

Overview of Broiler and Layer Disease Management and Their Vaccination Schedule

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ABSTRACT

Disease control in broilers and layers ensures that birds raised for meat and eggs are healthy and productive. Vaccinations are essential for preventing diseases because they trigger the immune system to produce antibodies that protect against specific pathogens. The most crucial aspects of managing broiler and layer conditions include biosecurity measures, hygienic practices, nutritious diets, and vaccination schedules. A well-balanced diet and strict biosecurity regulations and good hygiene support the bird's immune system. Layers frequently receive vaccinations against egg drop syndrome, infectious bronchitis, Marek's disease, Newcastle disease, and avian influenza. Poultry flocks require regular veterinary care and adaptation monitoring to increase profitability, productivity, and health. Disease control and prevention are enhanced by assessment-based management.

1. Introduction

Disease management for broilers and layers involves using different methods to prevent, control, and treat diseases that often affect poultry raised for meat (broilers) and eggs (layers). Vaccinations are essential for keeping birds from getting sick because they trigger the immune system to make antibodies that protect against specific pathogens. Keeping strict biosecurity measures in place to stop diseases from being brought in or spreading. This means controlling who can get into the farm, ensuring it is clean, and correctly removing the trash. Ensure that the housing, feeders, waterers, and equipment are clean and sanitized to stop the spread of disease. Giving the bird well-balanced, high-quality food helps its immune system and overall health. Vaccinating against common broiler diseases by providing vaccines at set times. The vaccination schedule may differ depending on where the farm is, how it is run, and how common a disease is. You must talk to a vet to determine the correct vaccines and when to give them. Marek's disease is a virus that affects the nervous system. This vaccine is given to babies in their first few days of life to protect them from getting it. Newcastle disease is a highly contagious viral disease that affects the respiratory, digestive, and nervous systems. The vaccine is given in the first week to protect against it. Given between 14 and 21 days of age to protect against IBD, which is also called "Gumboro disease" and mainly affects the immune system. At 10–14 days old, a vaccine is given to protect against infectious bronchitis, a lung disease caused by a coronavirus. Depending on the risk assessment and prevalence of avian flu in the area. Layer disease management aims to keep laying hens healthy and productive. Management is similar to how broilers are raised, but the vaccination schedule may differ. Given during the first few days of life. Given in the first week. Between 10 and 14 days old. Depending on the risk assessment and where the disease is most common. Given at about 14 weeks of age to protect against EDS, a viral disease that causes a drop in egg production and quality.

Layer and Broiler Disease Management

Broiler disease management aims to find ways to prevent, control, and treat diseases in birds raised for meat. Layer disease management involves keeping laying hens healthy and productive so that eggs can be made. Both broilers and layers can get diseases that can hurt their health, production, and economic viability. Disease management involves putting in place biosecurity measures, keeping hygiene and sanitation in good shape, ensuring people get the proper nutrition, and following vaccination protocols.

Vaccination importance in disease prevention

Vaccination is essential for preventing and controlling diseases in broilers and layers. Vaccines stimulate the immune system of birds to produce antibodies that are protective against specific pathogens, thereby reducing the severity and spread of diseases. Vaccination aids in preventing disease outbreaks, reducing production losses, and enhancing flock health and welfare. Along with biosecurity, hygiene, and nutrition, it is a fundamental component of a comprehensive

disease management program. Vaccination schedules are determined by the region's prevalent diseases, the birds' age, and the risks associated with the production system. Consultation with a veterinarian is essential for determining the proper vaccines and developing an efficient vaccination program for broilers and layers [1].

2. Management of broiler disease

Biosecurity methods

Implement rigorous biosecurity measures to prevent the introduction and spread of disease. Implement measures to restrict the movement of people, vehicles, and equipment on the farm property. Maintain a biosecurity zone with footbaths, disinfection stations, and limited access. Reduce exposure to wild birds, rodents, and other potential disease vectors. Monitor and enforce visitor protocol, such as proper hygiene and protective attire.

Sanitation and hygiene performs

Ensure that housing facilities for broilers are clean and sanitized. Regularly clean and disinfect production-related equipment, feeders, and waterers. It is necessary to manage waste disposal effectively to reduce the likelihood of disease transmission. Employ stringent pest control measures to prevent rodent and insect infestations. Maintain adequate ventilation and airflow to lower the risk of respiratory illnesses.

