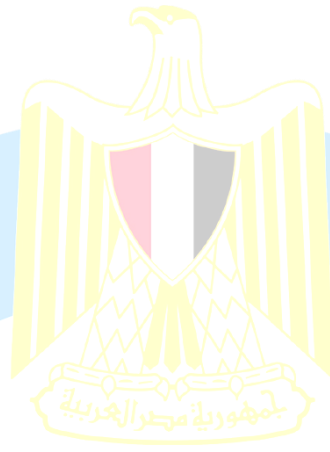




Guideline for medical interventions
Veterinary Medicine
Aquatic Animal Medicine



Biosecurity in Poultry Farms

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Version Code: EHC–VPH–GL–2026–V1

Version: V1 | **Release Date:** 2026 | **Last Updated:** January 2026

Biosecurity in Poultry Farms

Acknowledgement

We would like to acknowledge the committee of the National Egyptian Guidelines for Veterinary Medical Interventions, Egyptian Health Council for adapting this guideline.

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Scope:

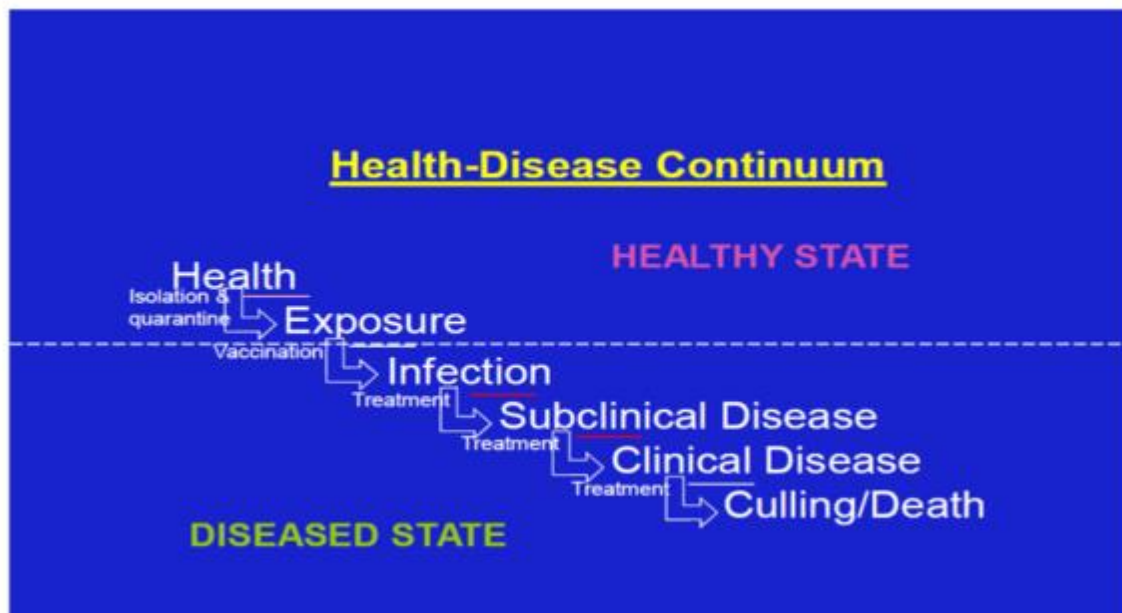
Over the last few decades the poultry industry – supported by technological advances in genetic selection, feed quality, growing methods, processing and marketing – has outstripped all other agricultural commodities in both, developed and developing countries. This is mainly due to poultry being the most efficient protein-producing (meat and eggs) domestic species with the lowest feed conversion ratio. The majority of the small-scale broiler farms and all most backyards were far from the implementation of biosecurity measures. Biosecurity situation needs a combined effort from stakeholders, poultry keepers in (backyard) to improve biosecurity level for these sectors. Biosecurity implementation requires experience throughout awareness, training, known the resources of higher risk and loss of profit

Introduction:

Poultry sectors in Egypt characterized by a huge diversity of production with different scales, bird species, biosecurity measures, production inputs, and outputs. Recently, the commercial poultry sector has encountered considerable and multiple challenges. However, the continuous threats of infectious diseases severely affecting poultry, including Newcastle Disease Virus (NDV), Hyper Virulent Gumboro Disease (IBDV) or Mycoplasma, and in some cases diseases that affect humans, such as H5N1 Avian Influenza (HPAI), Campylobacter or Salmonella, pose a significant economic threat to the industry. Preventing and controlling the incursion of such diseases into poultry farms or the spread of diseases between farms requires the implementation of measures, such as biosecurity, vaccination and preventative medication.

The term “biosecurity” refers to a set of management and physical measures designed to reduce the risk of introduction, establishment and spread of animal diseases, infections or infestations to, from and within an animal population. Biosecurity is the cheapest, most effective means of disease control available. No disease prevention program will work without it.

Purpose:

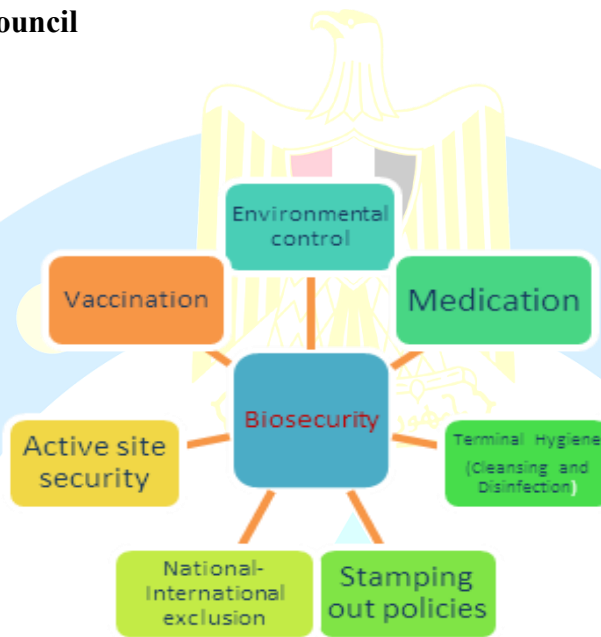


This Guide allows the producer or farm manager the opportunity to assess their current level of on-farm biosecurity. Their answers will provide them with an idea of where there are areas of weakness that require attention or practices that fall below current industry standards. They should develop a plan to address those specific areas that need improvement.

Objectives:

- 1- To prevent the introduction of infectious disease agents to poultry farms.
- 2- To prevent the spread of disease agents from an infected area to an uninfected area.
- 3- To minimize the incidence and spread of microorganisms of public health significance.

It is essential that a risk assessment be conducted for each enterprise to establish what level of risk exists in each phase of its operations and to identify and implement control measures appropriate to these levels of risk.



