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## Production performance of backyard poultry reared by rural women in Budelkhand region of Uttar Pradesh

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### Abstract

Backyard poultry production serves as a small scale business for rural women to generate income within their local premises. The enterprise provides regular in hand money with use of very less resources usually available locally. As a result of its nature of easy to manage with household activities, it acts as an effective tool for empowerment of women. This study was conducted in Bundelkhand region of Uttar Pradesh considering 80 backyard poultry rearing rural women. The semi-structured interview schedule was used in present study sought to identify production performance of backyard poultry at household level. The statistical tools used for analysis of collected data were percentage, frequency, range, mean and standard deviation. Result revealed that majority (98.75%) of rural women was having small flock size (5-13 in nos.) and all of them were found to re-generate flock. Majority of rural women (75.00%) had small (8-12 in nos.) eggs set per hatch and small hatch (6-9, 65%). Overwhelming majority (86.25%) of the rural women reported 'attack of predator' as major cause of mortality. 88.75 per cent of them were rearing backyard poultry for the purpose of additional source of income. Average egg and meat production per household per year were 96.25 in nos. and 15.79 kg, respectively. Annually 75 per cent of rural women were categorized in low level of eggs production (30-90 eggs) per household whereas medium level of meat production (12-17 kg) with 65 per cent of rural women. It is concluded that backyard poultry is a good source of income but these can be maximize only by increasing productivity and decreasing mortality by focusing on care of day old to adult stage of life of the birds. There is need for the government to improve information and veterinary services related to poultry production and management (breeding, brooding, feeding, housing and health). Use of extension programmes in enriching skills of rural women to run scientific backyard poultry and use of new technologies can be much helpful to maximize productivity at farm level with consideration of effective execution and monitoring of these programmes.

**Keywords:** Backyard poultry performance, hatchling size, predators, mortality, production

### Introduction

About 72.2 per cent of the total population living in rural areas of India is predominantly occupied by poor, marginal farmers and landless laborers. Livestock sector also play crucial role for livelihood generation of rural people through its various activities. Poultry is the fastest growing segment of Indian livestock sector. It increased from 12.39 per cent from year 2007 to year 2012 with population 729.21 million (livestock population census 2012). In the year 1950-51, total eggs production in India was 1832 million, since then the eggs production continue to rise over the period and it reached appreciable number of 88139 million in year 2016-17. The per capita availability was 5 egg per annum during the period of 1950 which reach to 69 eggs per annum in year 2016-17. The contribution of desi fowl in total eggs production is 11.96 percent (BAHS 2016-17). Although domestic per capita consumption is still one of the lowest in the world, the industry has much potential to grow further. In 7.4 million estimated total meat production from livestock sector, poultry is contributing 47.32 per cent with the annual growth rate of 5.21% (Annual Report DAHDF, 2016-17). Though India has shown a tremendous growth in poultry production over the decades, rural poultry farming is still lagging behind and always found to be neglected.

Backyard poultry production is an old age profession of rural families in India. Poultry production represents an appropriate system in contribution of feeding to the fast growing human populations and to provide income to poor small farmers, especially women (Gujit, 1994; Alders, 1996; Kitalyi and Mayer, 1998) [5, 2, 6]. Chickens can provide a good source of income to the rural people, particularly the poorest families with limited resources like land and capital. Products from rural poultry farming fetches high price compared to those from intensive poultry farming.

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Backyard poultry provides egg and meat with low cholesterol concentration. It is more beneficial to small, -marginal farmers and landless laborers as generates petty cash for household requirement in addition to balanced food with minimum inputs available in the rural areas. The backyard farming can be easily run by women to uplift their family socio-economic status within rural situations. Despite of several benefits and significant of activity & advancement in technology, the production performance under free range backyard poultry system seems to be uncertain. The present study is an attempt to ascertain the production performance of backyard poultry owned by rural women in the Bundelkhand region of UP.

### Research methodology

The Bundelkhand region of Uttar Pradesh comprises of seven districts namely Jhansi, Jalaun, Lalitpur, Hamirpur, Mahoba, Banda and Chitrakut. The present study was conducted in the purposively selected Banda and Hamirpur districts. Banda and Hamirpur districts comprise eight and seven block, respectively. Out of these, two blocks from each district were selected purposively owing to having more poultry population. Further from each blocks, two villages were selected purposively as more number of backyard poultry rearing women were in these villages. Consolidated sampling frame for selected four blocks was prepared. From the each four sampling frames, 20 rural women as they were rearing five to ten backyard poultry for last two or more than two years were selected as respondents. Thus total 80 rural women were selected for the present study. The semi-structured interview schedule was used in this study sought to identify production performance of backyard poultry farming reared by rural women. Major statistical tools used for analyzing the collected data were frequency, percentage, range, mean and standard deviation.

