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Management practices in Broiler Farming: A study of farms around Jammu city of Jammu & Kashmir State

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Abstract

A study has been conducted to observe the management practices adopted by broiler growers in Jammu district of Jammu & Kashmir state in the year 2014. The growers were categorized into three groups on the basis of number of birds namely; growers with less than 500 birds, 501-1000 birds and more than 1000 birds. The data from 60 growers were collected by selecting randomly 20 growers from each category. The socio-economic and management characteristics of broiler farms have been studied for each category which include family composition, educational status, occupational status, investment pattern, distance from input and output markets, training and experience of growers, system of housing, feeding, water, power etc. and the marketing channels adopted for sale of broilers.

Keywords: Management, broiler farms, investment, marketing channel

Broiler farming can act as an important source of supplementary income for small scale farmers. It can also act as a source of income for landless rural youths. Keeping its importance into consideration for small scale farmers and rural youths, the government has taken various initiative including the training of rural youths for adoption and effective management of broiler farming. India ranked 5th in the world in broiler meat production after USA, China, Brazil, and Mexico (GoI, 2009). The total production of broiler in India stood at 3.725 Million Tonnes in 2014. There is however, a tremendous scope to improve over that. Broiler industry can be adopted under a wide range of climatic conditions (Singh *et al, 2010*). The practices of chicken breeding selection, vaccination, and management play a major role in lowering the mortality rate and increasing growth rate. The greater care however is required in the dry seasons. Several studies have been conducted around the world on management practices of broiler farms, as conducted by Hayes, 1996; Kalla *et al.* 2007 & Esteghamati *et al.* 2011). Thus, the management practices have a great impact on the productivity of broilers which in turn affect the profit. There are several factors which affect the adoption and continuation of particular management practices by broiler producers as in some cases they have no other choice. This study has been conducted in Jammu district of Jammu & Kashmir state to observe the socio-economic characteristics of broiler farmers and to study the management practices adopted by them in broiler farming.

Materials and Methods

The majority of broiler farms in Jammu district are existed in and around Jammu city. A list of such broiler farms was collected from State Department of Animal Husbandry. The broiler growers then categorized into three different categories:

I category : less than 500 birds

II category : 501-1000 birds

III category : more than 1000 birds

Sixty broiler farms were randomly selected in total (20 from each category) in order to study the socio-economic characteristics of broiler farmers and management practices adopted by them in broiler farming.

Results and Discussion

Socio-economic and resource structure of broiler farms

The socio-economic characteristics of farmers are very crucial in determining the size of its enterprise and the probable returns from that enterprise. Some of the main socio-economic characteristics of broiler farms in and around Jammu city of Jammu & Kashmir have been discussed as below:

Table 1. Family composition in different categories (Person/farm)

S. No.	Broiler farms	Male	Female	Children	Total
1	Category I	1.90 (41.76)	1.65 (36.26)	1.00 (21.98)	4.55 (100.00)
2	Category II	2.30 (37.40)	2.50 (40.65)	1.35 (21.95)	6.15 (100.00)
3	Category III	2.70 (37.24)	3.00 (41.38)	1.55 (21.38)	7.25 (100.00)
4	Overall	2.30 (38.46)	2.38 (39.80)	1.30 (21.74)	5.98 (100.00)

Note: Figures in parentheses indicate percentage

Family Composition

The family composition and family size are the important factors that affect the size of broiler farms and thereafter the marketed surplus. The family labour which depends upon the composition of the family is used for performing various day to day operations. The detail of family composition of broiler farms has been presented in Table 1.

Educational status of broilers farmers

Literacy is the common attribute/aspect of adoption of modern enterprises and improved technology for better production. The standard of education moulds the farmer's response to improved technology and market performance. This is especially true of poultry enterprise which warrants a better quality of input management. For this purpose the educational status of the sample farms families has been examined and presented in Table 2. Illiterate are those who can neither read nor write and literate are those who can read and write.