Major sources for disease and pathogen transmission:

1. **Poultry:** Transfer of birds from production area to production area

- Dead bird disposal

2. **Other animals**

- Wild birds
- Feral and domestic animals, including other livestock and pets



- Insects

- Rodents—rats/mice

- Domestic birds

3. People:

- Farm personnel and family members living on site
- Contractors, maintenance personnel, neighbours, serviceperson, visitors
- Disease can be transmitted by, for example, hands, boots, clothing, and dirty hair

4. Equipment

5. Contaminated premises through soil or old litter



5. Vehicles

6. Air

- Transmission as an aerosol or dust.

7. Water supply:

- Water supplies may become contaminated with feces from contact with avian or other animal species.

8. Feed:

- Feed may be contaminated by the raw materials used, post-production and during transport, or by exposure to rodents and birds on the property. Bacteria and mould in poor quality or damaged feed may also be a concern.

Biosecurity approaches:

A. Conceptual biosecurity

1. It is best to build farm in an isolated area, at least three km away from nearest poultry in the case of breeder farm and 1.6 km in the case of commercial layer and broiler farm.
2. In the case of breeders, the farm should be away from the major road ways that may be used to transport commercial and backyard poultry.
3. Maintain enough distance between breeders and grow-out farms and facilities such as hatcheries and feed mills.

B. Structural biosecurity

1. Fencing of farm perimeter to prevent unwanted visitors. The production area must have a perimeter fence or otherwise well-defined boundary.
2. Sign boards indicating 'Biosecurity area', 'visitors are not allowed' are to be displayed at breeding stocks and hatcheries of each species.
3. The farm should be designed in such a way that it has sufficient ventilation and should have access to sunlight.
4. Foot dips of uniform size must be provided at the entry of all the poultry sheds.
5. Ideally, lay out of the farm should be such that at farm entry point brooder shed should be followed by shed for growers and lastly for adult birds.
6. Hatchery should be located at least 500 ft. away from other sheds.
7. Distance between two different sheds of same type should be 30 ft. and of different type should be 100ft
8. Test water source for minerals, bacteria, chemical contamination and pathogen load.
9. Concrete stage with suitable water and power supply for sanitation of vehicles.
10. Suitable location for storage of bagged feed.
11. All-weather roads within the farm to ease cleaning and to prevent spreading of microbes by vehicles and foot wear.
12. Direction of long axis: This depends on geographical location of the farm .
13. Facility for post-mortem examination near to the incinerators and separate laboratory with suitable facilities and manpower are also required for regular monitoring and surveillance of diseases at the farm level.
14. Safe housing, with suitable wild birds and rodent proofing.
15. Feed, litter and equipment should be stored in a section separated from live bird area to prevent contamination.

16. A three meter boundary of land around the building must be kept free of all vegetation to prevent rodent and wild life activity.
17. There should be single window system for sale of all poultry & poultry products with sale counter at gate. Client and their vehicle should not be allowed in any case to visit farm or hatchery.

C. Operational biosecurity

Encompasses the standard operating procedures (SOPs) that minimize the chance of virus entering the poultry house and compliance with those SOPs.

1. Operation manuals should be developed for day-to-day activities carried out in feed mills, hatcheries, breeding and grow-out facilities incorporating emergency plans.
2. Proper decontamination and disinfection of equipment, houses etc., following depletion of flock.
3. In breeder farms, all visitors and workers require to shower and use clean farm clothes to prevent cross contamination between them.
4. Maintain record for visitors and their purpose.
5. In commercial broiler unit, a minimum inter flock interval of two weeks is recommended.
6. Use an effective integrated pest management program to control pest and rodent through biological, chemical and mechanical means.
7. Appropriate program of disease diagnosis and proper vaccination schedule should be implemented.
8. In small scale egg production unit, follow all-in-all-out system. If it is not possible, pullets should be obtained from a source free of vertically transmitted diseases.
9. Recycling of egg packing materials etc. should be decontaminated at the point of entry of farm.
10. Routine disease monitoring procedures like postmortem examination and periodic serum antibody assay to determine immune status of the flock.
11. Regular culling of unhealthy, unproductive and diseased birds.

Levels of biosecurity:

Level 1- routine biosecurity procedures

These procedures should be implemented and followed on a daily basis. They give a high degree of assurance that diseases and pathogens will not be carried into poultry production areas and will reduce the risk of transmission between production areas. These should be seen as a minimum requirement.

Action plan for suspected emergency animal disease

Each owner must establish and document clear guidelines regarding the circumstances when an emergency animal disease alert should be raised (e.g. an unusual increase in mortality or drop in production), and who must be informed.

Level 2- high risk biosecurity procedures

In the event of an outbreak of an emergency disease or serious endemic disease, high risk biosecurity procedures will be implemented.

Zones on Farm

Controlled Access Zone (CAZ)

The area around the house (s) that includes the feed and fuel tanks with a clearly identified entry point that can be closed if necessary. The CAZ should extend at least 15 meters from the barn in all directions.

Restricted Area (RA)

The defined area inside the barn that is clearly identified by a physical barrier. The area must at least include the production area. Farmers must be able to control access to the restricted area (locked door, alarm, etc).

Maximum Security Practices

Infected Zone

The area in a 3km radius from the infected premise (s). All susceptible species in the zone are under quarantine. There is the possibility of a pre-emptive cull in all or a portion of the zone but will depend on the disease, proximity of farms, and chance of spread. The radius is adjusted to geography, epidemiology, climate, and resources to control the epidemic.

Restricted Zone

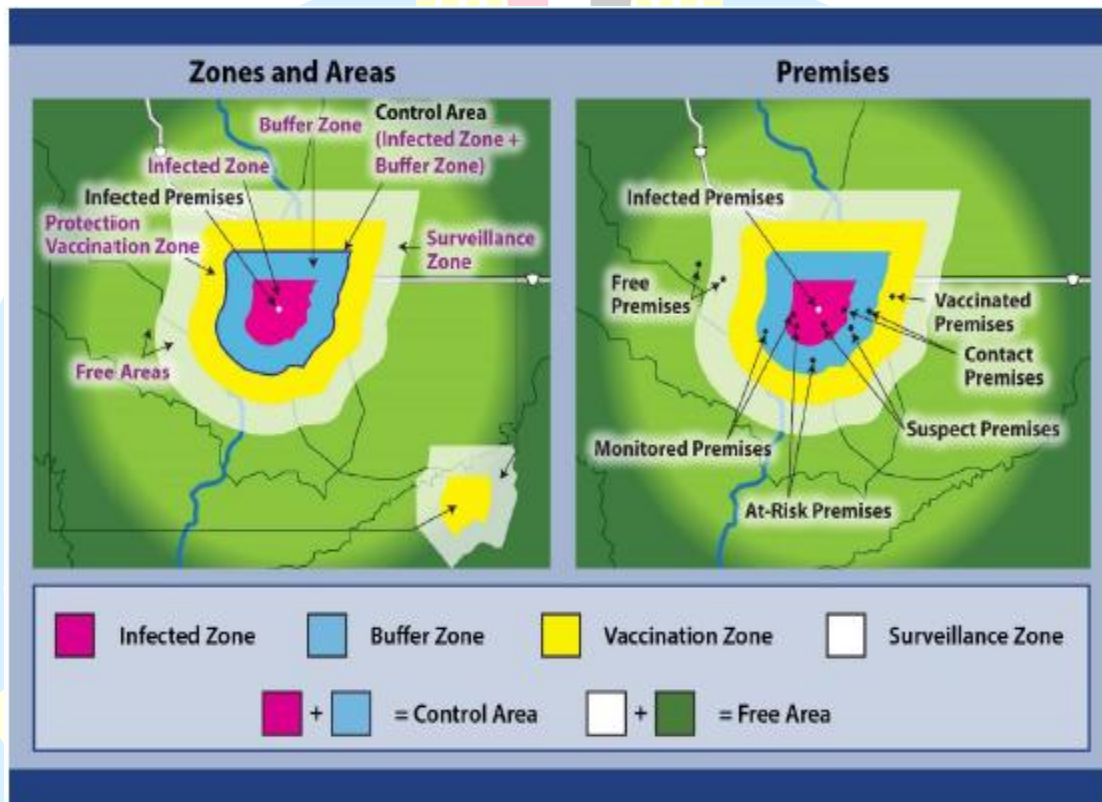
The area from the edge of the infected zone in a 10 km radius from the infected premise(s) for most diseases. It could extend as far as 60 km depending on the disease, method of spread, epidemiology, climate, geography, etc. Enhanced surveillance activities are in effect.

