Journal for Research in Applied Sciences and Biotechnology

www.jrasb.com

ISSN: 2583-4053

Volume-3 Issue-3 || June 2024 || PP. 32-37

https://doi.org/10.55544/jrasb.3.3.7

Inspection of Hygiene and Vaccination of Broiler Chickens in Maimana City and Pashtonkot District

Mohammad Arif Noorzad[1] and Saifullah Saadat[2]

[1]Teaching Assistant, Department of Animal Sciences, Faculty of Agriculture, Faryab University, Faryab, 1801, AFGHANISTAN.

[2]Senior Teaching Assistant, Department of Animal Sciences, Faculty of Agriculture, Faryab University, Faryab, 1801, AFGHANISTAN.

[1]Corresponding Author: rf4500@gmail.com

www.jrasb.com || Vol. 3 No. 3 (2024): June Issue

Received: 14-05-2024	**Revised:** 24-05-2024	**Accepted:** 02-06-2024

ABSTRACT

Poultry farming is a good means of generating income and employment for the people of a country. In addition to having a good income, this industry; it prepares good food for humans, which is economical on the one hand, and on the other hand, chicken products are the best food for humans in Afghanistan and in the world. The purpose of this research is to clarify and explain the current state of hygiene and vaccination of broiler chickens. The research that has been done is a field research and three methods of observation, interview and questionnaire have been used to collect information. The result of the research showed that in 55 percent of Maimane farms, hygiene issues were observed, in 20 percent of farms, the hygiene conditions were relatively good, and in the broiler industry, in the research areas, respectively, ND+IB, IBD- A, IBD-B, and ND were the mentioned vaccines used in both research areas. The only difference between them in Maimana and Pashtankot district was the percentage of their implementation or use, so that ND and IB in Maimana in the period First, 100% was used, while 80% was used in the farms of Pashtankot district, and the amount of other vaccines were also different in Maimanah and Pashtankot districts.

Keywords- chicken, hygiene, farm, vaccination.

I. INTRODUCTION

Maintaining hygiene and observing it in the poultry farm is a matter that should be considered separately in the broiler chick keeping salons. By observing the sanitary conditions in broiler chicken farms, a good result can be obtained from a chicken breeding period. Vaccination or vaccinating chickens at the right time is also one of the necessary conditions to improve the performance of chickens and ensure their immunity from diseases.

Broiler chicken keeping salon and all tools and equipment with high pressure hot water, detergents and disinfectants such as chlorine, 2% formaldehyde, 1% caustic soda solution, ammonium or quaternary ammonium compounds were used.

For the arrival of broiler chickens, the chicken coop must first be prepared for the arrival of day-old chicks, because it is ensured that the chicken coop is clean and healthy, and this has a direct effect on the chicken breeding process. Also, things like collecting tools and equipment inside the stand, collecting and removing the litter from the stand, washing the stand, disinfecting the stand, washing and disinfecting the equipment and tools, spreading the bed and gassing the stand must be done

In order to prevent the death of the health of chickens, it is necessary to vaccinate because chickens are the most sensitive animals among all animals

Therefore, by examining the state of health care and vaccination of broiler chickens in this industry, it is considered necessary to raise the awareness of the

ISSN: 2583-4053

Volume-3 Issue-3 || June 2024 || PP. 32-37

https://doi.org/10.55544/jrasb.3.3.7

farmers, increase the chicken products and meet the people's needs for this product.

II. RESEARCH PROBLEM

Poultry farming in Faryab has been in a traditional form since a long time until a few years ago, and in recent years it has changed its shape and developed as a primary industry, but there are still limitations in the development of the poultry industry, which hinders the wide development of the poultry industry in Faryab. The province has been abandoned.

The main problems faced by poultry farmers in the country, especially the majority of farmers in Faryab province, is the lack of access to the necessary information related to the poultry industry. In addition to that, the low production level of poultry farms, the spread of diseases and the increase in the mortality of broiler chickens are also among the basic problems of the poultry industry in this province. The basic problem that this research was carried out to solve is the lack of sufficient information about how to maintain hygiene inside the salon, how to maintain personal hygiene and the tools and equipment of broiler chickens in Faryab province.

