



FARM AND DISEASE MANAGEMENT BY COMMERCIAL POULTRY FARMERS

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ABSTRACT

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Commercial poultry farming is one of the key sector around the world especially in Pakistan due to its adaptability in different factors such as, low investment per unit, high growth rate, and agro-climatic conditions and also due to short generation interval. Unfortunately its progress is not enough to meet the demanding level due to the rate of high population. Therefore, the study was proposed to assess the farm and diseases management by commercial poultry farmers. Tehsil Faisalabad was selected purposively and the data were collected from randomly selected 120 commercial poultry farmers. The findings of the study revealed that majority of poultry farmers showed high level of knowledge on poultry housing management about spacing and watering equipment's (70.0%). However their awareness of bedding or litter management (52.5%) and its changing was low. They also had low level of knowledge about quality of feed and water (52.5%), identification of affected birds (54.2%) but they were well known about the vaccination of birds (60.8%) with the help of their traditional experiences. They were also well known about common diseases like bird flu (68.3%) and gumboro (65.0%) however they had lower level of knowledge about Vent gleet (53.3%) and Coccidiosis (41.7%). Therefore, it is recommended that the private extension agents should be encouraged to focus their extension activities on the poultry farmers who are not getting proper and relevant information about the management of housing, disease and their control.

1. INTRODUCTION

Poultry farming has passed one of the most important aspect, over the past few decades, its status changed from backyard poultry farming to commercial poultry farming. Efficiency in poultry production and protection depends on the knowledge of various production and management practices at farm level. It was thought appropriately to assess the knowledge level of poultry farmers to formulate necessary strategies for the overall development of poultry sector.

In Pakistan, Poultry sector is one of the organized and vibrant segment of agriculture and food industry. This is a fast income generating sector and provide employment opportunities over 1.5 million people in the country. In agriculture sector, the poultry has contribution in value addition 4.8% and livestock is 9.8%. Poultry meat contributes 24.8% of the total meat production in the country. Annually the poultry sector has shown a rapid growth which is 8-10%. The poultry industry had made considerable contribution in food production and also have vibrant role in the national economy and food security of the country. The investment in poultry sector increased day by day currently it is about Rs.200 billion [1].

There are two management system in poultry production one is rural poultry farming and the other is commercial poultry farming. The commercial poultry farming is an example of private poultry farming which have 15-20% growth per annum. This achievement is due to the incentive grant provided by the Government and private sector from time to time. It includes the duty free import of parent flocks, poultry farm equipment's, financing and credit, low income tax and machinery. Due to this higher investment and proper incentives and management have resulted in the organization of infrastructure which comprising of 252 hatcheries and their annual production capacity was to produce 346 million day- old chicks, 141 feed mills with the capacity to produce 2540 thousand tons of compounds feed per annum and 13154 poultry farms had the capacity to produce 98 million broilers Alam and Khan [2].

Many challenges faced by the poultry sector like diseases outbreak like birds flu, and avian influenza mismanagement and low level of knowledge about proper sanitation in the different parts of the country. Especially the broilers birds (280000) were affected due to diseases at 66 poultry farm. In the backyard poultry 40 cases were recorded and in commercial poultry farm it was 33400 cases.

Karcher [3] reported that feed of poultry and its costs was a major impact on the production of poultry and its farm operations. Due to low protein diets, the poultry birds like chickens take more time to grow, that's why they are at a higher risk of affecting diseases. The chickens had different requirements of nutrient depending on their type, age, and sex. Excessively utilization of dietary nutrients are often excreted in the feces. The environment is affected due to excess nitrogen and phosphorus in feces secreted by the poultry birds. Therefore it's necessary for managing the poultry farm and application of feeding formulas.

2. MATERIALS AND METHODS

The study was conducted in tehsil Faisalabad, district Faisalabad in Province Punjab, Pakistan. District Faisalabad consists of six tehsils i.e. Jaranwala, Sadaar, Faisalabad city tehsil, Samundari, Chak. Jhumra and Tandalianwala. The tehsil was selected purposively because it stands largest poultry production and more number of poultry farm and accessibility of the study area to the researcher. All the farms (109) of the tehsil Faisalabad were considered as the population. The 30 commercial poultry farm were selected purposively from whole population and four respondents selected through simple random sampling technique from each farm. The total sample size were 120 respondents. Keeping in view the objectives of the study, a pre-planned interview schedule was prepared and used for the collection of data. The data were analyzed by using Statistical Package for Social Sciences (SPSS) for drawing conclusions and recommendations. Descriptive statistics and inferential statistic such as frequencies and rank orders were used for interpretation of data.