### Result and discussion

#### Flock size

Table 1 reveals that average flock size of backyard poultry owned by rural women in Hamirpur and Banda districts were 7.17 and 7.6 birds respectively. Overall average was 7.38. The table further reveals that almost all (98.75%) poultry rearing rural women were found to rear small flock size (5-13), followed by large flock ((1.25 % , 21-29). No one had medium flock size (13-21) of birds. It indicates that rural women rear manageable flock of backyard poultry as a secondary source of income for their livelihood. Abdul *et al.* (2014) also reported similar findings which revealed that majority of respondents had small flock size.

**Table 1:** Distribution of rural women according to their flock size

Flock size	Hamirpur (n=40)	Banda(n=40)	Total(N=80)
Small (5-13)	39 (97.50)	40 (100.00)	79 (98.75)
Medium (13-21)	00 (00.00)	00 (00.00)	00 (00.00)
Large (21-29)	01 (02.50)	00 (00.00)	01 (01.25)
Mean ± Sd	7.6±1.39	7.17±1.98	7.38±1.68

(Figures in parentheses indicate percentage)

#### Re-generation of flock

Re-generation of flock includes eggs set per hatch, chicks hatched, live chicks up to one week and causes of mortality. Majority of rural women avoids to purchasing new stock and they multiply from the existing hens through natural hatching to save money.

#### Eggs set per hatch

All backyard poultry rearing rural women were found to re-generate flock. Table 2 (a) reveals that average eggs set per hatch in Hamirpur and Banda district were 12.12 and 11.95 eggs, respectively. Overall average size of eggs set per hatch was 12.03. Majority of rural women (75.00%) were found to set eggs set per hatch in small number (8-12) followed by medium (23.75%, 12-16) and large (1.25%, 16-20). The egg set per hatch in rural area depends on the availability of eggs at the time of hatching after day by day selling of egg direct to the consumers.

#### Number of chicks obtained per hatch

Table 2 (b) reveals that majority of rural women (65%) had small hatch size (6-9) followed by medium (33.75%, 9-12 chicks) and large (1.25%, 12-15 chicks). Overall average hatch size obtained was 8.71 chicks. Number of chicks obtained per hatched was less than number of egg per hatch due to low hatchability of birds and poor management quality of rural women.

#### Chicks mortality and causes of mortality

Table 2 (c) reveals that overall majority of rural women (71.25%) had medium level chicks mortality followed by low (26.25%) and high (2.5%) mortality up to first week. Table 2 (d) revealed that overwhelming majority (86.25%) of the rural women reported attack of predators as major cause of mortality followed by outbreak of diseases (7.5%) and unknown causes (6.25%). Predators was highly devastating factor to the backyard poultry in villages. The chick stage is most vulnerable, so care should be taken at this stage. They should rear under closed barn for housing of birds and preventive measures for seasonal diseases should be taken.

**Table 2:** Distribution of rural women according to different parameter of re-generation of flock

Egg set/hatch			
Eggs set/hatch	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Small (8-12)	30 (75.00)	30 (75.00)	60 (75.00)
Medium (12-16)	09 (22.50)	10 (25.00)	19 (23.75)
Large (16-20)	01 (02.50)	00 (00.00)	01 (01.25)
Mean ± Sd	12.12±2.24	11.95±2.13	12.03±2.17
Number of chicks obtained per hatch (hatchability)			
Chicks obtained	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Small (6-9)	30 (75.00)	22 (55.00)	52 (65.00)
Medium (9-12)	09 (22.50)	18 (45.00)	27 (33.75)
Large (12-15)	01 (02.50)	00 (00.00)	01 (01.25)
Mean ± Sd	8.3±1.75	9.12±1.71	8.71±1.77
Chicks mortality up-to first week			
Chicks mortality (Upto first week)	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Low (2-4)	10 (25.00)	11 (27.50)	21 (26.25)
Medium (4-6)	28 (70.00)	29 (72.50)	57 (71.25)
High (6-8)	02 (05.00)	00 (00.00)	02 (02.50)
Mean ± Sd	04.50±1.39	04.70±1.12	04.60±1.25
Causes of mortality of chicks			
Causes of mortality	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Predators	35 (87.50)	34(85.00)	69 (86.25)
Diseases	01 (02.50)	05 (12.50)	06 (07.50)
Unknown	04 (10.00)	01 (02.50)	05 (06.25)

(Figures in parentheses indicate percentage)

Table 3 reveals that range of eggs set/hatch was 8-20, hatchability 70.81 percent and chicks mortality up-to 1<sup>st</sup> week were 52.81 percent. It indicates carelessness of rural women toward poultry and more emphasizes on family work.