In this sense, it was deemed necessary to carry out a research on how to maintain the hygiene of the broiler chicken keeping salon, how to maintain the hygiene of the system and the tools and equipment related to broiler chicken breeding, as well as the vaccines that are applied to chickens at different ages. To identify the issues related to hygiene and vaccination that hinder the progress and development of the poultry industry in this province and find solutions so that the poultry industry has a lot of development.

III. THE IMPORTANCE AND NECESSITY OF RESEARCH

Livestock is the basic part of the agriculture sector of our country, Afghanistan, and poultry farming is an essential and key part of livestock in the world, including Afghanistan.

Poultry business is not only in Faryab, but also in Afghanistan and worldwide, it is a means of employment and means of livelihood for millions of people. Chicken meat is one of the traditional, low price and good quality foods; it has a significant amount of protein, which has all the amino acids necessary for life and growth. Due to various reasons, the poultry industry in Faryab Province is not developing much.

Considering the benefits of raising broiler chickens, the existing problems in the matter of raising broiler chickens in this province, in launching this research regarding the hygiene of broiler chicken keeping and vaccination salons, the existing gaps in the matter Breeding of broiler chickens, especially in terms of sanitary conditions and applicable vaccines, which hinder the progress and development of the poultry industry in Faryab province, was received and its solutions were sought.

Research purposes

1. Investigating the health status of broiler chickens in the research areas.
2. Getting information about Toridati vaccines, its quality and how to apply it to broiler chickens.

Research questions

1: What is the health status of broiler chickens in Faryab province?

2: Where are the vaccines that can be used in broiler chickens imported from and how are they applied?

IV. LITERATURE REVIEW

Currently, poultry farming has developed globally. During the past 19 years, the poultry industry in the world has been accompanied by significant progress, according to many researchers, none of the livestock industries can be compared to this industry in terms of progress. The published statistics of the growth and progress of poultry farming in the world are 98 percent of the poultry industry between 1990-2007 AD (June, 2013, p. 12). Hygienic procedures for keeping chickens of different ages should be far apart from each other. Broiler chicken keeping salon and all equipment and tools should be used with high-pressure hot water, detergents and disinfectants such as chlorine, 2% formaldehyde, 1% solution of caustic soda and ammonium compounds. Chickens should be purchased from farms or authorized stores, chicken food should be purchased in appropriate packages and should be transported in an appropriate manner. Nutrition should be balanced and regulated and of good quality. Dirty and wet carpets should be kept away from the salon. Chicken houses should be properly ventilated. The clothes, shoes and other equipment of farm workers should be properly washed and sterilized. There should be an area for disinfecting the feet during entry into the chicken houses (Hussein & Kaonad, 2015, p. 72).

If the poultry farm is not managed properly, it becomes a threat to biological security or biosecurity, that is, if we do not clean the farm from microbes and diseases, this problem can spread to other animals and even humans. The best way to prevent diseases is to implement serious biosecurity measures, which include cleaning and disinfecting the poultry farm, establishing health rules for the employees of the poultry farm and controlling the visitors in the poultry farm (Vali, 2015, p. 12).

The feed grains differ according to the age of the chickens, so that the feed grains of small chickens are wide and plate-like, and these feed grains are used for one-day-to-two-week-old chicks. It should be cleaned once a day and large feeders are used for several-week-old chickens and are sold in different capacities (Wine, 2016, p. 50). Broiler chicken keeping

ISSN: 2583-4053

Volume-3 Issue-3 || June 2024 || PP. 32-37

https://doi.org/10.55544/jrasb.3.3.7

salon and all tools and equipment should be used with high-pressure hot water, detergents and disinfectants such as 2% chloroform aldehyde, 1% caustic soda solution and ammonium compounds can be used (Hussein & Kaonad, 2015, p. 72).

To raise broiler chickens, first, the chicken coop should be prepared for the arrival of day-old or newly arrived chickens, because it is ensured that the chicken coop is clean and healthy, and this has a direct impact on the chicken breeding process. . In addition to that, things such as collecting the tools and equipment inside the stand, collecting and removing the litter from the stand, washing the stand, disinfecting the stand, washing and disinfecting the equipment and tools, spreading the bed, gassing the stand must be done (wool , 1389, p. 18).