Security Zone

Includes the area between the restricted zone and the boundary of the control area.

Control Area

The area within which movement restrictions apply. It includes the infected, restricted, and security zones.

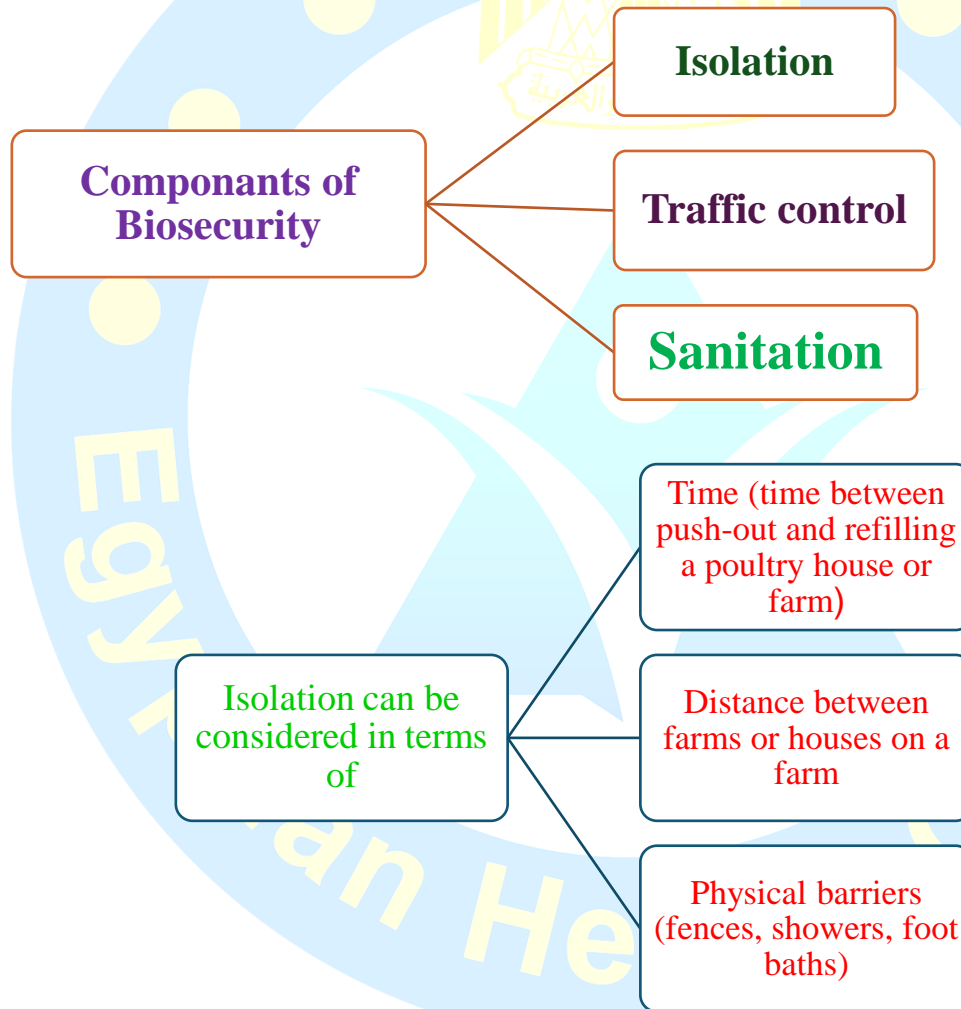


Zone/area	Definition
Infected Zone (IZ)	Zone that immediately surrounds an Infected Premises.
Buffer Zone (BZ)	Zone that immediately surrounds an Infected Zone or a Contact Premises.
Control Area (CA)	Consists of an Infected Zone and a Buffer Zone.
Surveillance Zone (SZ)	Zone outside and along the border of a Control Area. The Surveillance Zone is part of the Free Area.
Free Area (FA)	Area not included in any Control Area. Includes the Surveillance Zone.
Vaccination Zone (VZ)	Emergency Vaccination Zone classified as either a Containment Vaccination Zone (typically inside a Control Area) or a Protection Vaccination Zone (typically outside a Control Area). This may be a secondary zone designation.

An animal disease outbreak may involve six types of premises: 1) Infected Premises (IP); 2) Contact Premises (CP); 3) Suspect Premises (SP); 4) At-Risk Premises (ARP); 5) Monitored Premises (MP); and 6) Free Premises (FP). If emergency vaccination is used, there will be a seventh type, Vaccinated Premises (VP).



Management factors in disease prevention (Components of biosecurity)



1- Isolation:

The principle of isolation refers to the confinement of animals within a controlled environment. A fence keeps your birds in, but it also keeps other animals out. Isolation also applies to the practice of separating birds by age group. In large poultry operations, all-in/all-out management styles allow simultaneous depopulation of facilities between flocks and allow time for periodic clean-up and disinfection to break the cycle of disease.

A- Time (time between push-out and refilling a poultry house or farm).

1. There should be ample time separating succeeding flocks on a premise to prevent the transmission of disease agents.
1. How long a house should be out of production? Depends on the risk to the new birds of becoming infected.
 1. Some disease causing agents will persist in the environment longer than others.
 2. All-in/all-out management allow simultaneous depopulation of facilities between flocks and allow time for periodic clean up and disinfection.

B- Distance between farms or houses on a farm.

