ANIMAL HEALTH INFORMATION

Biosecurity for Commercial Poultry Facilities

MA Department of Agricultural Resources, Division of Animal Health
100 Cambridge Street, Boston, MA 02114 Phone; 617/626-1795 Website:
www.mass.gov/agr

WHY EVERY FARMER SHOULD BE UTILIZING PROVEN BIOSECURITY MEASURES:

Biosecurity is the application of protections and practices against infectious biologic agents that endanger the food supply. These protections and practices exist at many points in the poultry handling process and limit the spread of disease causing organisms. When teamed with disinfection and sanitation procedures, biosecurity practices can eradicate or reduce pathogens to non-infectious levels. Serologic monitoring and vaccinations also insure flock health.

Inadequate biosecurity can contribute to industry wide epidemics of highly pathogenic or exotic disease, resulting in quarantine and possible condemnation of flocks. An infection by a non-virulent organism within a facility can be just as devastating economically, reducing production over the life of the facility without overt signs of disease. Once contaminated with pathogens, poultry facilities are extremely difficult and expensive to clean, sanitize and disinfect.

A further consideration related to biosecuity at all levels is the potential for terrorists to introduce pathogens into livestock and the food chain. This could cause significant direct and indirect economic loss. According to the Gilmore Commission "A concerted biological attack against an agricultural product offers terrorists a virtually risk-free form of assault, which has a high probability of success."

SOURCES OF DISEASE

Source contamination: Animals, feed or water that carry a biological agent and transmit it. People, clothing or vehicles can harbor a biological agent that when moved around can spread the agent.

Vector contamination: Efforts to minimize vectors can significantly reduce disease transmission. Rodents, wild birds, insects, fomites (such as fecal material, feathers and dust) can be wind or water transmitted etc.

Facility Contamination: A major source of disease transmission is people (employees, service personnel, truck drivers, vaccination crews). Facilities may also be contaminated by new flocks (chicks, pullets, breeding males, semen, etc.)

Intentional contamination: A bioterrorist event that is intended to inflict harm in multiple ways. Motives could include market destabilization, economic loss, disruption of trade and imposition of embargoes and social instability through loss of confidence in the food supply.

FLOCK MANAGEMENT

The most important first step is to obtain chicks from a reliable source. You can get a list of National Poultry Improvement Plan (NPIP) hatcheries from the MA Department of Agricultural Resources. Managing poultry facilities for maximum health and productivity requires a qualified facility manager trained to keep the birds as healthy as possible and able to respond quickly and forcefully to any disease condition. Many factors must be considered to achieve maximum health and productivity, including optimum disease and infection controls, along with environmental provisions and safeguards.

Bird Selection And Maintenance: Birds should be purchased only from S. pullorum clean sources from National Poultry Improvement Plan (NPIP) participants. Chicks must originate from S. pullorum clean stock. Sick birds should be evaluated at a lab or by a vet. The state Department of Agricultural Resources (DAR) can assist in this process.

Stress Control: Provision of suitable housing, good quality feed and adequate, clean water minimize stress and generally increase flock health.

Ventilation: Proper ventilation is necessary for control of various respiratory diseases.

Temperature: Control measures should be taken to avoid temperature extremes thereby avoiding stressors.

Stock Density: Floor, feed and water space should be allotted according to age, breed, and type of birds.

FLOCK MANAGEMENT, continued

Brooder House: Always clean the brooder house thoroughly and disinfect it before a new shipment of chicks arrives. The floor should be covered with 2-4 inches of clean, dry litter, dry pine shavings are recommended, shredded newspaper or sawdust-hardwood shavings or hay are not recommended. The temperature at the chicks level should be 95 degrees F through the first week and then be reduced 5 degrees a week until it reaches 70 degrees F. You should observe the chicks to ensure they have enough room and ready access to food and water.

Feed and Water: Feed should be of high quality. It should be balanced, free from toxins and palatable. Toxins in a feed at very low level can affect productivity and general health. Water should be clean, cold in summer, warm in winter. Water and feed are important as far as disease prevention is concerned because many vaccines and medicines are administered by adding them in feed and water. Contaminated feed, lumped feed or oxidized feed or feed, which has a bad odor, should be discarded.

Sick And Dead Birds: Sick birds should be evaluated at a lab or by a vet. The MA Department of Agricultural Resources can assist in this process. Dead birds should be immediately removed from the building and buried, incinerated or disposed of properly.

Vaccination and Medication: Vaccination before infection occurs in a flock is the best means of protecting them. Vaccines may be live or killed. Live vaccines consist of live micro agents and can be given at a younger age than killed vaccine. They can be administered by injection, drinking water, eye drop application or inhalation. With live vaccine there is always a possibility of secondary infection so they should only be used to prevent diseases that have already been present at your facility and have been unable to be eradicated by other means. The use of live vaccines must be approved by the state through the MA Department of Agricultural Resources. Killed vaccines must be injected and can cause reactions. The age of birds and proper timing are very important. There are many vaccination programs for broilers, pullet's commercial layers. The most important consideration is to avoid over or under utilization of vaccines. A proper vaccination schedule for specific diseases should be followed. In case of a disease out break, notifications should be made according to a set procedure. All diagnosis should be confirmed and recorded. Expiration dates of vaccines and medicines should be recorded; expired meds should be disposed.

Infection Control: The spread of disease between facilities is a major concern. Poultry must be purchased only from sources, which are certified disease free and have records of appropriate vaccinations. Farms should maintain records of poultry sold and their final destination.