At 5 days old, the IB vaccine is combined with ND in the form of eye drops and drinking water for chickens. At 12 days old, the type of IBD vaccine is Gumbro in the form of eye drops and drinking water. At 18 days old, IB is combined with ND in the form of eye drops. And drinking water and in 24 days of IBD it is applied as eye drops and drinking water (Wine, 2016). Gambro vaccine is applied in the form of eye drops in the first instance. Infectious bronchitis or IB as eye drops, Newcastle as eye drops at 7-8 days. Gambro second round or type B is applied in drinking water at 14 days, Newcastle at 18 days as eye drops, Gambro third round in drinking water at 32 days and finally Newcastle at 42-45 days as eye drops. (Javadpur, 1391, p. 35).

Chickens are vaccinated in two ways, one is individual methods and the other is group methods. Individual methods are applied in several ways, which include the eye drop or nose drop method, the method of immersing the beak in the container containing the vaccine, the injection method, and the inoculation method in the tissue of the wings or the root of the feathers, such as the smallpox vaccine. Group methods are also applied in several ways: the drinking water method, such as Newcastle and Gambro's infectious bronchitis, and the spray method, such as Newcastle's and Bronchitis (Shakri, 2013, p. 61).

Never use outdated vaccines because such vaccines never provide adequate immunity. For each specific type of vaccine, a special recommended method is used and sick chickens should never be vaccinated, especially the intended flock should be free of respiratory diseases. Vaccines should be stored in dark and cool places (at 4 degrees Celsius). The rest of the vaccine and its administration method should be remembered so that it can be traced in case of any problem. After vaccination, it is better to increase the temperature of the breeding place by 1.5-2 degrees Celsius for 1-2 hours. Flux or freezer must be used for transporting and buying vaccines. In hot areas, garlic vaccination was done in the coolest hours of the day (Rashidi, 2016, p. 113).

V. RESEARCH MATERIALS AND METHODS

This research was carried out in the field in Faryab province. In this province, areas such as Maimana and Pashtankot district were selected using a random method. Also, in each area, the farms that were researched were also random, so that from the center, six districts were randomly selected, which included 13 farms, and in Pashtankot district, nine villages were randomly selected, which included the number of farms. The farms of the mentioned villages included 10 farms, a total of 23 farms in Maimana, Pashtankot districts were investigated, and parameters such as hygiene and vaccination were investigated.

In order to collect necessary information, three methods including observation, interview and questionnaire have been used. In the observation method, the application of vaccines and the issues related to maintaining the health of broiler farms were observed. In the interview section, 40 farmers and professionals were interviewed in order to obtain detailed information, and for those who had scientific and practical information about the research topic, a questionnaire was prepared according to the research objectives and distributed to them. became the tools and equipment used in this research include receiver, pen, booklet, camera, telephone, vehicles and other necessary equipment. The figures obtained were analyzed using the Excel program.

VI. RESULTS

Hygiene

The findings indicate that, in a large number of farms in the center, sanitary conditions were observed, while in some farms, they were relatively good, and in some, they were not so observed. On the contrary, in many farms of Pashtonkot district, sanitary conditions were not observed, only in a limited number of farms, sanitary conditions were relatively observed, and in some farms it was good. Table 1 shows the level of compliance with hygiene activities in the farms of the researched areas.

Table 1: The percentage of compliance and non-compliance with sanitation in the areas under investigation.

Bad	Fair	Good	District / City
25	20	55	Maimana
53	17	30	Pashtonkot
39	18.5	42.5	average

According to table 1, in 55 percent of Maimana farms, hygiene issues are observed, so that the responsible people prevent the movement of

ISSN: 2583-4053

Volume-3 Issue-3 || June 2024 || PP. 32-37

https://doi.org/10.55544/jrasb.3.3.7

irresponsible people inside the farm, and they take care and clean the grain troughs and water troughs on a permanent basis. Controlling the temperature and humidity inside the salon, washing hands and feet with antimicrobial substances, observing and keeping the special clothes clean during the work inside the salon are among the things that are observed in 55 percent of Maimana farms. . In 20 percent of the farms, the sanitary conditions were relatively good, so that all the sanitary conditions were observed, but they did not pay much attention to cleaning the grain troughs and water troughs. The movement of irresponsible people was controlled, but personal hygiene of employees was not good. In 25 percent of Maimana farms, hygiene was at a very low level, the part where the maintenance hall was dirty, the movement of irresponsible people inside the farm and the maintenance hall was not hindered. did not have 30 percent of the farms in Pashtankot district had good sanitation, 17 percent had relatively good sanitation, and 53 percent of the farms in this district had very bad sanitation.

