coverage

SL. No	Parameters	South 24 Parganas DH	Mograhat-1	Mograhat-2	Mean ± SE	Range
1	Getting sufficient medicine or vaccine (agree %)	34.3	15.3	24.8	24.80±5.48	15.30-34.30
2	Agree to pay money for vaccine	23.8	59.7	51.7	45.07±10.88	23.80-59.70
3	Provide extra feed to birds	25.4	34.6	6.7	22.23±8.21	6.70-34.60
4	Provide insects/other feed	4.5	29	10.2	14.57±7.40	4.50-29.00
5	Poultry training	No	0.7	11	3.90±3.56	0.00-11.00
6	Visited any poultry farm	No	4.8	7.4	4.07±2.17	0.00-7.40
7	Deworm (agree %)	33.8	25	31.4	30.07±2.63	25.00-33.80

Main constraints to rearing chicks being the lack of feed, disease outbreaks, predators and poor management, if proper attention is directed towards these, their mortality rates can be brought down considerably. The mortality rate during outbreak is often more in case of adult fowl (13.07±2.77 %) as compared to chicks (12.86±1.65%).

The fact that most farmers (24.80±5.48%) only vaccinated their flocks at the time of disease onset would also indicate a lack of knowledge of when to vaccinate. The reason for not vaccinating could also be partly because of unavailability of the vaccine although 45.07±10.88% farmers are agree to pay money for vaccine if it is available at door step. Although very few of the holders declared during the survey that they usually vaccinated against *Newcastle* disease, during this first half of the follow up no vaccination was noticed. Facilities for breeding birds are very limited, only few of farmers used to house birds and these are used only to protect them at night. In most of the households, a small hen house made with local material was observed. In all the other cases the chicken were housed on the veranda, under mortar or in the kitchen. Few farmers have built pakka poultry houses but are mostly with inadequate spacing. None of the households were following intensive system of management. All the respondents were using semi-intensive system of housing; scavenging was the major feeding system. Chicks fed on insects, worms, grains, food wastes and by products, mainly cereal bran that fall on the ground when women pound cereals. Very less farmer provides extra feed to chicks

(22.23±8.21 %). The tendency to visit any poultry farm (4.07±2.17%) and attending poultry training (3.90±3.56%) were also very low. Watering was mainly done in cans hidden in the ground or in a wooden locally-made drinker. The birds are let out from as early as 7 am in the morning, and they are permitted to roam around till 6 pm generally. Owners were not aware of the floor space requirements. In these conditions production cost was very low, almost nil.

Table 3: Hatching performance

SL. No	Parameters	South 24 Parganas DH	Mograhat-1	Mograhat-2	Mean ± SE	Range
1	Use hatching machine for hatching of eggs	1.0	1.5	1.4	1.3±0.153	1-1.5
2	Use own hen for hatching eggs	36.6	42.1	43.8	40.83±2.17	36.60-43.80
3	Follow candling	30.4	36.3	24.6	30.43±3.38	24.60-36.30
4	Batch of chicks hatch year^{-1}	1-2	4-5	2-4	-	-
5	Average hatching chicks batch^{-1}	16.17	15.45	6.28	12.63±3.18	6.28-16.17
6	Mean no. of eggs set year^{-1}	40.5	81	48	56.50±12.44	40.50-81.00
7	Average hatching chicks year$_{-1}$	32.34	69.5	18.84	40.23±15.15	18.84-69.50
8	Follow specific season for setting of eggs	35.6	47.6	25.2	36.13±6.47	25.20-47.60
9	Follow artificial brooding	28.8	18	6.7	17.83±6.38	6.70-28.80

The annual average of eggs used for hatching by a household was 48.17±6.90. Average hatchability was 72.22% in the present study. The average annual frequency of egg setting was 3.08±1.42. Around 36.13±6.47% farmers prefer winter season for setting of eggs.

The findings of the study further shows that backyard poultry farming was found to be a subsidiary occupation for all the respondents. The findings are in consonance with the findings Panda and Nanda (2000). Thus, this enterprise could prove to be an excellent source of income to support their livelihood.

In order to reduce the incidence of diseases, there is the need to educate them more on the hygienic precautions and bio-security measures to be adopted in farms. This point has a greater significance in the dawn of Avian Influenza threat in all parts of the world. The study by Mandal (2006) revealed that mortality rate in desi birds due to Ranikhet disease was highest, followed by Fowl pox, Coccidiosis, respiratory problems and other miscellaneous diseases. The study also shows that, the death rate was high in chicks followed by growers and adult birds and diseases contributed markedly to high flock mortalities recorded during rainy season (Mandal2006). Disease intensity were probably due to exposure of chickens to the natural environment, interaction of different entities, within and among flock contacts during scavenging, uncontrolled introduction of new stocks, contacts through exchange or sale of live chickens or movement between households and villages (Mapiye and Sibanda 2005). Lack of space leads to smaller stocks and this will increase the cost of production, and lesser profits. The commodity prices would go up leading to fewer purchases.

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