Protection From Pests And Predators: Rats, mice, wild birds, flies and beetles can all cause contamination and spread disease such as salmonella. They should be kept away from buildings to the greatest extent possible and the buildings should have any access points boarded up. Flocks with outside access need protection from owls, hawks, coyotes, foxes, etc. Outside enclosures should be covered.

Cleaning Floor Houses: After a flock has been depopulated, manure from around the houses should be removed. Sunlight adds to the break down the pathogens. A complete cleanout of houses between each flock is most desirable. If cleaning that often is not possible, broiler houses should have all organic materials removed, be cleaned out completely then disinfected, at least once a year.

Cleaning Cage Houses: A complete cleanout and disinfection of cage houses is recommended between each flock of pullets.

Equipment: Farm equipment can be a source of disease transmission and should be cleaned and disinfected regularly. Dedicated equipment, for farm use only, is preferable.

ENVIRONMENTAL MANAGEMENT

Location: Facilities should be located at least 1 - 2 miles from other commercial poultry facilities and away from waterways used by migratory waterfowl. Location must be an appropriate distance from other poultry sheds, road facilities and other farm operations.

Construction: Housing should be of sound quality and suitable to environmental conditions of the geographic area. It should, to the extent possible, be without access points for rodents or stray animals, crevices, free of leaks and damp floors, etc. Roads should be built of all weather materials to reduce the transport of organic material on tires.

Access Restrictions: Records should be kept of all visitors to the farm, including vendors and inspectors. It should include names and addresses, dates of visits, and nature of business. Since different diseases have different incubation periods, once a disease has been identified, the farm may check the incubation period and identify potential carriers by reviewing records. All doors to poultry buildings should be locked and the keys stored in a secure location. When deliveries of chicks, pullets, poults or young breeder stock is accomplished, the entire crew should observe strict sanitary conditions since (1) The building they are entering has just been disinfected, and (2) They may have made another delivery previously and different protective clothing should be worn at each stop.

ENVIRONMENTAL MANAGEMENT, continued

Vehicles, Personnel And Visitors: Vehicles and people are major sources of flock contamination. Parking should be away from the poultry buildings. Vehicles entering and departing the area where poultry are housed should be washed then sprayed with a disinfectant (including tires). Personnel movement should be restricted. Protective outer clothing, including boots and headgear should be worn at all times when in and around the sheds.

Outside Security: Perimeters around facilities should be reasonably secure to prevent unauthorized entry. "No Trespassing" signs should be conspicuously posted. Lighting should be sufficient to allow surveillance of exterior of buildings and parking areas. Any outside storage bins or sheds should be securely locked and/or sealed to prevent tampering. Requiring positive identification, such as a driver's license, with sign in and sign out procedures in place should control entry into facilities.

Inside Security: Restricted areas should be clearly marked as such. Visitors, guests and non-farm employees should not be allowed to move about the offices, product areas or sheds without an authorized escort and, if necessary, being subject to all biosecurity conditions required.

Sanitary Traffic Control: Control of human traffic is essential. Lock doors, ban all visitors and allow building access only to authorized and necessary personnel who are wearing properly sanitized footwear, coveralls and headgear. Human hands may also spread infection and should be sanitized before entering a poultry building and before leaving the farm. The use of disinfecting foot dips or footpads at entrances and exits is desirable. A footpad can be fabricated using rubber pans with carpet pads cut to fit the pan and saturated with disinfectant. Traffic control is not limited to humans. Any damage to a facility or open access should be screened or sealed to prevent animal, rodent and wild bird access. A possible exception would be cats, which can provide effective rodent control. Also, dogs can be trained and used to keep out intruders of all types.

Traffic Pattern: Routes through the facility should be "one way" and route personnel, vehicles and poultry from youngest birds to oldest birds and from clean areas to dirty areas and from individual poultry houses to common use employee areas. This minimizes movement of contaminants through the facility.

Trucks And Service Personnel: No responsible poultry farm should allow live-haul trucks or equipment, which is unclean or soiled with bird droppings near the farm. In order to ensure prevention of disease the following procedures for cleaning trucks should be followed:

- Operator must wear disinfected clothing.
- Remove modules and scrape and brush litter from the transporter deck.
- Scrape and brush the sidewalls, floor and tail lift of enclosed vehicles.
- Remove deposits of mud, straw, etc., from wheels and exposed chassis.
- Using a disinfectant detergent, wash down the truck from top to bottom, paying particular attention to wheels and wheel wells and tail lift.
- Wash all tools and equipment.
- If applicable, due to contamination, remove all removable items from the cab and wash both these items and wash the inside of the cab.
- When washing is complete, use a high-pressure rinse with clean water.

The most effective method of operation for service personnel with vehicles is to treat their vehicles passenger compartment as clean and the cargo area as contaminated. Before calls a package of sanitized clothing for each stop (boots, cap, coverall) are sealed and placed in the clean area. After use they are removed and placed in the contaminated area. Each vehicle should be equipped with a bucket, brush, disinfectant, and a supply of clean water.

EGG PROCESSING FACILITIES

The major consideration for biosecurity at egg processing facilities can be summed up as the control of traffic and hygiene. Processing plants may receive eggs from multiple locations and they arrive with equipment/racks/pallets from multiple sources. This situation adds to the potential for cross contamination. Rodent and insect control around the facility should also be a priority. Egg flats, racks trolleys and pallets should all be considered contaminated and be both high pressure and hot water washed and sanitized between uses.

For more information or to discuss the biosecurity situation on your farm, call the Massachusetts Department of Agricultural Resources, Division of Animal Health: 617/626-1795.