Table 2: Broiler chicken farm problems due to sanitary conditions in the areas under investigation by percentage

Bad condition of the salon	Impurity of grain feeders and water feeders	Underfoot carpet problems	Irregular heat	Improper ventilation	District / City
15	45	21	23	23	Maimana
55	70	61	70	70	Pashtonkot
35	57.5	41	46.5	46.5	average

Table 2 shows the problems caused by the sanitary conditions in the research area. The average level of improper ventilation was 46.5% due to the lack of sustainable electricity and natural ventilation in both research areas, therefore, due to improper ventilation, the chickens under cultivation sometimes suffered from respiratory problems, which worried the farmers from this area. The average level of 46.5 percent of the farms in Faryab center and Pashtankot district was that the temperature inside the storage room was irregular and always changing, which was a problem in raising meat poultry. On average, 41% of the farms in Maimana and Pashtonkot district were too wet or too dry, so that the high and abnormal humidity caused by the pouring of water from troughs and poultry waste due to improper ventilation formed an inappropriate state of the substrate. The low humidity of the bedding materials in some farms causes the scattering of dust caused by the dryness of the bedding materials in the salon space, making the conditions for the spread of various diseases and respiratory problems in the chickens favorable. On average, 57.5 percent of the farms in both districts had old and unclean grain feeders and water feeders, which was very favorable for the transmission of diseases through these types of grain feeders and water feeders in chickens.

Vaccine

Based on the findings, the vaccines used in different life stages of chickens are IB, ND, IBD, which means Gambro A, and IBD, which means Gambro B. Table 3 shows the periods of adaptation, type of vaccine, percentage of adaptation, age, method of adaptation and amount of adaptation in the studied areas.

Table 3: Vaccination in broiler chicken farms in the studied areas by percentage

matching value	Matching method	Age (day)	application percentage	Type of vaccine	application periods	District/city
A drop in the eye	eye drops	6-12	100	IB+ND	first period	Maimana
1 tablet in 18 liters of water	Drinking water	13-18	98	IBD-A	Second period	
1 tablet in 18 liters of water	Drinking water	25-30	70	IBD-B	Third period	
1 tablet in 18 liters of water	Drinking water	30<	20	ND	Fourth period	
A drop in the eye	eye drops	6-12	80	ND+IB	first period	Pashtonkot
1 tablet in 18 liters of water	Drinking water	13-18	75	IBD-A	Second period	
1 tablet in 18 liters of water	Drinking water	25-30	5	IBD-B	Third period	
1 tablet in 18 liters of water	Drinking water	30<	5	ND	Fourth period	

ISSN: 2583-4053

Volume-3 Issue-3 || June 2024 || PP. 32-37

https://doi.org/10.55544/jrasb.3.3.7

Table 3 shows the vaccines used in Faryab's broiler industry, so that, respectively, the comparative vaccines were ND+IB, IBD-A, IBD-B, and ND, each of these vaccines according to the above table in one of the periods was used adaptively. In both areas of research, the mentioned vaccines were used, the only difference between them in Maimana and Pashtonkot district was the percentage of their application or use, so that ND and IB were applied 100% in Maimana in the first period, while in the farms Pashtonkot district used 80 percent and the amount of other vaccines were also different in Maimana and Pashtonkot districts.

