**POULTRY HEALTH AND BIOSECURITY**

 The objective is to achieve hygienic conditions within the poultry house and to minimize the effect and prevent the spread of any disease should it occur, to achieve optimum performance and bird welfare, and to provide assurance on food safety issues.

 **Hygienic conditions:-** within the poultry house are achieved through the implementation of correct biosecurity, cleaning and disinfection, vaccination programs and good management practices

**What is Biosecurity?**

 **Biosecurity:** refers to measures that are taken to stop the spread of harmful organisms to human, animal and plant life. The measures taken are a combination of processes and systems that have been put in place by agricultural managers to prevent the use of dangerous pathogens and toxins.

**What are Pathogens?**

Pathogens may be characterized as:

1. **Bacteria:** single-celled organisms that are known to cause infections.
2. **Viruses:** tiny microscopic infectious agents that replicate within the cells of living host.
3. **Fungi:** organisms that live by breaking down and absorbing the organic material in which they grow.
4. **Parasites:** organisms that live on or within a host from which it obtains the nutrients it needs to survive.

**Why Does the Industry Use Biosecurity?**

Biosecurity’s purpose in the industry is to:

1. Reduce the exposure of diseases and pathogens to birds within a particular flock.
2. Reduce transmission of diseases and pathogens to a neighboring farm.
3. Reduce the transmission of zoonotic diseases.

**Zoonotic Diseases:** Infectious diseases that can be transmitted from animals to humans or humans to animals and common zoonotic diseases are

**1. Salmonella:** A bacteria transmitted between birds primarily through the air.The bacteria is shed from the infected bird through feces, feather dust, and secretions made from both the eyes and nose.

**2. E. Coli:** A bacteria commonly found in the intestine of birds.

**What Are the Economic Benefits of Biosecurity?**

By reducing diseases and pathogens: The producer saves money by not having to euthanize (kill painlessly) all the birds in the infected flock. Depending on the size of the flock, the economic loss could be worth millions of dollars.

**How is Biosecurity Achieved?**

1. **Tire BathsP:** Reduces opportunity for incoming traffic, such as feed and delivery trucks, to bring in pathogens from outside the perimeter of the farm.
2. **Outside Perimeter:** High fences prevent intruders such as animals and people from entering the premises and possibly transmitting diseases to the flock.
3. **Footbaths:** Footbaths are placed outside the door of all facilities and contain disinfectants, reducing the risk of bringing pathogens inside the buildings.
4. **Sanitation of Equipment and Supplies:** The purpose of sanitizing equipment, surfaces, and supplies is to reduce pathogens. This is especially important in preventing the spread of diseases between neighboring flocks.
5. **Good Hygiene:** Prior to entering the facility, employees and visitors should demonstrate good hygiene by showering and wearing clean designated clothing such as boot covers, hairnets, and cover-alls.
6. **Entrance Order:** The order of entering facilities depends on the age of the birds. For example, you want to enter the hatchery first (where the youngest birds are), before entering the grower house (where the older birds live.) Older birds have stronger immune systems, making them more resilient to any pathogens that may be present.
7. **Hostile Environment:** Creating an environment that is non-desirable will reduce the risk of transferring pathogens from infected wild life. Eliminating any trees, grass, and ponds from the property will deter wildlife from trying to enter.
8. **Bait Stations:** Reduces the risk of rodents, which are small enough to easily get into facilities and carry many pathogens, from infecting the flock.
9. **No contact with outside birds:** Since most avian diseases are transmitted through the air, it is highly important to have no contact with outside birds within 72 hours of entering a facility. This includes pets as well as birds from other flocks.

**Hygiene Management**

 **Farm location/construction**

• It is best to build the farm in an isolated area, at least 3.2 km (2 miles) distance from the nearest poultry or other livestock facilities that may contaminate the farm.

• Fence the perimeter of the farm to prevent unwanted visitors.

• Test the water source for mineral, bacterial and chemical contamination on a regular basis as water can change due to season, weather and agricultural activity.

• The design and construction of the houses should prevent wild birds and rodent from entering the building.

• Conventional broiler breeder houses should ideally be facing in an east-west direction.

• Clear and level an area (15 m) around all houses so that grass can be cut quickly and easily. Gravel or pebbles are easier to maintain than grass.

**Preventing diseases transmitted by humans**

• Minimize the number of visitors by locking the entry gates and posting no visitors signs.

• All people entering the farm should follow a biosecurity procedure.

• Maintain a record of visitors, previous farm visited and next farm to be visited.

• When entering and leaving each poultry house, workers and visitors must wash and sanitize their hands and boots.

• Tools and equipment carried into the house are a potential source of disease.

• If supervisory personnel are not able to avoid visiting more than one farm per day, they should visit the youngest flocks first.

**Preventing diseases transmitted by animals**

• Whenever possible, place the farm on an “all in/all out” placement cycle. Multiple-age chickens on the same site provide a reservoir for disease organisms.

• Downtime between flocks will reduce contamination of the farm. Downtime is defined as the time between completion of the cleaning/disinfection process and placing the next flock. A minimum downtime of 3 weeks between flocks is recommended, but the exact downtime required will depend on the size of the farm (a bigger farm may take longer to clean/disinfect).

.Keep all vegetation cut 15 m (50 ft) away from the buildings to provide an entry barrier to rodents and wild animals.

• Do not leave equipment, building materials or litter lying around. This will reduce cover for rodents and wild animals.

• Clean up feed spills as soon as they occur.

• Store litter material in bags or inside a storage building or bin.

• Keep wild birds out of all buildings.

• Maintain an effective rodent control program. Baiting programs are most effective when followed continuously.

• Use an integrated pest management program, including mechanical, biological, and chemical controls.

**House design**

The house and equipment should be designed to enable easy, effective cleaning. Ideally, the poultry house should have concrete floors, washable walls and ceilings, accessible ventilation ducts and no internal pillars or ledges. Earth floors are virtually impossible to clean and disinfect adequately. An area of concrete or gravel extending to a width of 1-3 m (3-10 ft) surrounding the house can discourage the entry of rodents and provide an area for washing and storing removable items of equipment.