Backyard poultry treated as secondary work. Technical knowledge of rural women about regeneration of flock is negligible.

**Table 3:** Range of different production parameters

Districts	Egg set		Chicks obtained		Hatchability	Mortality		
	Range	Average	Range	Average	%	Range	Average	%
Hamirpur	8-20	12.12	6-13	8.3	68.48	2-7	4.5	54.21
Banda	8-18	11.95	7-15	9.12	76.31	3-8	4.7	51.53
Total	8-20	12.03	6-15	8.71	70.81	2-8	4.6	52.81

**Purpose of backyard poultry rearing**

Table 4 (a) reveals that overwhelming majority (88.75%) of the rural women reared backyard poultry as source of income, followed by both (11.25%) as source of income and own consumption. None of the rural women reared backyard poultry for own consumption purpose only. This is because of fact that poultry is usually reared by socio-economically poor rural women as this profession is not considered as respectful by the society. Kumaresan *et al.* (2008) [7] also had similar findings which revealed that majority of respondents reared backyard poultry for cash.

**Production of backyard poultry**

Table 4 (a) reveals that overall average eggs production from backyard poultry per household was ranged between 30 to 210 eggs per year similarly meat production ranged between 7 to 22kg per year. Table further reveals that production from backyard poultry per household was 96.25 eggs while, average meat production was 15.79 kg annually. Average eggs and meat production from backyard poultry per household of Hamirpur were 97 eggs and 16.22kg meat, respectively whereas in Banda district, it was 95.25 eggs and 15.37kg meat respectively. Production was low due to low

productive birds, small flock size and poor knowledge of rural women about backyard poultry farming.

**Egg production per household**

Table 4 (b) reveals that majority (75%) of rural women were found to belong to low level eggs production per family (30-90 eggs) followed by medium (18.75%,90-150eggs) and high (6.25%,150-210 eggs) per household. The average egg production per family in Hamirpur and Banda districts were 97 and 95.25 eggs, respectively. Overall average eggs production was 96.25 eggs. Low egg production in backyard poultry show poor quality breed of birds and poor feeding management.

**Meat production per household**

Table 4 (c) reveals that majority (65%) of rural women had medium level meat production (12-17kg) followed by low (33.75%, 7-12kg) and high (1.25%, 17-22kg) level meat production. Overall average meat production per household was 15.79 kg. Rural women rear indigenous type of bird for both egg and meat purpose. Bird takes more time to attained maturity weight.

**Table 4:** Distribution of rural women according to purpose of backyard poultry rearing

Purpose	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Source of income	37 (92.50)	34 (85.00)	71 (88.75)
Own consumption	00 (00.00)	00 (00.00)	00 (00.00)
Both	03 (07.50)	06 (15.00)	09 (11.25)
<b>Distribution of rural women according to eggs production from backyard poultry per household</b>			
Egg production level	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Low (30-90)	27 (67.50)	33 (82.50)	60 (75.00)
Medium (90-150)	10 (25.00)	05 (12.50)	15 (18.75)
High (150-210)	03 (07.50)	02 (05.00)	05(06.25)
Mean ± Sd	97±55.26	95.25±46.64	96.25±50.91
<b>Distribution of rural women according to meat production from backyard poultry per household</b>			
Meat production level	Hamirpur (n=40)	Banda (n=40)	Total (N=80)
Low (7-12)	12 (30.00)	15 (37.50)	27 (33.75)
Medium (12-17)	27 (67.50)	25 (62.50)	52 (65.00)
High (17-22)	01 (02.50)	00 (00.00)	01 (01.25)
Mean ± Sd	16.22±6.39	15.37±4.76	15.79±5.78

Backyard poultry is a good source of income and there is need to increase percentage of income from poultry. But the government interventions for development of this production system are limited and accessibility of rural women towards them is also very poor. Desi or indigenous birds are poor performers in egg and meat production with low hatchability. To maximize profit from backyard poultry farming there is an urgent need to improve the status of backyard poultry farming with an improved strain, which performs an excellent when

rear in the backyard with low inputs. There is need for the state government to improve old poultry schemes and implementation of schemes in better way after evaluation of old scheme. More number of skill oriented extension programmes of backyard poultry should be initiated so that the rural women become more skillful about the new technologies as well as the recommended practices and can maximize the productivity and consequently the income.

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