VII. DISCUSSION

(Vali, 2016), stated that if the poultry farm is not managed properly, it becomes a threat to biological security or biosecurity, that is, if we do not clean the farm from diseases and microbes, this problem can affect other animals, even humans. to spread According to him, the best way to prevent diseases is to implement serious biosecurity measures, which include cleaning and disinfecting the poultry farm, establishing health rules for the employees of the poultry farm and controlling the visitors in the poultry farm. Disinfectants that can be used to disinfect farms are sodium hydrochloride or chlorine dioxide, iodine and phenol. Formalin is a gas that is used after washing in the salon. The result of the present research is consistent with the statements, only in one point it is in conflict, which is the establishment of health rules for poultry farm workers, in the majority of Faryab poultry farms, the workers did not follow the health rules, and this issue They thought it was very trivial because they were not aware of the importance of taking care of their health.

(Iranportari, 2016), regarding the cleanliness and hygiene of the poultry house, for breeding broiler chickens, the chicken house must first be prepared for the arrival of day-old chickens or newly arrived chickens, because the cleanliness of the place and the health of the chickens are important. The chickens were assured and this has a direct effect on the broiler chicken breeding process. Also, things like collecting tools and equipment inside the stand, collecting and removing the bed from the stand, washing the stand, disinfecting the washing stand and disinfecting the tools and equipment, spreading the bed and gassing the stand should be done. The result of this research is completely consistent with Iranportari's report.

(Mohmand, 2015), stated that the proper health conditions in a hen house or chicken breeding salon are that the hen house should be clean, ventilated and free of moisture, warm in winter and cold in summer, drinking water according to the number of chickens. There should be enough gutters and gutters, the gutters should have mesh, there should be sun in the winter and shade in the summer, the walls should not have holes and there should be no unnecessary objects in between and on the surface, the gutters and gutters should always be clean. Have proper storage of tools and food. The result of the present research is consistent with Mohmand's statement, but it contradicts Mohmand's statement in two cases, for example, in some Faryab farms, there were unnecessary objects among the chickens and no attention was paid to remove these objects. The cleanliness of grain feeders and water troughs in some broiler farms in Faryab Province, maintaining the hygiene of grain feeders and troughs was not that much attention because of the lack of another suitable place to move the equipment, as well as the lack of awareness of the dangers of contaminated grain feeders and The waterers used for chickens were broilers.

(Sohrabi, 2017), reported that in order to prevent chickens from dying, vaccination is essential because chickens are the most sensitive of all animals. He reports that the vaccines available in the market and pharmacies are not of good quality; on the contrary, those who sell vaccines say that the vaccines are of good quality. He concludes that the imported vaccines are of good quality. It is because care is not taken in its maintenance and its implementation is done by non-professionals, and he says that about 45 percent of the vaccines are of good quality, it is only because of the difficulty in transporting and storing them. 30 percent of the vaccines are not of good quality because most of the vaccines are imported commercially and 20 percent of the vaccines are of good quality. The findings of this research are consistent with Sohrabi's statement.

(Pin, 2016), regarding the vaccines used during breeding for broiler chickens, says that in 5 days, the IB vaccine is combined with ND in the form of eye drops and drinking water, in 12 days. The daily dose of the IBD vaccine is Gumbro in the form of eye drops and drinking water, in 18 days of IB it is combined with ND in the form of eye drops and drinking water, and in 24 days of IBD as eye drops and drinking water. The result of the current research is consistent with his statement; only the difference is in the days of its implementation, so that the ND and IB vaccines in chickens raised by Faryab Farms are about 2 days earlier than the statement of the PIN Institute.

(Reza, 2013), states that the Gambro vaccine is administered in the form of eye drops in the first instance. Infectious bronchitis in the form of eye drops, Newcastle as eye drops in 7-8 days, the second dose of Gambro in drinking or drinking water in 14 days, in 18 days Newcastle as eye drops, the third dose of Gambro in the same drinking water in 32 days and finally Newcastle is applied as eye drops in 42-45 days. It also reports that in the second sample of Newcastle, it is used in 45-50 days as eye drops, spray or injection. The current research is consistent with Reza's report, only one method of its implementation is different from the current research, which is the injection method. The reason for not implementing the vaccine by this method is that many of the farmers in Faryab Province were

ISSN: 2583-4053
Volume-3 Issue-3 || June 2024 || PP. 32-37
https://doi.org/10.55544/jrasb.3.3.7

unprofessional and all the vaccines used were they applied Dr. Veterinarian's advice in water and eyes, but they did not have the ability to apply the vaccine due to being unprofessional.