1. Restrict access to your farm and your birds.
1. Consider fencing off the Area where your birds are to form a barrier between clean and dirty areas. The clean area is the immediate area surrounding your birds. The Dirty area must be considered infected with germs. A fence keeps your birds in, but it also keeps other animals out.

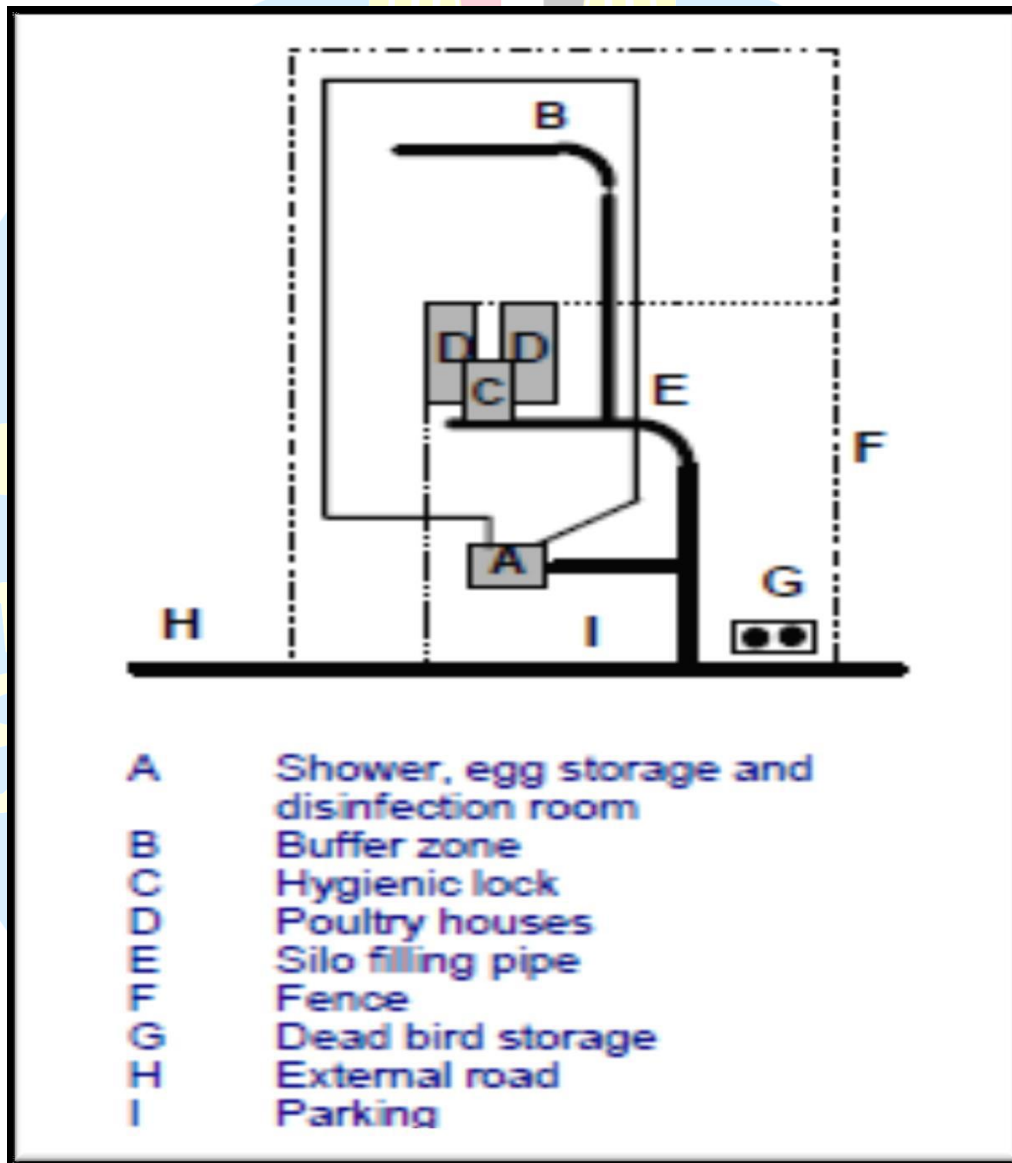
Isolation also applies to the practice of separating birds by age group.

* Allow only people who take care of your birds to come into contact with them and prevent visitors. If visitors have to gain access to your farm, be sure that they wash up first and clean their shoes.

1. Game birds and migratory waterfowls should not have contact with your flock because they carry germs and diseases.
2. The direction of prevailing winds and upstream contamination of any water on the premise should be considered when determining risk.

C- Physical barriers (fences, showers, foot baths)





Barriers are very effective at limiting the spread of pathogens. Securing buildings, removing feed and harborage for pests, including stagnant water, and tall grasses will help to create a barrier around the flock.

1. Vertebrate vector control programs should focus on the control and exclusion of rodents and free-flying birds from the poultry house
2. Invertebrate vector control should focus on abatement from the poultry house and the immediate surrounding environment.
1. Barriers should be created to prevent the carriage of disease agents into poultry houses by humans. Disease agents are carried on clothing, hair and footwear.

1. A boot dipping station that includes a brush and a dip with a disinfectant agent can prevent the entry of disease agents on boots. Disinfectants in boot dips should be changed daily.
1. Every flock should have its own equipment.

Approved Signage:

Approved restricted access signs shall be posted at all barn entrances.

The barn entrance is a high disease transmission risk area and is the last line of defense in preventing disease transmission. It is therefore appropriate to post signs to limit non-essential access.

Guidelines:

- a. Entrance signs will identify that the area beyond the entrance is a restricted access zone.
- b. Entrance signs must be readily visible, clean and legible.



II- Traffic control:

Includes both the traffic onto your farm and the traffic patterns within the farm. People and equipment that come onto poultry facilities can mechanically carry with them many potentially devastating diseases.

Included in this group:

- 1- Feed delivery trucks and their drivers.
- 2- Vector control personnel.
- 3 -Hatchery trucks and drivers.
- 4- Transport trucks and drivers.
- 5- Veterinarians and other consultants.
- 6- Visitors such as school tours.
- 7- Utility personnel and equipment repairmen
- 8- Curious or lost people.

1. For controlling traffic coming onto the farm:

- 1- Direct the flow of on-farm traffic from youngest to the oldest birds. Direct the traffic flow from resident to the isolation area. Provide the gates with wheel baths containing a suitable disinfectant.
- 2- To control human traffic, it is more effective to use signs which must be clear and posted in areas where people can notice them. Fencing and gates can help to prevent wandering into areas of the farm.
- 3- Establish a “clear zone” Free of vegetation around the farm to discourage rodent and Insect from approaching the buildings.



4- Clothing should be provided for visitors of the farm. Coveralls that cover all street clothing and plastic or rubber boots that cover visitor shoes should be worn.

Visitors should be asked to completely clean and disinfect hands before entering the farm.

5- People, who have been to other poultry farms should be turned away from the farm.