3. RESULTS AND DISCUSSION

Knowledge is an important component, which significantly influences the adoption of new technology. For the present study, the commercial poultry farmers were chosen for detailed analysis.

3.1. Knowledge Level among Commercial Poultry Farmers

Commercial Poultry farming is the most effective and economical structure for society so for the commercial poultry farming the housing of birds is most important for protection and production. The poultry housing consists of different categories on the basis of their requirements. Poultry farming data regarding housing is presented in Table 1.1

Table-1.1. The knowledge level of poultry farm housing of the respondents

Knowledge level of the poultry farm Houses	Yes		No		Total		Ranked order
	f	%	f	%	f	%	
Knowledge about spacing	84	70.0	36	30.0	120	100.0	1
Watering equipment	84	70.0	36	30.0	120	100.0	1
Cleaning of the shed	80	66.7	40	33.3	120	100.0	2
Brooder guard	77	64.2	43	35.8	120	100.0	3
Cleaning of bird	77	64.2	43	35.8	120	100.0	3
Availability of fresh water	77	64.2	43	35.8	120	100.0	3
Preventive measures of diseases	75	62.5	45	37.5	120	100.0	4
Ventilation	74	61.7	46	38.4	120	100.0	5
Bedding or litter management	63	52.5	57	47.5	120	100.0	6
Feeder	63	52.5	57	47.5	120	100.0	6
Changing the litter	62	51.7	58	48.3	120	100.0	7

It is clear from the data presented in the table 1.1 that large majority of the poultry farmers had complete knowledge about the availability of fresh water and ventilation (81.0%) in poultry production practices ranked as 1st and 2nd in the study area. Majority of poultry farmers had knowledge about cleaning of the shed and brooder guard, preventive measures of diseases, availability of fresh water which ranked as 2nd and 3rd respectively. More than half of the farmers (51.7%) had lower level of knowledge about the changing of litter at the poultry farm.

Smith [4] reported that the poultry houses are the basic aspect for the protection of poultry birds and it must be sanitized. Poultry house sanitation depends upon the type of poultry houses like controlled and un-controlled shed because it depends upon the floor type. Poultry houses can be sanitized and clean by using many disinfectants in many ways. The selection of disinfectant must be controlled carefully and chosen properly to avoiding the problems relating to newly introduced flocks.

Mobley and Kahan [5] reported that the management of poultry farms like its ventilation, preventive measures of diseases etc. are one of the most difficult in newly introducing flocks.

3.2. Knowledge Level of Commercial Poultry Farmers about Feed Management at Poultry Houses

The data regarding feeding management was divided into different categories like type of feed (corn & soya bean), quality of feed and water, application of feeder, proper nutrition, drinkers and feeders cleaning and also the feeding requirements which provided by the private poultry companies at the poultry farm level. The data is given in Table 1.2

Table-1.2. The knowledge level of the poultry feeding and watering management of the respondents

Poultry feeding and watering management	Yes		No		Total		Ranked Order
	f	%	f	%	f	%	
Cleaning of drinkers and feeders	84	65.0	42	35.0	120	100.0	1
Corn & soya bean	76	63.3	44	36.7	120	100.0	2
Provision of proper nutrition	69	57.5	51	42.5	120	100.0	3
Application of feeder and waterier	61	53.3	56	46.7	120	100.0	4
Quality of feed and water	47	50.8	59	49.2	120	100.0	5
Feeding requirements	51	47.5	63	52.5	120	100.0	6

Table 1.2 depicts that large majority (65.0%) of the respondents had knowledge about cleaning of drinkers and feeders provided by the private extension field staff which is ranked as 1st, while 63.3% of the respondents were known about the feeding of poultry birds like corn & soya bean and ranked as 2nd. The respondents had knowledge about the provision of proper nutrition, the application of feeder and waterer, quality of feed and water at poultry house which is ranked as 3rd, 4th and 5th respectively. While near to half (47.5%) of the respondents had lowest level of knowledge about feeding requirements.