VIII. CONCLUSION

Issues related to hygiene have been considered in many farms of Faryab province, while in some farms, farmers did not pay serious attention to this matter, and in some farms, hygiene was very low in the graph. . The reason for that was the lack of proper knowledge of observing the sanitary conditions in a farm. The vaccines used in the breeding of broiler chickens were mostly imported, as these vaccines were imported from different countries, and most of them were not of good quality, and the effects of these vaccines were not so good.

ORDERS

The issue of biosecurity of farms should be taken into consideration and the movement of irresponsible persons inside the farms should be prevented, and serious attention should always be paid to the cleanliness of grain feeders and water troughs, and edible seeds from sources or bought somewhere that has a health certificate or at least valid because; Sometimes the seeds that are purchased may be contaminated with various diseases of broiler chickens. Also, the water sources that are given to chickens should be reliable. That is, in the first step, farmers should receive the necessary information to observe the sanitary conditions, and this work is provided through short-term training courses.

Vaccines are mostly imported and are not of good quality. It is possible that the lack of good quality is due to the way vaccines are stored and still commercial. Therefore, care must be taken in the way vaccines are stored. In addition, imported vaccines must be controlled by the government or limited. At least the people who work in this direction should pay serious attention to this issue so that the vaccines are at least of good quality and at the same time have good effects on the performance of the chickens.

REFERENCES

[1] Pashmi, M. (1389). Poultry farming Tehran: Agricultural Education and Promotion Publications, Tehran, Iran.
[2] Javadpur, R. (2011). Poultry management. Isfahan: Arkin Danish Publications, Isfahan, Iran
[3] Jon, S. (2013). Chicken feed. Tehran: Arkin Danish Publishing House, University of Tehran, Iran.
[4] Rashidi, A. (2016). Broiler breeding. Tehran: Textbook Publishing House, Tehran, Iran.
[5] Rezaei, M. (1389). Growth stimulants in poultry feed. Tehran: Avai Masih Publishing House, University of Agricultural Sciences and Natural Resources, Jahan University, Tehran, Iran.
[6] Zoheri, M. (2008). Broiler breeding. Tehran: Tehran University Press, Iran.
[7] Sohrabi, A. (2017). Investigating the factors of non-development of broiler breeding. Kabul: Master's theses of the Faculty of Agriculture, Kabul University.
[8] Shakri, F. (2013). Broiler Breeding Guide. Karaj: Shakri Farhang Publishing House, Karaj Organization of Agricultural Research, Education and Promotion.
[9] Shakri, F. (2013). Broiler breeding guide. Karaj: Shakri Farhang Publications, Karaj, Organization of Agricultural Education and Promotion Research.
[10] Shamaa, M. (1388). Principles of livestock and poultry nutrition. Tehran: Tehran University Press, Iran.
[11] Mansheri, M. (2016). The principles of designing a broiler salon. Tehran: Agricultural Education Publications.
[12] Mehrooghi, A. (1392). Poultry buildings, facilities and complete equipment. Tehran: Serva Publishing House, Tehran Academic World, Iran.
[13] Mohmand, Sh. (2014). Poultry guide for farmers. Kabul: non-governmental organization.
[14] Mohmand, Sh. (2014). Poultry guide for farmers. Kabul: Saeed Publications.
[15] Mohmand, Sh. (2014). Poultry guide for farmers. Kabul: Saeed Publications.
[16] Mohmand, Sh. (2014). Poultry guide for farmers. Kabul: Saeed Publications.
[17] But, M. (2015). Guide to broiler farming. Cable: Institute of pin.
[18] Casey, W., & Ritz, B. (2015). *Extention poultry*. Georgia: Scietis University.
[19] Hussein, A. (2015). Management Sanaition and Diseases prevention poultry Farms. *Cairo University*, 56.
[20] Hussein, A., & Kaonad. (2015). Management Sanaitation and Diseases prevention poultry Farms. *Cairo University*.
[21] Wine, P. (2016). *the effect of humidity on growth and feed conversion of broiler checkens.* kabul: kabul institute.