Wheel dip



Vehicle disinfection

III- Sanitation:



This addresses the disinfection of materials, people and equipment entering the farm and the cleanliness of the personnel on the farm. The goal of farm sanitation is to maintain a healthy environment for the chicken flock. It reduces. It can be achieved by:

- III. a. Daily removal and disposal of dead birds to prevent contact with insects, rodents or animals that might present in the farm.
- III. b. The area around poultry sheds should be kept clean from vegetation, food waste and litter.
- III. c. Water Testing should be done at regular intervals.
- III. d. Proper ventilation with adequate air flow in all sheds is recommended.
- III. e. Feeding pans and drinking equipment used in the shed area should be kept clean daily
- III. f. Scrubbing should be done and then application of hot water followed by disinfection with an effective disinfectant.
- III. g. Poultry equipment such as egg crates, cages, shovels or rakes, should not be shared between family or neighboring farms. Plastic or metal equipment may be preferred over wooden material.
- III. h. Clean feeders and waterers daily.

Cleaning

- Dry clean all surfaces before entering the cleaning/disinfection area.

- o Scrape/dry brush to remove all visible dirt and organic matter.
- Wash all surfaces and rinse within the identified cleaning/disinfection area.
- o Wash items thoroughly with detergent using a soft brush, cloth or sponge.
- o Rinse items with clean water.
- o Contain runoff water. Do not allow runoff water to drain into other water sources or into “clean” uncontaminated areas.
- o Allow items to dry prior to disinfection.

Disinfection

Why is disinfection important?

Because by reducing pathogen numbers, we can reduce the potential for diseases to occur in our poultry flocks . Cleaning prior to disinfection exposes the pathogens to the disinfectant.

What disease agents should we be concerned about?

Viruses, bacteria, fungi and parasites. It is important to identify the pathogens we want to eliminate, as certain disinfectants are ineffective against certain disease agents.

How do I disinfect my premises?

Prepare fresh solutions of the disinfectant of choice according to the product label to ensure efficacy.

Apply disinfectant solution to all surfaces with a low pressure sprayer, or by wiping, or immersing the items in the solution.

Use high pressure sprayers with caution to avoid further spread or aerosolization of the disease agent.

Ensure all areas are covered thoroughly with the solution and remain “wet” throughout the necessary contact time; reapply if necessary.

Rinse and Dry

Rinse thoroughly with clean warm water – rinsing is essential as detergents or disinfectants dried on components may cause deterioration of rubber or metal parts if not completely removed.

Allow items to air dry.

How do I choose a disinfectant?

1. Efficacy (germicidal power of the disinfectant)
2. Activity against the organic matter
3. Toxicity to man and animals

4. Residual activity
5. Effect on fabric and metals
6. Solubility in water (acidity, alkalinity, pH)
7. Contact time.
8. Temperature
9. Cost.

The main types of disinfectants that can be used

1. Aldehydes (i.e., formalin, formaldehyde and glutaraldehyde).
1. Chlorine –releasing agents (i.e., sod. Hypochlorite, chlorine dioxide, and chloramine).
1. Iodophors (i.e., povidone-iodine).
1. Phenols and bis-phenols (i.e., triclosan and hexachlorophan)
1. Quaternary ammonium compounds.
1. Peroxygens (H_2O_2 and peracetic acid).

How susceptible are the microorganisms to various disinfectants

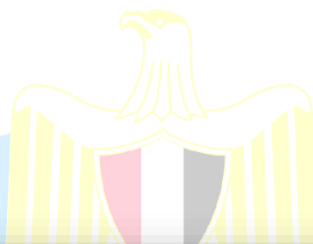
The descending order of resistance of disease agents is:

- 1-Cocccial oocyst.
- 2- Spores (i.e. clostridial diseases) and acid-fast bacteria (i.e., Mycobacterium avium).
- 3- Gram-negative bacteria (i.e., Pseudomonas, E.coli, Salmonella).
- 4- Fungi (i.e., Candida and Aspergillus).
- 5- Non-enveloped viruses (i.e., enterovirus & adenovirus)
- 6- Gram-positive bacteria (i.e., Staph aureus).
- 7- Lipid enveloped viruses (i.e., Avian influenza virus)

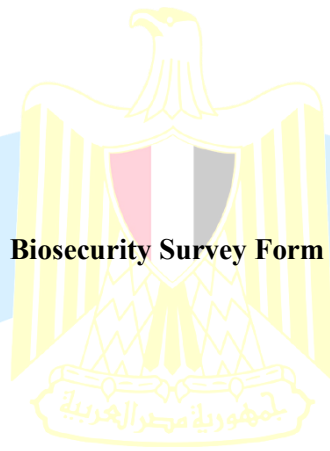


Disinfectant selection table

Compound	Chlorine 0.01-5%	Iodine Iodophor 0.5-5%	Chlorhexidine 0.05-0.5%	Alcohol 70-95%	Oxidizing 0.2-3%	Phenol 0.2-3%	QATS 0.1-2%	Aldhyde 1-2%
Examples	Clorox	Tincture/P rovodine	Novalsan		VirkonS	Lysol	Roccal-D	Wavicide
Bactericidal	good	good	Very good	Good	Good	Good	Good	Very good
Virucidal	Very good	Good	Very good	Good	Good	Fair	Fair	Very good
Envelope viruses	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non envelope viruses	Yes	Yes	No	No	Yes	No	No	Yes



Compound	Chlorine 0.01-5%	Iodine Iodophor 0.5-5%	Chlorhexidin c 0.05-0.5%	Alcohol 70-95%	Oxidizing 0.2-3%	Phenol 0.2-3%	QATS 0.1-2%	Aldehyde 1-2%
Bacterial spores	Fair	Fair	Poor	Fair	Fair good	Poor	Poor	Good
Fungicidal	Good	good	Fair to good	Fiar	Fair	Good	Fair	Good
Protozoa	Fair	Poor	Poor	Poor	Poor	Poor	Fair (amonia)	Good
Effective in organic matter	Poor	Fair	Fair	Fair	Poor	Good	Poor	Good
Effective in hard water	Yes	no	Yes	Yes	Yes	Yes	No	Yes
Contact time (minutes)	5-30	10-30	5-10	10-30	10-30	10-30	10-30	10-600
Residual activity	Poor	Poor	Good	Fair	Poor	Poor	Fair	Fair



Biosecurity Survey Form

Appendix:

General Information:

Name of Farm: _____

Type of Operation: _____

Breed: _____

Population on Farm: _____

Sex: M _____ F _____

Ages: M _____ F _____

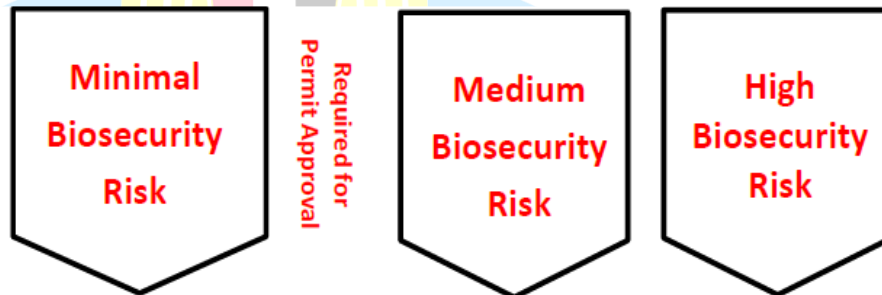
Description of Operation (Layout): _____

Governorate: _____

Vaccination Status: _____



GENERAL INFORMATION



Location

1	Proximity of poultry to public road	Greater than 100 yards		50 -100 yards	Less than 50 yards
2	Proximity to nearest unrelated commercial poultry operation	Greater than 2 miles		1/2 mile to 2 mile	Less than 1/2 mile
3	Number of commercial poultry farms within ½ mile	None		1	More than 1
4	Proximity to nearest backyard poultry	Greater than 2 miles		1/2 mile to 2 mile	Less than 1/2 mile
5	Number of known backyard poultry flocks within ½ mile	None		1	More than 1
6	Proximity of nearest body of water (pond, stream, slough) to poultry houses	Greater than 100 yards		50 -100 yards	Less than 50 yards
7	Proximity to nearest waterfowl sanctuary or colony	Greater than 10 miles		1 mile to 10 miles	Less than 1 mile
8	Proximity of nearest bird colony/nesting site (e.g. raptors)	Greater than 1 mile		400 yards to 1 mile	Less than 400 yards
9	Proximity to nearest landfill	Greater than 10 miles		1 mile to 10 miles	Less than 1 mile



Minimal



Medium



High



Premises Entry/Security

10	Perimeter Fencing And Gates	Complete Perimeter Fence present. Driveway is gated and always locked or guarded	★	Perimeter fencing and gate present, but not always locked or guarded. Or fence not complete	There is no perimeter fencing or gate
11	Biosecurity Signage	Multilingual signage readable from road is posted at all possible points of entry	★	Multilingual biosecurity signage not found at all possible points of entry	No biosecurity signage or signage only in English
12	Farm Signage	Multilingual signage posted on and around farm	★	Biosecurity signage posted on and around farm in English only	No biosecurity signage
13	Vehicle Entry and Disinfection	Freshly stocked vehicle disinfection station with high pressure sprayer at the gate for all vehicles	★	Inadequate vehicle disinfection station	No vehicle disinfection station or not used
14	Entry Driveway Materials	Paved with no potholes		Gravel	Dirt
15	Vehicle Parking	Designated parking area is paved and clearly identified outside the perimeter fence		Parking area is paved and clearly identified inside the perimeter fence	There is not a designated parking area
16	Vehicle Flow	Designated one way traffic onto premises and off premises		Vehicles can cross paths going both directions but enter and exit through designated road	No designated traffic flow on or off the premises, through any possible road
17	Clean and dirty areas at entry to premises	Clearly defined, visible, and maintained clean/dirty line		Inadequate/intermittent use	No clean/dirty line



People Entry/Personnel Biosecurity (Employees, vaccination crews, beak trimming crews, truck drivers, etc.)

Recording of ALL people entering the farm premises (All employees, delivery drivers, and visitors are required to sign premises logbook):

Logbook information requirements are:

- Name
- Company
- Vehicle license plate
- Record of C&D of vehicle
- Date and time of entry and departure
- Statement confirming no contact w/bird premises or rendering activities during the preceding 2 days
- Contact telephone number

18	Employees	Yes	★	N.A.	No
19	Employee family members	Yes	★	N.A.	No
20	Poultry haulers (live and dead poultry)	Yes	★	N.A.	No
21	Egg truck drivers	Yes	★	N.A.	No
22	Feed truck drivers	Yes	★	N.A.	No
23	Veterinarians	Yes	★	N.A.	No
24	Consultants and sales personnel	Yes	★	N.A.	No
25	Inspectors	Yes	★	N.A.	No
26	Vaccination/ beak trimming/insemination crews	Yes	★	N.A.	No
27	Utility repairmen/meter readers	Yes	★	N.A.	No
28	Mail courier (e.g. UPS, FedEx)	Yes	★	N.A.	No
29	Garbage/waste collector	Yes	★	N.A.	No
30	Pest control professional	Yes	★	N.A.	No
31	Electricians/plumbers/carpenters	Yes	★	N.A.	No
32	Other? (List here): _____ _____	Yes	★	N.A.	No

Minimal

Medium

High



33	Unnecessary visitors (not there for farm operation)	Unnecessary visitors are prohibited from entry onto the farm	★	Unnecessary visitors may visit but must wear dedicated or disposable clothing provided by the farm and must wash hands and eyeglasses	There is no restriction on who may enter the farm
34	Sharing of personnel	Personnel are dedicated to work on this farm only and not shared with any other farm or off-site facility	★	Personnel are shared between this farm and other farms of this same company, but not with any off-site facility	Personnel are shared between this farm and a farm of another company, or shared with an off-site facility
35	Personal Protection Policy	Shower in policy with disposable or dedicated clothing and footwear before entry	★	Disposable or dedicated clothing and footwear and required washing/disinfecting of hands before entry (no shower-in policy)	Personnel lack disposable or dedicated clothing and footwear and/or do not practice washing/disinfecting of hands before entry
36	Personal effects (e.g. cellphones, wallets, etc.)	Personnel not allowed to bring personal items onto the farm	★	Personnel bring personal items onto the farm, but must leave them in a designated locker or break room where handwashing is required upon leaving	Personnel bring personal items onto the farm unrestricted
37	Spent Hen Removal Crews	Prohibited from entering other chicken houses or egg processing areas	★	N/A	Not prohibited from entering other chicken houses or egg processing areas
Employee and visitor direct/indirect exposure to birds and bird products:					
38	At home	No exposure to birds of any kind	★	Individuals may own birds, but must not have direct exposure to birds within 48 hours	No restrictions on bird contact
39	Feed stores/pet stores	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
40	Swap Meets	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds

Minimal

Medium

High



41	Live Bird Markets	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
42	Fairs (bird exhibit areas)	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
43	Zoos (bird exhibit areas)	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
44	Vet clinics	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
45	Neighbors and friends backyard birds	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
46	Cockfights	No contact with other birds within 72 hours prior to entry		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
47	Bird hunting or fishing	No contact with other birds within 72 hours prior to entry; hunting clothes and gear not permitted on farm premises		No contact with other birds within 48 hours prior to entry	No restrictions on contact with other birds
48	Utility repairmen and meter readers	Are not allowed to visit another poultry facility within 72 hours, and may only enter poultry areas with dedicated clothing and footwear and clean equipment		Are not allowed to visit another poultry facility within 48 hours, and may only enter poultry areas with dedicated clothing and footwear and clean equipment	No restrictions
49	Policy for service crews and Veterinarians	Clean clothing and footwear dedicated only for this ranch and have required downtime of 72 hours between visits to different poultry ranches		Clean clothing and footwear dedicated only for this ranch and have required downtime of 48 hours between visits to different poultry ranches	No restrictions
50	Drivers of hauling or delivery trucks	Do not leave the truck cab while farm employees load or offload deliveries, away from poultry houses whenever possible	★	Leave the truck cab, but must put on disposable outerwear and footwear (or booties), wash hands and eyeglasses	Help load and unload while wearing street clothes, sometimes near poultry houses


