

Review Article

Biosecurity: A Managerial Factors in Disease Prevention and Poultry Production

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ABSTRACT

Keywords

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Biosecurity is one of the integral part of poultry production for export of poultry and poultry products implementation of food safety measures from farm to fork and prevention and control of emerging diseases such as avian influenza and salmonellosis in the need of the hour since poultry products are human food. Emerging disease of poultry and food safety implications are of global significance. Therefore, periodical laboratory evaluation of sanitary status is a must.

Introduction

Bio security is a set of preventive measures designed to reduce the risk of the transmission of infectious disease quarantined pests invasive alien species living modified organism. Biosecurity is a term we have come to hear frequently in recent years and can canjuri up images of surveillance systems, security fences, complicated sanitizing processes. However Biosecurity is really just the projection of livestock and poultry from any type of infectious agent whether bacterial, fungal or parasitic people, animal and equipment can spread disease as they move around the farm.

Effective disease prevention reduces emergency disease such as avian influenza. Newcastle disease and duck plague. These diseases causes edidemics on poultry farms.

Definition

Biosecurity : embodies all cumulative measures that can or should be taken to keep disease (Viruses, bacteria, Fungi, Protozoa and parasites) from a farm and to prevent the transmission of diseases (by humans, insects, rodents wild birds/animals) within infected farm to neighboring farms.

Objective

Optimum biosecurity measures need to be developed and implemented to help disease prevention and control. Biosecurity is a team work and a shared responsibility. The aim of biosecurity is –

- Increased flock health
- Decreased disease spread
- Ensure the production and supply of clean products
- Biosecurity is an investment and not an expense

Advantage

- Prevention of exotic diseases
- Risk of zoonotic diseases
- Limits spread of diseases
- Improves overall poultry health
- Improves production (Meat & Egg)
- Decrease cost of production

Mode of disease spread

- Movement of people, poultry, vehicles and fomits
- Introduction of birds of unknown health status
- Contact with vermin and wild birds/animals
- Poor sanitation

The inclusion of avian pathogen into commercial poultry farm may occur by vertical transmission through a variety of horizontal contacts between persons, vehicles equipments, fomites, feed and water

Component of Biosecurity

- Isolation
- Movement control
- Cleaning and disinfection
- Rodant and insect control

How to enforce biosecurity

To avoid bringing disease to poultry the following guidelines should be –

1. Facility location
2. Human traffic
3. Contaminated facilities
4. Vectors
5. Disposal of dead birds
6. Litter removal
7. Washing and disinfection

Biosecurity for Avian influenza

- Highly pathogenic
- Highly pathogenic avian influenza reported during the period 2003 to 2010
- There is no general prophylactic vaccination against avian influenza
- There will be active multiplication of virulent virus
- Potential pathogenic type of avian influenza strains are H5/H7 and H9
- There is no combined vaccine

Only method for control of avian influenza is

Elevated level of bio-security

- Feed
- Water
- Environment

Feed

To prevent the feed contamination

- Use of formalin at a concentration of 1.5 to 2.5 l per ton of feed
- Use of formalin is approved by EU FOOD SAFETY AUTHORITY
- The efficacy of formalin use can be evaluated by TTC assay every day
- Standard microbiological criteria once a week

Water sanitation

The ideal agents are –

- Acidified sodium chlorite
- Chlorine dioxide
- Per acetic acid

Advantage of above agents is

- Food grade chemo sterilants
- Approved by NATIONAL and

INTERNATIONAL agents

- No residues
- No resistance
- Broad spectrum of activity
- Active against wide pH-4 to 10
- Cost effective

Environmental sanitation

- Clo₂
- Acidified sodium chloride
- Per acetic acid + hydrogen peroxide
- For every 1000 sq ft area of shed use 75% of spray as a fine mist

Biosecurity at gate

Use of acidified sodium chlorite is recommended for personal hygiene/fomites/boots/ dress material etc. either acidified sodium chlorite/ acidified Clo₂ can be used

It can be concluded as the poultry industry is in continuous threat of HPAI, the poultry health management is of great concern in present situation. The journal of Agriculture and Environment Vol:II, Jun 2010, Review paper 124 fifty percent of poultry production is taken by commercial sector. Lack of proper disease recording and reporting system from commercial sector to Govt.

organization. Diagnosis of poultry disease must be given high priority as risk of bird the pandemic. Biosecurity measures should be enhanced to reduce disease outbreak. There must be awareness programme to farmers level to update biosecurity head clean poultry production system will make hygienic food chain and contribute towards improved farm management. Biosecurity will not only maintains the good environment but also minimize infectious and zoonotic disease and subsequently enhance public health.

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