During the application of poultry feeding, its quality and requirement at proper time is very important. At farm level, all the workers should be well known for proper application and maintenance of the farm. Poultry feedings and its quality is an important role in broilers, chicks and laying hens etc. Egg production directly linked with proper and in time availability of feeding [6].

The quality of eggs and meat in poultry production has an important aspects. A good quality of eggs can be taken from the provision and timely availability of proper nutrients (feed) to the poultry birds [7].

Bhattacharya, et al. [8] stated that the feeding of poultry like rice meals, corns, maize, and soya bean and some other type of feedings like blood, bones and rice milt, bajra, and wheat are the most important foods for the poultry birds. Due to proper provision of feeding to poultry birds increased the meat and egg production.

3.3. Knowledge Level of Poultry Farmers about Poultry Protection

The poultry farmer's knowledge about the protection of poultry birds from diseases described below in the following table 1.3.

Table-1.3. The knowledge level of the poultry protection

Poultry protection	Yes		No		Total		Ranked order
	f	%	f	%	f	%	
Disease / Parasite	81	66.7	40	33.3	120	100.0	1
Unhealthy birds	73	65.0	42	35.0	120	100.0	2
Vaccination status	68	60.8	45	37.5	120	100.0	3
Disinfectant the poultry house	59	56.7	52	43.3	120	100.0	4
Identification of affected birds	51	54.2	54	45.0	120	100.0	5
Prevention and control	44	53.3	56	46.7	120	100.0	6

It is clear from the data presented in the table 1.3 that near to majority (66.7%) of the respondents had knowledge about the disease or parasite which ranked as 1st and unhealthy birds ranked as 2nd which provided by the private extension field staff. Majority (60.8%) of the respondents were known about the vaccination status of poultry birds which ranked as 3rd. While more than half (56.7%) of the respondents were known about disinfectant the poultry houses and ranked at 4th. While the poultry farmers have knowledge about identification of affected birds which ranked as 5th. The poultry farmers have lower level of knowledge about the prevention and control of diseases which ranked as 6th position.

Poultry protection practices are being done for the prevention and spreading of disease at poultry farm. It is used to accomplish and minimize the maximum movement or crossing of biological organisms like virus's bacteria and rodents etc. which directly or indirectly causes the diseases on the poultry birds. The biosecurity is the easiest and cheapest way to control the diseases during poultry farming, without it no one any programs and disease control practices being done at poultry farm effectively. The biosecurity is actually the eradication and effective risk management at the poultry farm by Tiakina [9].

3.4. Knowledge Level of Poultry Farmers about Poultry Diseases

The maximum losses in poultry farming is being done due to unhealthy and unprotected measurements and their practices regarding to diseases control at poultry farm such as chronic respiratory disease (CRD) is one of the most important disease for the losses of birds. It can cause the maximum mortality of poultry birds (100%) at its extreme stage. It is a very dangerous disease. The vaccination of diseases should be done ensured otherwise more than 70% of poultry birds could be killed due to fowl pox, vent gleet, fowl typhoid etc. during poultry farming compiled by Naila, et al. [10].

Table-1.4. Knowledge level of poultry farmers about poultry diseases

Poultry disease	Yes		No		Total		Ranked order
	f	%	f	%	f	%	
Bird flu	82	68.3	38	31.7	120	100.0	1
Gumboro disease	78	65.0	42	35.0	120	100.0	2
Fowl cholera	71	63.3	44	36.7	120	100.0	3
Chronic respiratory disease (CRD)	69	62.5	45	37.5	120	100.0	4
Fowl pox	64	61.7	46	38.3	120	100.0	5
Fowl Typhoid	59	60.8	47	39.2	120	100.0	6
Vent gleet	44	53.3	56	46.7	120	100.0	7
Coryza	40	50.0	60	50.0	120	100.0	8
Coccidiosis	35	41.7	70	58.3	120	100.0	9

Table 1.4 shows that large majority (68.3%) of the respondents had knowledge about bird flu it was so dangerous diseases in the poultry birds, farmers were clearly identified affected birds due to their experience which is ranked as 1st, while other vast majority (65.0%) of the respondents had knowledge about gumboro disease which is ranked at 2nd position. The poultry farmers also had knowledge about other diseases like fowl cholera, chronic respiratory disease (CRD), Fowl pox, Fowl Typhoid, Vent gleet and Coryza which are ranked in the above mention table. The farmers had lowest level of the knowledge about coccidiosis which ranked at 9th position.