 Minimal


 Medium

 High



				before helping load or unload, away from poultry houses when possible	
51	Housing of employees, their families, and others	No housing onsite (within fence perimeter or adjacent to poultry facility) of employees or others		Onsite housing of employees only	Onsite housing of employees and their families (including children), or other people
52	Other businesses on the premises	No other businesses on the premises		No other businesses on the premises within the security perimeter fence	Another business on the premises allowing for traffic of people on and off
53	Rendering Plants Policy	Farm policy requires personnel who have visited a rendering plant to shower and change clothes before entering the farm or any of its buildings	★	N/A	No farm policy for personnel who have visited a rendering plant prior to entering farm

 Minimal

 Medium


 High



Poultry Houses

54	Distance Between Houses	At least 30 yards between poultry houses		15-30 yards between poultry houses	Less than 15 yards between poultry houses
55	Barn Vent and Fan Exhaust Maintenance	Done periodically to eliminate nesting birds and other vermin when observed		Done once a year	Maintained only during downtime (between flocks)
56	Clean and dirty areas in poultry house entry	Clearly defined, visible, and maintained		Inadequate/intermittent use	Not defined
57	House entrance surface	Each house entry/exit has a cement pad/metal grate		Each house entry/exit has a wooden pallet or other similar hard surface, or gravel	Each house entry/exit is dirt
58	Entry and Exit Footbath Disinfectant Refreshing Frequency	Footwear is scrubbed clean and then spray disinfected (disinfectant is always kept stocked)		Footbaths are used (changed daily or when visibly soiled)	Footbaths not used or seldom changed
59	Clothing and Footwear Requirements	Each house has its own designated outerwear and dedicated footwear (Disposable or freshly laundered)		Designated outerwear is only available in one area on the premises	Designated outerwear is not available
60	Watering system	Drinkers and watering system are protected from wild bird and vermin access	★	N.A.	Drinkers and watering system are not protected from wild bird and vermin access
61	Poultry Access to Outdoors	No access to outdoors		N.A.	Full access to outdoors or some loose or stray poultry seen inside the poultry houses
62	Housing Type/Construction	Closed house	★	Modified open sided with curtains	Open-sided

 Minimal

 Medium

 High



Pests, Wildlife, and Domestic Animals

63	Wild bird presence (especially wild ducks, geese, swans, egrets, herons, crows, pheasants, quail, chukars, wild turkeys)	Wild birds have not been seen landing on or feeding on the premises	★	N.A.	Wild birds have been seen landing on, defecating on, or feeding by the poultry houses
64	Wild Bird Access	Building design restricts wild bird access and no evidence of wild birds	★	Occasional sightings of wild birds flying through poultry houses, but are immediately removed and bird entryways are fixed/patched	Building design allows open access to wild birds and these are often found nesting inside poultry houses or along perches on immediate exterior of houses
65	Spilled Feed	Feed storage containers covered and feed spills are cleaned up immediately, and not fed to poultry	★	Feed storage containers and delivery systems covered but spills not immediately cleaned up, but not fed to poultry	Feed storage containers and delivery systems not covered and spills not cleaned up; or spilled feed fed to poultry
66	Standing Water, Ponds, or other water bodies on Farm	Water not allowed to pool or stand for more than 48 hours		Water not allowed to pool or stand for more than 72 hours	Allow standing water and/or ponds on the farm
67	Wild Bird Deterrents (e.g. scare devices)	Often utilized, maintained and moved around		Occasional use	Never used
68	Other poultry kept on premises aside from the primary production species (e.g. Domestic ducks, geese, gamebirds, fancy chickens, or game fowl, etc.)	Other poultry types are not kept on the premises		N.A.	Other poultry types are kept on the premises
69	Other birds (non-poultry) kept on premises (e.g. finches, parrots, budgies, etc.)	Other birds (non-poultry) are not kept on the premises		N.A.	Other birds are kept on the premises
70	Rodent Control Program	Routine weekly rodent control and monitoring in poultry houses and feed storage areas		Rodent control used, but no monitoring	No rodent control or monitoring
71	Vegetation/Harborage Areas	Frequent trimming/removal of vegetation areas from		Infrequent trimming/removal of vegetation areas	No trimming/removal of vegetation


Minimal

Medium

High



		the within 3 yards of the barns		within 3 yards of the barns	areas within 3 yards of the barns
72	Fly Control Program	Routine weekly fly control and monitoring and no evidence of flies		Flies are controlled, but no monitoring and evidence of flies	no fly control or monitoring
73	Other Animal Access (e.g. dogs, cats, livestock, or wildlife)	Other animals are restricted from this premises	★	Other animals are restricted from poultry houses, feed storage areas, and dead bird storage	Other animals are seen in poultry houses

 Minimal

 Medium

 High



Truck Traffic (Feed, Poultry Haulers, Dead Bird Haulers, Garbage pick-up)

74	Driver's	If multiple stops drivers should not leave cab of truck or have proper PPE & must not enter poultry houses	★	N/A	Drivers leave cab of truck, lack proper PPE & enter poultry houses
75	Gate Entry Protocol	All trucks are inspected at the gate and all work is observed to enforce biosecurity		All trucks are inspected at the gate, no biosecurity follow-up	Trucks are not met or inspected at the gate
76	Cleaning and Disinfection Protocols	All truck wheels, wheel wells, and undercarriage are washed, sanitized and inspected for cleanliness before entering and exiting the premises.		Only trucks belonging to other companies have wheels and wheel wells are washed, sanitized and inspected for cleanliness before entering and exiting the premises.	No cleaning or disinfecting
77	Shared Trucks	No sharing of trucks with other farms		Sharing of trucks only with farms of the same company	Sharing of trucks with farms of a different company
78	Feed Delivery Site	Feed truck delivers feed from outside the perimeter		Feed truck goes on-farm to deliver feed	Feed truck goes on-farm to deliver feed and must access the poultry house(s)
79	Dead Haul Truck Access	Dead haul trucks never enter the premises, but collect from bins outside perimeter fence		Dead haul trucks collect from bins inside perimeter fence	Dead haul trucks collect from bins near poultry houses
80	Garbage Truck Access	Garbage pick-up is outside the perimeter fence		Garbage pick-up is inside the perimeter near the gate and tires and wheel wells cleaned and disinfected	Garbage pick-up is inside the perimeter near the poultry areas
81	Pullet hauling trucks	Pullet trucks are cleaned and disinfected before allowed onto farm and pullets are offloaded only by this farm's personnel while the driver remains inside the cab		Pullet trucks are cleaned and disinfected before allowed onto farm and pullets are offloaded with the help of the driver (wearing disposable coveralls and boots,	Pullet trucks are not cleaned and disinfected before allowed onto farm; pullets offloaded by hauler and/or other nonemployees of this farm

