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## Poultry production practices adopted by farmers in Varanasi district of Uttar Pradesh

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### Abstract

A study entitled "Poultry production practices adopted by farmers in Varanasi District of Uttar Pradesh" was conducted to determine the administrative and profitable practices of farmers under various poultry production system. Five villages were randomly selected for the purpose of having a large number of poultry farmers. Data were collected from 20 respondents with the help of a systematic consultation strategy. The study area was full of middle-aged male farmers followed by youngsters. In both poultry (planned & backyard) system, the majority of respondents had livestock (including poultry) and agriculture as the main activity. In a formal system they conducted poultry farming programs in an in-depth and in-depth manner, and in an informal system all respondents conducted a comprehensive poultry production program in all five villages. Under the organised system all respondents raised chickens and provided separate housing. In the case of backyard poultry rearing chickens are fed kitchen waste and grain, they do not receive medicines while in the organised system of company feeding and home-made food were used and received medicine. Most poultry owners who raise birds in an informal manner make the necessary arrangements so that the bird can escape at night to protect itself from predators. Most respondents in the formal program reported that Coccidiosis and IBD are major productive diseases while in the systemic respiratory problems, Fowl pox, Coccidiosis, IBD and Ranikhet diseases have been reported affecting production.

**Keywords:** backyards, organized, management, poultry, production, unorganized

### 1. Introduction

Chickens have an important place in India as eggs and poultry are important and are a rich source of protein, vitamins and minerals. The poultry industry is an important source of income and employment for millions of farmers and other people engaged in joint ventures in the poultry industry (Gueye, 2005) <sup>[12]</sup>. Chicken is the most widely accepted meat in India. Unlike beef or pork, it has no religion. Poultry meat prices are lower than lamb or goat meat. Many Indian families, especially educated people in urban areas, have begun to accept eggs as a regular part of their vegetarian diet (Bhagerwal, 1989). Over the past three to four decades, poultry has made great strides, especially in the private sector, which has resulted in India becoming more self-sufficient in terms of quality breeding, modern poultry products, access to medicines and vaccines and technologies. skilled workers are trained (Ali, 2015) <sup>[11]</sup>. Poultry egg and meat, in recent years have become important and popular food for the 68.00 per cent of the non- vegetarian population of the country. Increase in consumption has resulted in increased demand and consequently production. Poultry production at present is the fastest growing sub-sector of Indian agriculture with a quantum jump both in respect of poultry production and productivity (Hussain, 2015) <sup>[14]</sup>. 7<sup>th</sup> POULTRY FEST 2018 is an International Exhibition on Poultry and Livestock Sectors. This Exhibition is a platform to bring together all the stakeholders of the Poultry industry. The companies engaged in Poultry Farming & Processing, Egg Grading and Processing Equipments Manufacturing, Poultry Feed Manufacturing, Poultry Feeding and Drinking Equipments Manufacturing, Conveying systems & Automated Plant Manufacturing, Poultry Drugs & Health Equipment Manufacturing, Poultry Hygiene, Sanitation, Waste and Odor Management Equipments Manufacturing, Cold Chain Technology, Live Birds & Meat Processing & Other Livestock Farming etc. can showcase their strength, products & services to the participants of this unique Poultry Expo. It is the best platform to reach the fastest growing poultry market in India. Considering the importance of poultry farming in Uttar Pradesh state in general and Varanasi district in particular the study entitled "Poultry production practices adopted by farmers in Varanasi District of Uttar Pradesh".

**2. Research methodology**

The present study entitled “Poultry production practices adopted by farmers in Varanasi District of Uttar Pradesh” has been carried out in the department of Animal Husbandry & Dairying, Institute of Agricultural Sciences, Banaras Hindu University, and Varanasi (UP). Purposively both commercial and backyard type of the poultry farmers were selected randomly for the study in the selected area near of the district. Multistage random sampling was adopted for the research purpose. All managemental practices in both organized and unorganized poultry production system and for this the interview schedule was developed accordingly.

**2.1 Data collection**

Information from secondary sources and observation through departmental documents, records, reports and other sources were collected. The secondary data were also collected from the KVK and Animal Husbandry Department of Banaras Hindu University Varanasi.

**2.2. Statistical tool used for analysis of the data**

The following statistical methods were used to analyses the data and come to conclusion with the help of Microsoft Excel version 10.

**Frequency**

The term ‘frequency (n)’ is used to denote how frequently a response appears in a class or category.

**Percentage**

The term ‘percentage (%)’ is used to denote the actual share of particular response in respect of total considered as hundred.