Table 2. Education status in different farm size group (Person/ farm)

Particulars	Category I	Category II	Category III	Overall
Illiterate	1.00 (21.98)	0.85 (13.82)	1.35 (18.62)	1.07 (17.89)
Primary	1.05 (23.08)	1.33 (21.63)	1.55 (21.37)	1.31 (21.91)
Secondary	1.85 (40.66)	3.07 (49.92)	3.70 (51.04)	2.87 (47.99)
Graduation and above	0.65 (14.28)	0.90 (14.64)	0.65 (8.97)	0.73 (12.21)
Total	4.55 (100.00)	6.15 (100.00)	7.25 (100.00)	5.98 (100.00)

Note: Figures in parentheses indicate percentage

Occupational status of broilers farm families

The occupational status of farm family members denotes the number of earners, helpers and

dependents in the farm family. The number of earners, helpers and dependents per farm in different categories of broiler farms under study has been presented in Table 3.

Table 3. Occupational status of different size groups (Per farm)

Broiler farms	Earner	Helper	Dependent	Total
Category I	2.00 (43.96)	1.55 (34.06)	1.00 (21.98)	4.55 (100.00)
Category II	2.25 (36.58)	2.10 (34.15)	1.80 (29.27)	6.15 (100.00)
Category III	3.00 (41.37)	2.85 (39.31)	1.40 (19.32)	7.25 (100.00)
Overall	2.42 (40.46)	2.16 (36.12)	1.40 (23.42)	5.98 (100.00)

Note- Figures in parentheses indicate percentage

Investment on broilers farms

The pattern and magnitude of investment in fixed farm resources and variable resources in farm enterprise are the important indicators of the income generating capacity of the farmers. Generally three types of farm resources are used in a poultry enterprise viz. Long term assets which includes dwelling house, cattle shed, poultry shed and storage house. Medium term assets include feeders, waters, electric motor, bukhari, light and others (fans and coolers etc.) and Current assets include sponger, screwdriver, hammer, buckets, jugs, small tubs, vessel with lid, nails and miscellaneous items. The detail investment by broilers farmers on the mentioned resources has been presented in Table 4.

Table 4. Capital investment in different categories of broiler farms (Rs. /farm)

S. No.	Particulars	Category-1	Category-II	Category-III	Overall
1.	Long term assets				
a.	Farm building				
1.	Dwelling	90850.00 (45.53)	295000.00 (52.65)	507500.00 (54.19)	297783.33 (52.66)
2.	Cattle shed	6900.00 (3.46)	25050.00 (4.47)	75250.00 (8.03)	35733.33 (6.32)
3.	Poultry shed	41000.00 (20.55)	122500.00 (21.86)	187750.00 (20.05)	117083.33 (20.70)
4.	Storage house	32750.00 (16.41)	64000.00 (11.42)	75500.00 (8.06)	57416.67 (10.15)
5.	Total	171500.00 (85.95)	506550.00 (90.41)	846000 (90.33)	508016.66 (89.84)
2.	Medium term assets				
a.	Feeders	2444.00 (1.22)	7812.00 (1.39)	16475.00 (1.76)	8910.33 (1.58)
b.	Waters	2431.00 (1.22)	9498.00 (1.70)	15485.00 (1.64)	9138.00 (1.62)
c.	Electric motor	3295.00 (1.65)	4455.00 (0.80)	6050.00 (0.65)	4600.00 (0.81)
d.	Bukhari	5215.00 (2.61)	6875.00 (1.23)	7290.00 (0.78)	6460.00 (1.14)
e.	Light	650.00 (0.34)	800.00 (0.14)	933.00 (0.10)	794.33 (0.14)
f.	Others	2530.00 (1.27)	3445.00 (0.61)	1465.00 (0.16)	2480.00 (0.44)
	Total	16565.00 (8.30)	32885.00 (5.87)	47600 (5.09)	32382.67 (5.73)
3.	Current assets				
a.	Sponger	905.00 (0.45)	1910.00 (0.34)	5250.00 (0.56)	2688.33 (0.48)
b.	Screw driver	261.50 (0.13)	266.50 (0.05)	266.50 (0.03)	264.83 (0.05)
c.	Hammer	452.50 (0.23)	955.00 (0.17)	2625.00 (0.28)	1344.17 (0.24)
d.	Buckets	965.00 (0.48)	1000.00 (0.18)	1000.00 (0.11)	988.33 (0.17)
e.	Jugs	732.50 (0.37)	750.00 (0.13)	732.50 (0.08)	738.33 (0.13)
f.	Small tubs	3615.00 (1.81)	5980.00 (1.07)	8730.00 (0.93)	6108.33 (1.08)
g.	Vessel with lid	2941.25 (1.47)	6207.50 (1.11)	17062.50 (1.82)	8737.08 (1.55)
h.	Nails	278.75 (0.14)	1432.50 (0.26)	3937.50 (0.42)	1882.92 (0.33)
i.	Miscellaneous	1315.45 (0.66)	2356.76 (0.42)	3250.82 (0.35)	2307.67 (0.41)
j.	Total	11466.95 (5.75)	20858.26 (3.72)	42854.82 (4.58)	25059.99 (4.43)
4.	Grand total	199531.95 (100.00)	560293.26 (100.00)	936552.82 (100.00)	565459.36 (100.00)