Minimal


Medium

High



				discarded in bin at the exit)	
82	Manure Trucks	Never go from one poultry farm to another on the same day	★	N/A	Visit multiple farms on the same day
83	Manure, egg shells, and animal material from other premises	These materials are not allowed onto the premises		These materials are allowed only after heat treated or composted to kill any virus/bacteria	These materials are allowed onto the premises untreated

 Minimal


 Medium


 High



Tools and Equipment

84	Tools and Equipment Entering/Exiting Farm	Tools and equipment are cleaned and disinfected before entering/exiting the farm	★	Tools and equipment are cleaned and disinfected before use but not when entering.	Tools and equipment are not cleaned or disinfected upon entry/exit
85	Sharing of equipment (e.g. composting/ cleaning equipment, manure machines, etc.)	Equipment is not shared with other farms		Equipment is shared only with farms of this same company	Equipment is shared with farm(s) belonging to different companies
86	Tools and Equipment Use on Farm	All tools and equipment are cleaned and disinfected when moved between farm buildings		All tools and equipment are cleaned, but not disinfected when moved between farm buildings	Tools and equipment are not cleaned or disinfected when moved between farm buildings
87	Tool and Equipment Maintenance	Farm maintains and repairs its equipment onsite		Repairmen coming onto the farm to repair equipment wear dedicated or disposable clothing and boots/boot covers and wash their hands prior to entry	Farm sends equipment off-site for maintenance or repairmen not wear dedicated or disposable clothing
88	Tools and Equipment C&D	After C&D are protected to prevent exposure to wild birds		Are C&D but not protected to prevent exposure to wild birds	Are not C&D or protected to prevent exposure to wild birds
89	Transport cages (pullets, spent hens, etc.)	Always cleaned and disinfected on/off the farm		Always cleaned, but not disinfected on/off the farm	Not cleaned or disinfected on/off the farm
90	Chicken Transport Equipment after depop	Equipment is C&D at a non-bird containing premises	★	N/A	Equipment is C&D at poultry premises

 Minimal

 Medium

 High



Cleaning and Disinfecting

91	Cleaning Protocols	Soap and hot water are used to remove visible organic material before disinfectant is applied		N.A.	Organic material is not removed prior to applying disinfectant
92	Disinfectant Selection	Disinfectants are selected based on label claims and minimally affected by organic matter		N.A.	Disinfectants are not selected based on label claims that are effective against HPAI and highly affected by organic matter
93	Disinfectant use	Disinfectants are replaced after expiration date and used according to label with appropriate concentration and changed before it loses potency.		Use of expired disinfectant or improperly mixed disinfectant	Not using disinfectant
94	Footwear Disinfection Stations	Footwear disinfection is set-up entering/exiting and around farm in various locations other than just chicken houses		N/A	Footwear disinfection is not set-up for use
95	Water Source for "wet cleaning"	Deep well treated or municipal		Deep well untreated	Surface water
96	High pressure sprayer	Always use a high pressure disinfectant sprayer		Use a high pressure disinfectant sprayer some of the time	Don't have a high pressure sprayer

Minimal

Medium


High



Carcass/Manure/Garbage Storage

97	Disposal method of dead birds	Onsite composting, burial, or cremation (if permitted)		N.A.	Rendering truck hauls dead birds
98	Dead Bird Storage Site	Secure covered bins stored greater than 100 yards from poultry houses and located outside the perimeter fence		Secure covered bins located inside the perimeter fence near the front gate	No bins or uncovered bins accessible to scavengers stored near poultry houses
99	Manure/Litter Handling	Treated before leaving the farm		N.A.	Not treated before leaving the farm

 Minimal

 Medium

 High



Flock Health

100	Surveillance	Routine use of State laboratory (CAHFS) and/or an approved company laboratory for monitoring flock health by serology and dead bird submissions		Dead bird submission to laboratory only in case of increased mortality	Visual surveillance with no laboratory use
101	Bird Observation	Birds are monitored daily		Birds monitored sporadically	Birds not observed
102	Record keeping	Poultry production, feed consumption, and mortality records are maintained reviewed daily	★	Poultry production, feed consumption, and mortality records are kept, but not reviewed daily	Poultry production, feed consumption, and mortality records are not kept
103	Vaccine/ Medication Storage	Vaccines/ Medications are recorded, stored and handled according to label Expiration dates reviewed periodically		N.A.	Vaccines/ Medications not recorded, not stored and handled according to label Expiration dates not reviewed periodically
104	Sequence of bird inspections/vaccinations	Birds are visited in the following order: youngest to oldest and healthy to sick birds		N.A.	No sequence control of handling birds
105	Flock Movement &/or Management	All-in and all-out for whole farm management is strictly practiced		Multi-age farm but individual houses are all-in and all-out	Multi-age houses
106	Primary Drinking Water Source	Deep well treated or municipal		Deep well untreated	Surface water
107	Water Consumption	Daily water consumption is recorded	★	N.A.	Daily water consumption is not monitored or recorded
108	Source of Birds	Birds are acquired from NPIP certified primary or multiplier breeders and hatcheries	★	N.A.	Birds are acquired from non-NPIP certified breeders and hatcheries
109	Dead Bird removal	Dead birds are removed from the houses daily and placed in secure covered containers away from poultry houses	★	Dead birds are removed from the houses daily but not placed in secure covered containers away	Dead birds not removed from houses daily



Biosecurity Assessments

111	Written Biosecurity Plan	Biosecurity plan is written and implemented	★	Biosecurity plan is written	No Biosecurity plan is written
112	Written SOP's	Yes	★	N/A	No
113	Facility Map	Yes	★	N/A	No
114	Biosecurity Training	Biosecurity training is given and updated logbook is in manager's office and readily available	★	Biosecurity training is given and no records are kept	Biosecurity training is not given
115	Employees receive biosecurity training upon hiring	Yes - Immediately	★	Yes – Next available training	No
116	Employees sign written statement when hired and during annual training sessions stating that they avoid contact with other birds not owned by the farm	Employees sign statement	★	N/A	Employees don't sign statement
117	Frequency of employee biosecurity training	Three times per year or more often		Once or twice a year	No biosecurity training program
118	Frequency of on-site biosecurity assessments	Three times per year or more often		Once or twice a year	No biosecurity assessments performed
119	Experience level of personnel performing assessment	Highly experienced		Intermediate	Novice

 Minimal

 Medium

 High

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