**Mean**

The mean was computed by the following formula.

$$X = \sum x \div N$$

Where, X = Mean of the scores

$\sum x$  = Sum of individual; scores N = Number of observation

**3. Result and Discussion**

The result obtained from the analysis of data collected from the respondents at their farm or homes have been presented under the following heads:

**3.1. Rearing system**

**Table 1:** Classification of the respondents according to rearing system in farms

Rearing system	Organized (n=10)	Backyard (n=10)
Extensive	0	10(100)
Intensive	3(30)	0
Semi intensive	7(70)	0

Present study shows (Table 1) that respondents in organized system were practicing semi intensive and intensive system of poultry farming, whereas in backyard system all respondent were practicing extensive system of poultry production in these areas. Simillar findings was accordance with (Bhatti *et al.* 1991) [3] who reported in commercial poultry production system majority of respondent adopted the semi intensive

system for rearing of chicken.

**3.2. Night shelter and types of houses in backyard system**

Under organized system all the respondents were rearing broiler and they provide separate houses. Majority of poultry owners rearing birds in unorganized system made necessary arrangements for night shelters of the bird to protect them from predators. It can be seen that majority (75%) of poultry owner in unorganized system had different shelter for night enclosure under the same roof whereas only 8.3 per cent share the same room with the family. The study shows (Table 2) that majority of poultry owners in night shelters of the bird to protect them from predators. In unorganized system (70%) kept the birds in kaccha house prepared by locally available material like mud broken bricks, tiles, wire net where as 21.67% and 8.33% respondents kept their birds in wooden and chapper house respectively, whereas in organized system poultry rearing majority of respondents (95%) use deep for chicken rearing. The finding was accordance with (Islama *et al.* 2015) [15].

**Table 2:** Classification of the respondents according to night shelter and type of houses in backyard system

Night shelters	Organized (n=10)	Backyard (n=10)	Type of house	Backyard (n=10)
Separate house	10(100)	0	Kacha house	70
Shared own house	0	2(20)	Wooden house	21.67
Any other	0	8(80)	Chapper house	8.33

**3.3 Litter material provided**

The present study reveals (Table 3) that in organized system all the respondent provided litter material whereas none of the respondents in unorganized system of poultry production provided litter material but they were providing torn and used gunny bags 70 per cent and rest 30 per cent used combination of straw and dry leaves as the bedding material. In case of organized system of poultry production different types of litter material were used. Among them 90% use saw dust and 10% rice husk as the as the litter material.

**Table 3:** Classification of the respondents according to type of litter material used in farms

S. No.	Litter materials/ bedding material	Organized (n=10)	Backyard (n=10)
1.	Saw dust	9(90)	0
2.	Groundnut shells	0	0
3.	Paddy husk	0	2(20)
4.	Rice husk	1(10)	0
5.	Gunny bags	0	5(50)
6.	Straw + dry leaves	0	3(30)

**3.4 Space provided**

All the respondent of organized system was providing upto 0.5 sq. ft. space per chick. In case of broiler birds the grower were provided 0.8 to 1.2 sq.ft. Space. In unorganized system, the birds receive housing only in the form of night shelter and they are allowed to scavenge by themselves in the surrounding during the day time. The space provided by the poultry owners according to the flock size and sometime houses were made in different tier. Plastic or earthen feederers and waterers are provided by majority of respondents. Majority (90%) of the respondents in organized system had the poultry house, 1 to 2 feet and 2 to 3 feet from the ground

level whereas in unorganized system poultry houses were made at different height from the ground level. Similar finding observed by (Mandal *et al.* 2003)<sup>[17]</sup>.

**Table 4:** Space provided per bird in farms

S. No.	Types	Space provided per bird
1.	Chicks	0.5 square feet
2.	Broiler	0.8-1.2 square feet

### 3.5 Height of poultry farms from ground level

Table 5 reveal that the majority (90%) respondents in organized system had the poultry house 1 to 2 feet and rests 10 per cent have 2 to 3 feet from the ground level whereas in backyard system poultry houses were made at different height from the ground level.

### 3.6 Arrangement made for chicks and birds

On perusal of table 6 it was found that cent per cent of the poultry farmers in the organized system had electricity connection in their poultry farms. For brooding purpose all the respondents had electric hover and *bukhari* (locally made heating system based on coal/wood). About 90 per cent poultry farmers had made optimum temperature for their chicks and birds. Rai *et al.* 2000<sup>[32]</sup> who observed all the poultry farms had chick guard. 70 per cent poultry farmers had optimum and adequate equipments at their poultry farms. 80 per cent farms were located at less crowded place whereas also 80 per cent farms were well connected to the road.

### 3.7 Artificial light provided to birds

The present study reveals that in organized system majority (80%) respondents gave 6 hr artificial light and 20% respondents provide more than 6 hrs of artificial light.

