General preventive measures of diseases

Principles

Bird health is of extreme importance in broiler production. Poor chick health will have a negative impact on all aspects of production and flock management including growth rate, feed conversion efficiency, mortality, livability, and processing traits.

The flock should start with day-old chicks of good quality and health. Source the chicks from a minimal number of breeder flocks with similar health status; ideally, 1 source flock per house.

On-farm disease control programs involve:

- Disease prevention
- Early detection of ill health
- Treatment of identified disease conditions

To maximize flock performance by minimizing or preventing poultry diseases and infections of public health concern through good husbandry welfare practices. **Bio-security, vaccination, disease investigation and disease recognition are the main dealing issues to maintain a healthy flock.**

Bio-security is the main tool to exclude infectious diseases from a production site. Maintaining an effective bio-security program, employing good hygiene practices and following a comprehensive vaccination program are all essential to disease prevention. A comprehensive bio-security program involves a sequence of planning, implementing and control. Remember, it is impossible to sterilize a house or the premises. The key is to reduce pathogens and prevent their reintroduction.

General preventive measures of diseases for a healthy flock:

A. Bio –security measures

Key points

- Limit non-essential visitors to the farm. Keep a record of all visitors and their previous farm visits.
- Farm supervisors should visit the youngest flocks at the beginning of the day and working by age to the oldest flock for the last visit in that day.
- Avoid contact with backyard poultry.
- If equipment must come from another farm, it should be thoroughly cleaned and disinfected before it comes onto the farm.
- Provide wheel dips or wheel spraying facilities at the farm entrance and allow only necessary vehicles on site.
- Farms should be fenced.
- Keep doors and gates locked at all times.
- Absolutely no other poultry should be kept on the same farm as your poultry unit. Farm animals other than poultry should be fenced separately and have a different entrance from the poultry farm enterprise.
- No pet or wild animals should be allowed in or around the poultry housing.
- All farms should have a vermin control plan which includes frequent monitoring of rodent activity. Adequate supplies of rodent bait must be maintained. All houses should be vermin proof.
- The area around the poultry house should be free from vegetation, debris and unused equipment that could harbor vermin.
- Clean up feed drops as quickly as possible and fix any leaking feed bins or feed pipes.
- Farms should have toilet and hand washing facilities separate from the poultry house.
- A dedicated changing facility for protective clothing and footwear should be sited at the farm entrance.
- Provide hand-sanitizing facilities at the entrance to each house.
- Provide well-maintained footbaths at the entrance to each poultry house.
- Clean footwear before using footbath to remove organic material, which could inactivate the disinfectant.
- The choice of disinfectant for the footbath needs to be one that has a broad spectrum of activity and be fast acting because of limited contact time.
- Incorporate a boot-change or boot cover system at each entry to the poultry house.
- Single-age broiler farms are highly recommended to reduce the cycling of pathogens.
- Birds should be placed from similar age parent flocks of the same vaccination status.
- Depletion of birds should be completed before arrival of new chicks.
- Catching crews should be provided with protective clothing. Equipment such as coops/ crates and forklifts should be washed and disinfected before entry to the farm, especially if partial depopulation is practiced.

- Adequate down-time between flock placements is essential.
- Clean out all the litter from each house and remove it in covered vehicles
- If litter is re-used between flocks, all damp or caked litter should be removed and heat turned on in time to release any built up ammonia and to encourage drying of litter prior to placement of next batch of chicks; a minimum requirement of 48 hours is suggested.
- Drinking systems and header tank should be drained and flushed with an approved disinfectant before adding cleaning solution.
- Test water at least yearly for mineral levels and microbial quality.
- At the end of each flock remove all the birds from the farm.
- Apply an insecticide where necessary.
- Remove all unused feed from the feed system, including all bins and augers.
- Dry clean any equipment that can not be washed directly and cover it completely to protect it from the washing process.
- The house should be washed from one end to the other.
- Removed equipment should be cleaned first with a detergent and then thoroughly disinfected.
- External areas such as gutters, fan boxes, roofs, pathways and concrete areas should be cleaned.
- Outside concrete areas and ends of the house should be washed completely.
- Staff areas, canteens, changing areas and offices should also be thoroughly cleaned. All footwear and clothing should be given a complete washing and disinfection at this point.
- Apply an effective broad-spectrum disinfectant through a pressure washer with a fan jet nozzle. Thoroughly soak all the interior surfaces and equipment working from top to bottom. Fan boxes, inlets, support beams and posts require special attention.

B. Vaccination program

Programs must be based on veterinary advice adapted to specific local and regional challenges established by health surveys and laboratory analysis. Carefully select single or combined vaccines according to age and health status of flocks. Follow manufacturer recommendations for product handling and method of administration.

Broiler Vaccination Schedule

Age	Disease	Vaccine Name	Route of vaccine
0-3 days	Newcastle (ND) + Infectious Bronchitis (IB)	ND + IB Vaccine	Eye drop/Spray/drinking
10-14 day	Gumboro or Infectious Bursal Disease (IBD)	Gumboro Vaccine	Drinking water
18-20 day	Gumbora (IBD)	Gumbora Vaccine	Drinking water
20-28 day	Newcastle (ND)	ND Vaccine	Drinking water

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- Vaccine should be used accordingly to the instruction of the manufacturers.
- To ensure the potency of vaccine cool chain should be maintained strictly.

Key Points

- Vaccination alone cannot protect flocks against disease challenges and poor management practices.
- Develop vaccination programs for broilers in consultation with trained poultry veterinarians.
- Vaccination is more effective when disease challenges are minimized through well-designed and implemented bio-security and management programs.
- Base vaccination programs on local disease challenges and vaccine availability.
- Every bird must receive the intended dose of vaccine.
- Breeder flock vaccination programs must be factored into the design of an appropriate vaccination program for broiler progeny.

C. Disease Investigation

Disease investigation requires knowledge of what to expect at what age and how to detect what is abnormal for the flock. When health problems are seen or suspected in broiler flocks the following points should be considered.

Key Points

- Seek veterinary advice at the earliest possible opportunity.
- Investigating the cause of disease
- Take care in associating a bacterium or virus isolated from the infected flock as the cause of the disease
- Many non-pathogenic bacteria or viruses may also be isolated from healthy broilers.
- Continuous improvement requires good record keeping and sample collection throughout whole production process.
- It is helpful to keep up-to-date with local and regional health concerns in order to prepare for the unexpected one.
- A systematic approach is helpful when troubleshooting health issues on the farm.

D. Disease Recognition

The recognition of health problems involves several steps.

In diagnosing a disease problem, planning and implementing a control strategy, it is important to remember that the more thorough the investigation, the more thorough the diagnosis and the more effective the controlling actions.

Early disease recognition is critical.

Key Points

- Daily observation
- Accurate recording
- Systematic disease monitoring

Elements of disease exposure