Note: Figures in parentheses indicate percentage

Distance of broiler farms from input and output markets

The location and distance of input output market to the broilers units in and around Jammu city of Jammu & Kashmir state have been mentioned in Table 5.

Table 5. Location of input and output markets from broiler units

Location	Broiler farms			Overall
	Category I	Category II	Category III	
1.Source of input				
< 5 km	00 (0.00)	02 (10.00)	01 (5.00)	01 (5.00)
5-10 km	18 (90.00)	07 (35.00)	09 (45.00)	11.33 (56.65)
Above 10 km	02 (10.00)	11 (55.00)	10 (50.00)	7.67 (38.35)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
2.Market for output				
< 1	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)
1-5	02 (10.00)	05 (25.00)	02 (10.00)	03 (15.00)
Above 10	18 (90.00)	15 (75.00)	18 (90.00)	17 (85.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
3.Location of other broiler farms with in vicinity				
Within in 1 km	04 (20.00)	03 (15.00)	02 (10.00)	03 (15.00)
1-2 km	16 (80.00)	17 (85.00)	18 (90.00)	17 (85.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)

Note-Figures in parentheses indicate percentage

Training and experience of sample broiler farmers

The socio-professional detail i.e. experiences in poultry production and training acquired in poultry management by broiler entrepreneurs of the sample farms has been presented in Table 6.

Table 6. Training and experience of sample broiler farmers

Socio professional details	Broiler farms			Overall
	Category I	Category II	Category III	
1.Experience in poultry (year)				
< 5	04 (20.00)	03 (15.00)	02 (10.00)	03 (15.00)
5 to 10	14 (70.00)	13 (65.00)	10 (50.00)	12.33 (61.66)
Above 10	02 (10.00)	04 (20.00)	08 (40.00)	4.67 (23.33)
Total	20 (100.00)	20 (100.00)	20 (100.00)	60 (100.00)
2.Training in poultry management				
Yes	00 (0.00)	02 (10.00)	04 (20.00)	02 (10.00)
No	20 (100.00)	18 (90.00)	16 (80.00)	18 (90.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)

Note: Figures in parentheses indicate percentage

Management Practices adopted by broiler farmers

The management practices as adopted by broiler farmers in and around Jammu city were studied and have been discussed as below:

System of rearing birds and the type of roof

The system of rearing birds involves the questions like what type of housing and roof are made for broilers. There are generally two systems of housing namely; deep litter and cage but in this study, all the respondents were having deep litter system. Similarly, the type of roof can be of three types namely; grass roof, cemented roof and hut. The detail of such systems prevailing in study area has been presented in Table 7.