### 3.8 Arrangement in poultry farms at required interval

All the respondents in the organized system changed litter, clean and disinfect the equipments at the certain interval. All respondents done room disinfection and white wash after some time interval respectively (Table 8.0).

### 3.9 Feeding and watering material

In backyard poultry rearing, the practice prevalent in the rural area was of leaving the bird for scavenging in the morning and also giving hand full of grains. The feeding practices were very causal. The birds generally scavenged on locally available birds and seeds but in organized system of poultry rearing the birds are provided with regular feeds in their house.

### 3.10 Feeding management

#### (a) Frequency of feeding

Table 10(a) shows that a mixed type frequency of feeding pattern was observed in organized system of the study area.

#### (b) Quantity of feed /bird/day

All the respondent of the organized system feed their birds according to their market age. In backyard system the birds generally fed ad-lib from scavenging.

#### (c) Feed supplement

All of the respondents of organized system provide feed supplements whereas under backyard system the birds were released in the morning for scavenging and given a hand full of grains during the day time.

**Table 5:** Classification according to height of poultry farms from ground level

Height from ground level	Organized (n=10)
1-2 feet	90
2-3 feet	10

**Table 6:** Classification of the respondents according to arrangement made for chicks and birds

Arrangement	Organized (n=10)
Electricity supply	10(100)
Chick guard	10(100)
Hover (Electric) + Bukhari	10(100)
Optimum and adequate equipment	7(70)
Optimum temperature	9(90)
Road connection	8(80)
Less crowded place	8(80)

**Table 7:** Classification of the respondents according to artificial light provided to bird

Duration	Organized (n=10)
6 hrs	8(80)
More than 6 hrs	2(20)

**Table 8:** Classification of the respondents according to arrangement in poultry farms at required interval

S. No.	Variable	Yes	No
1.	Litter changed	10(100)	0
2.	Poultry house disinfected	10(100)	0
3.	Cleaning and disinfection of poultry equipment	10(100)	0
4.	White wash inside poultry	10(100)	0

### 3.11 Source of drinking water

Table 11 reveals that 91.7 per cent respondents of organized system used water from tap water and only 8.30 per cent respondents used from natural sources such as spring waters (Chashme Wahae).

**Table 9:** Classification of the respondent according to feeding and watering materials used

Material	Organized (n=10)
<b>Feeder</b>	
Plastic	10(100)
Metallic	0
Earthen pots	0
<b>Waterer</b>	
Plastic	10(100)
Metallic	0
Earthen pots	0

**Table 10(a):** Classification of the respondents according to frequency of providing feed

Frequency of feeding	Organized (n=10)
Twice	6(60)
3-4 time	4(40)
Total	100

**Table 10(b):** Classification of the respondents according to quantity of feed (per bird/day)

Quantity (grams)	Organized (n=10)	Backyard (n=10)
70 to 90	2(20)	0
90 to 110	5(50)	0
110 to 130	3(30)	0
Ad-lib	0	10(100)

### 3.12 Time of feeding

Study shows that majority (80%) of respondents in unorganized system poultry farmers offer supplementary feeds in the evening followed by (5%) and (15%) respondents offer in the evening and afternoon respectively.

### 3.13 Source of chick

Study shows that 60 and 40% respondents of organized system purchased their chick from govt. and local input dealer respectively. About 90 per cent backyard poultry farmers used natural hatching at home and equal percentage of 5 per cent respondents purchased the chicks from either from feriwala or local input dealer.

**Table 11:** Classification of the respondents according to sources of drinking water used in farms

Source of drinking water	Organized (n=10)
Natural source	1(10)
Tap water	9(90)
Stagnant water	0
Open drain	0

**Table 12:** Classification of the respondents according to time of feeding

Time of feeding	Backyard (n=10)
Morning	0.5(5)
Afternoon	1.5(15)
Evening	8(80)
Night	0
Total	10(100)

**Table 13:** Classification of the respondents according to source of chick

Source of chicks	Organized (n=10)	Backyard (n=10)
Govt. hatchery units	6(60)	0
Local input dealer	4(40)	0.5(5)
Hatching at home	0	9(90)
Feriwala	0	0.5(5)

**Table 14:** Classification of the respondents according to source of fertile hatching eggs

Source	Backyard (n=10)
Own birds	9.5(95)
Other poultry owners (neighbors).	0.5(5)

**Table 15:** Classification of the respondents according to hatchability of the eggs in backyard system

Hatchability of egg	Backyard (n=10)
50-70	1(10)
70-80	7.5(75)
80-90	1.5(15)