Ameji, et al. [11] reported that Fowl typhoid, Gumboro, Fowl pox, Coccidiosis, Newcastle disease were the diseases observed by poultry farmers under extensive management system.

4. CONCLUSIONS

From the above study it is concluded that the farmers had lowest knowledge about changing of litter, which was the main cause of poultry diseases especially in newly produced chicks. Some of the farmers had not changed the feeders and waterer tools regularly. Most of the farmers were well known about the spacing and brooder guards which was comfortable for the poultry birds. The farmers had some information about poultry feed on the other hand they were not able to identify the quality of feed, water and also its requirements. It was also concluded that most of the poultry farmers had an idea about common diseases like bird flu and gumboro diseases, on the other hand they had little knowledge about the diseases like Coryza and Coccidiosis. They were also well known about the parasitic diseases and unhealthy birds due to their working experience. But they were not known about precautionary measures and to identify the affected fowl.

5. RECOMMENDATIONS

- i. Private extension staff should provide the training about the poultry farm practices.
- ii. Programs should be started to creating the awareness about diseases prevention and their controls.
- iii. Vaccination of poultry should be done time to time, which is only possible if the farmers are taught about it by experts.
- iv. Farmers usually value the suggestions given by public sector extension, so livestock department's extension services should be improved.
- v. Information communication technology should be used for extension services, farmers can be contacted on using ICTs tools, which is very effective now a days.

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REFERENCES

- [1] Government of Pakistan, "Economic survey of Pakistan, economic advisor's wing." Ministry of Finance, Islamabad, 2013.
- [2] S. Alam and M. A. Khan, "Poultry farming in Pakistan have developed as an important sub-sector of livestock." Available at: 200/issue32 /ibe1.htm, 2000.
- [3] D. Karcher, "Managing nutrients in poultry diets," *Michigan State University Extension*, 2009.
- [4] T. W. Smith, "Sanitation ,disinfectant and cleaning, Feasibility study for energy efficient on-farm poultry and small ruminant processing plants, Mississippi State University," 1999.
- [5] R. Mobley and T. Kahan, *Practical management of health Issues in a poultry production system: Symptoms. Sources, and prevention of common diseases*. Tallahassee, Florida: Florida A&M University, 2007.
- [6] D. Sainsbury, *Poultry health and management: Chicken, Turkey, ducks, geese, and quail*, 4th ed. London: Blackwell Science Ltd, 2000.
- [7] M. A. Mian, *Poultry production, animal husbandry*. Islamabad, Pakistan: National Book Foundation, 1994.
- [8] M. Bhattacharya, R. Buragohain, F. Ahmed, P. Pathak, and M. Ghosh, "Laying performance of Vanaraja birds in high altitude areas of Arunachal Pradesh under backyard system of rearing," *Poultryvet. com*, vol. 23, pp. 198-156, 2005.
- [9] A. Tiakina, *Protect New Zealand: The biosecurity strategy for New Zealand. Biosecurity Council*. The Biosecurity Council, 2003.
- [10] C. Naila, M. Farooq, F. Durrani, A. Asghar, and K. Parvez, "Prevalence and economic ramification of newcastle disease in backyard chicken in Charsadda, NWFP, Pakistan," *Online Journal of Biological Sciences*, vol. 1, pp. 421-424, 2001. Available at: <https://doi.org/10.3923/jbs.2001.421.424>.
- [11] O. N. Ameji, P. A. Abdu, L. Sa'idu, and M. Isa-Ochepa, "Knowledge of poultry diseases, biosecurity and husbandry practices among stakeholders in poultry production in Kogi State, Nigeria," *Sokoto Journal of Veterinary Sciences*, vol. 10, pp. 26-31, 2012. Available at: <https://doi.org/10.4314/sokjvs.v10i2.6>.

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