Table 7. System of rearing birds and the type of roof

Characteristics	Broiler farms			Overall
	Category I	Category II	Category III	
1.Type of unit				
Deep litter	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
Cage	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
2.Type of shed				
Grass roof	18 (90.00)	11 (55.00)	01 (5.00)	10 (50.00)
Cement roof	00 (00.00)	08 (40.00)	16 (80.00)	08 (40.00)
Hut	02 (10.00)	01 (5.00)	03 (15.00)	02 (10.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)

Activities of disinfection and feeding

The practices like average birds per batch, disinfection before installing chicks and method along with frequency of feeding of birds by the sampled farms under study have been presented in Table 8.

Table 8. Management practices of the sample broiler farmers

Item	Broiler farms			Overall
	Category I	Category II	Category III	
1. Average number of days per batch				
	31.2	30.3	32.5	31.33
2. Disinfection before installing new batch of chicks				
Yes	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
No	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
3. Method of feeding				
Feeder	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
Other	00 (0.00)	00 (0.00)	00 (0.00)	00 (0.00)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
4. Frequency of Feeding				
No. of times chicks fed per day				
1	20.00	15.00	7.00	14.00
2	44.00	30.00	35.00	36.33
3 and more	36.00	55.00	58.00	49.67
Total	100.00	100.00	100.00	100.00
No. of times birds fed per day				
1	27.20	12.50	10.80	16.83
2	60.30	67.40	65.70	64.47
3 and more	12.50	20.10	23.50	18.70
Total	100.00	100.00	100.00	100.00

Note- Figures in parentheses indicate percentage

Sources of water and power for the broiler units

The sources of water and power supply to the broiler units on the sampled broiler farms under study have been mentioned in Table 9.

Table 9: Sources of water and power for the broiler units

Characteristics	Broiler farms			Overall
	Category I	Category II	Category III	
1.Source of water supply				
Open well	02 (10.00)	04 (20.00)	02 (10.00)	2.67 (13.33)
Tube well	18 (90.00)	10 (50.00)	16 (80.00)	14.67 (73.34)
Panchayat tap	00 (0.00)	06 (30.00)	02 (10.00)	2.67 (13.33)
Total	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)

2. Source of power supply				
Public	20 (100.00)	20 (100.00)	20 (100.00)	20 (100.00)
Private	06 (30.00)	09 (45.00)	13 (65.00)	9.33 (46.65)
Both	06 (30.00)	09 (45.00)	13 (65.00)	9.33 (46.65)

Note: Figures in bracket indicate percentage

Frequency of marketing channels followed by broiler producers

The marketing channels adopted by broiler growers along with frequency have been presented in Table 10. Three channels are identified namely; producers to consumer; producers to retailer to consumer; and producer to trader to retailer to consumer.

Table 10. Frequency of marketing channels followed under different categories

Broiler farms	Producer to consumer (I)	Producer to retailer to consumer (II)	Producer to Trader to retailer to consumer (III)	Total
Category I	7.00 (35.00)	9.00 (45.00)	4.00 (20.00)	20.00 (100.00)
Category II	0.00 (0.00)	5.00 (25.00)	15.00 (75.00)	20.00 (100.00)
Category III	0.00 (0.00)	3.00 (15.00)	17.00 (85.00)	20.00 (100.00)
Total	7.00 (11.67)	17.00 (25.00)	36.00 (60.00)	60.00 (100.00)

Conclusion

The study revealed that seventy three per cent of the broiler units were located at the radius of less than 5 km to the residential settlement while twenty per cent broiler units were located between the radius of 5 to 10 km and only 6.65 per cent units were at the distance of more than 10 km to residential settlements. All the broiler farms were managed under deep litter system. Fifty per cent of broiler units were found to have grass roof, forty per cent had cement roof and only ten per cent had hut type roof. In majority of cases, chicks were fed thrice daily, whereas mature birds were fed twice daily. The most frequent marketing channel adopted by broiler farmers was 'Producer to trader to retailer to consumer'.

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