**Table 16(a):** Classification of the respondents according to treatment of birds

Treatment of birds	Organized (n=10)	Backyard (n=10)
Veterinary doctors	6.6(66)	0.3(3)
Paravets	2.3(23)	2.7(27)
Local experts/ Hakeem	1.1(11)	1.5(15)
Self-treatment	0	4(40)
No treatment	0	0.7(7)

**Table 16(b):** Classification of the respondents according to medicine used

Medicine used	Organized (n=10)	Backyard (n=10)
Allopathic medicine	10(100)	5.5(55)
Ayurvedic medicine	0	0.3(3)
Homeopathy	0	0.2(2)
Home made	0	3.3(33)
No medicine	0	0.7(7)

**Table 16(c):** Classification of the respondents according to type of vaccination

Types of vaccination	Organized (n=10)	
	Yes	No
Newcastle disease	10(100)	0
Marek's disease	10(100)	0
Infectious Bursal disease	10(100)	0

**Table 16(d):** Classification of the respondents according to source of vaccine

Source of vaccine	Organized (n=10)
Local input dealers	8(80)
From market	1.5(15)
Govt. supply	0.5(5)

**Table 16(e):** Classification of the respondents according to cause of mortality of birds

Cause	Organized (n=10)	Backyard (n=10)
Disease	9.5(95)	0.3(3)
Chilling	0.5(5)	0
Attack of predators	0	9.7(97)

**Table 17(f):** Classification of the respondents according to disease encountered to birds

S. No.	Disease encountered	Organized (n=10)	Backyard (n=10)
1.	Respiratory disease	3(30)	2.3(23)
2.	IBD	8(80)	1.7(17)
3.	Coccidiosis	8(80)	2(20)
4.	Fowl pox	0	1.2(12)
5.	Ranikhet	1.2(12)	1.2(12)

### 3.14 Source of fertile hatching eggs

In present study it was found that 95% of the respondents in backyard system either hatched eggs from their own birds and rest 5 per cent took them from other backyards poultry farmers (neighbors).

### 3.15 Hatchability of the eggs in backyard system

It can be observed from table 15 that majority (75%) respondents of backyard system reported that the hatchability between (70 to 80%) whereas 10% and 15% respondent claim less than 65 per cent and more than 80 per cent hatchability respectively.

### 3.16 Health management

#### (a) Treatment of birds

Result shows that majority 66 per cent of respondents treat the birds by veterinary doctors. About 23 per cent treated the birds by paravets local and 11 per cent respondents treated the birds by local experts/Hakeem. In backyard system major 40 per cent of respondents treated the birds by self-treatment followed by paravets (27%), local experts/ Hakeem (15%) and veterinary doctor (3%). About 7 per cent respondents in unorganized system did not treat their birds. Similar finding was accordance with Prakash *et al.* 2003<sup>[30]</sup>.



**(b) Medicine used**

All the respondent of the organized system used allopathic medicine for the treatment. In backyard system 55 per cent of respondents used allopathic medicine for the treatment of birds while 33 per cent used homemade medicines, rest 3 per cent ayurvedic medicine and 2 per cent homeopathy. Around 7 per cent don't use any medicine.

**(c) Vaccination**

All the respondent of organized system vaccinated their birds whereas none of the respondents in backyard system did any vaccination of their birds.

**(d) Type of vaccination**

Results shows that all the respondents of organized system vaccinated their birds against Newcastle disease, Marek's disease and Infectious Bursal disease.

**(e) Source of vaccine**

Majority of respondents (80%) purchase the vaccine input from the local dealers whereas (15%) and (5%) of the respondents got the vaccine from the market and govt. supply respectively.

**(f) Cause of mortality of birds**

All the respondents claimed that major cause of mortality is due to diseases. 95 per cent of the respondents under organized system reported mortality due to outbreak of disease. Whereas 97% of mortality in backyard system due to predators attack.

**(g) Disease encountered**

Table 16(g) reveals that majority of respondents of the organized system (80%) each reported that Coccidiosis and IBD. About 30% reported Respiratory diseases in their farms. In backyard system around 23 per cent respiratory problems, 12 per cent Fowl pox, 20 per cent Coccidiosis, 17 per cent IBD and 12 per cent Ranikhet diseases were reported. In backyard poultry rearing system the chickens are fed with kitchen waste and grain, they receive no medication while in organized system company feed and homemade feed were used and they receive medication.

**4. Conclusion**

The study will provide and insight of managerial practices in organized and backyard farms of Varanasi district of U.P. state. The study will also aid in effective promotion of poultry production and will help to generate information about the practices related to poultry production followed under different systems.

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**6. Conflicts of Interest:** All authors have no conflict of interest regarding this study.

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