Appropriate nourishment

Provide a balanced and nutrient-dense diet to support the broilers' immune system and overall health. Always ensure access to clean and fresh water. Consult a poultry nutritionist to formulate appropriate diets for various growth stages. To prevent contamination and spoilage, monitor feed quality and storage conditions [2].

Vaccination Schedule of Broiler Birds

Sr.	Vaccine	Recommended Age of Birds	Administration route	Administration site
1	Marek Disease	First day	subcutaneous	Neck and wing
2	Newcastle Disease Vaccine	One day old	Drinking water or Drops in the Eyes and Spray	Oral or Eye
3	Infectious Bronchitis	10-14 days old	Drinking water or Drops in the Eyes and Spray	Oral or Eye and Respiratory
4	Infectious Bursal Disease	14-21 days old	Drinking water and Spray	Respiratory or oral
5	Avian Influenza	Regional prevalence	Intramuscular/ subcutaneous	Neck and Muscle of breast

3. Management of layer disease

Biosecurity measures for layer disease

Implement rigorous biosecurity measures to prevent the introduction and spread of diseases. Control access to the layer farm, including

managing restricted entry points and visitors. Maintain biosecurity zones with footbaths and proper disinfection procedures. Reduce exposure to wild birds, rodents, and other potential disease vectors. Implement rigorous hygiene measures for all personnel, equipment, and vehicles entering the farm.

Practices sanitation and hygiene

Ensure the cleanliness and upkeep of the layer housing facilities. Clean and disinfect equipment, nests, feeders, and waterers regularly. Implement proper waste management and removal practices to reduce disease transmission. Implement effective pest control measures to prevent infestation. Maintain adequate ventilation and airflow to lower the risk of respiratory diseases.

Provide a balanced nutrition

Provide layers with a diet that is nutritionally complete and balanced. Always ensure access to clean and fresh water. Consider specific dietary needs during various production phases, such as pullet rearing and laying. Prevent contamination by observing feed quality, storage conditions, and feed hygiene.

Vaccination Protocols of Layers Birds

Sr.	Vaccine Name	Recommended Age of Birds	Administration route	Administration site
1	Marek's Disease (MD)	First Day	Subcutaneous	Neck and wing
2	Newcastle Disease Vaccine (NDV)	1 Day old chicken	Eye drop, spray, Drinking water	Oral, Eye, Respiratory
3	Infectious Bronchitis vaccine (IBV)	10-14 Days old chicken	Eye Drop, spray, Drinking water	Respiratory, Eye and Oral
4	Avian Influenza Vaccine	Prevalence Time	Intramuscular, subcutaneous	Neck and breast muscle
5	Egg Drop Syndrome Vaccine (EDS)	14 weeks old	Intramuscular, subcutaneous	Neck and breast muscle

Vaccination against Marek's disease is administered within the first few days of life. It protects against the virus that causes Marek's disease, which impacts the nervous system. Vaccination against Newcastle disease is administered within the first week of life. Vaccines against infectious bronchitis are administered between 10 and 14 days of age. Coronaviruses cause contagious bronchitis, an infectious respiratory disease. Vaccines against avian influenza are distributed according to risk assessment and regional prevalence of bird flu. It protects against avian flu, a virus that can cause severe respiratory illness in poultry. Around 14 weeks of age, the egg drop syndrome (EDS) vaccine was administered. It prevents EDS, a viral disease that causes egg production and quality decline [3].

4. Conclusion

Disease management requires flock performance, health and monitoring. Early disease detection and treatment are possible. Assessing biosecurity, hygiene, nutrition, and vaccination protocols improves them. Assessment-based management optimizes disease prevention and control. A poultry vet should create vaccination schedules. A veterinarian can recommend vaccine timing and administration based on local disease risks. They manage flock health and disease outbreaks. Regular vet visits ensure vaccination programs are effective and tailored to broiler or layer operations. Biosecurity, hygiene, nutrition, and vaccination protocols can improve flock health productivity profitability for broiler and layer producers. Poultry flocks need regular monitoring, adaptation, and veterinary care.

References

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