POULTRY PRODUCTION

Level III

Learning Guide -73

Unit of Competence: - Implement poultry Farm Biosecurity Plan

Module Title: - Implementing poultry Farm Biosecurity Plan

LG Code: AGR PLP3 M18 0120LO1LG- 73

TTLM Code: AGR PLP3 TTLM 0120v1

LO 1: Implement Poultry Farm Biosecurity Plan

Instruction Sheet	Learning Guide # 73

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Ensuring decontaminated personal and/or work vehicles before entering the farm site.
- Reporting Contact with potential contaminants according to enterprise requirements.
- Washing hands are before poultry, feed, or other products are handled.
- Showering and changing into work clothes are carried out if required.
- Putting appropriate clothing and footwear on before commencing work
- using and checking footbaths thoroughly disinfectant level before entering sites

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- Decontaminate personal and/or work vehicles before entering the farm site.
- Report contact with potential contaminants according to enterprise requirements.
- Wash hands before poultry, feed, or other products are handled.
- carried out showering and changing into work clothes if required.
- put on appropriate clothing and footwear before commencing work and store street clothing securely away from poultry, feed or other products.
- use footbaths thoroughly and check disinfectant level before entering sites and sheds,

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, - 6”.
4. Accomplish the “Self-check 1 - 4” **in page -5, 7, 10,13,15 and 19** respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1 in **page -20.**
6. Do the “LAP test” **in page – 22** (if you are ready).

Information Sheet-1	Ensuring decontaminated personal and work vehicles before entering the farm site.

Biosecurity approaches fall into two categories. Structural biosecurity is built into the physical construction and maintenance of a facility. Operational biosecurity encompasses the standard operating procedures (SOPs) that minimize the chance of virus entering the poultry house and compliance with those SOPs. Over the long term, poultry producers will need to consider both operational and structural biosecurity to reduce their overall risk of disease.

The aim of personal decontamination is to remove safely any contamination of the body or clothing. The process minimizes the risk of cross-contamination so that people can confidently leave a contaminated environment with little or no dissemination of the disease organism. These procedures must be rigorously applied.

Personnel may become heavily contaminated while working on infected premises or dangerous-contact premises and when active disease is found by diagnostic and surveillance teams.

The heaviest contamination will occur:

- ✓ when living infected animals are physically inspected;
- ✓ when slaughtered animals are physically inspected and diagnostic samples taken;
- ✓ at the site of carcass disposal;
- ✓ when removing manure, bedding and detritus from buildings which housed infected stock.

☞ **Personal decontamination**

The following procedures will apply to all personnel before leaving an IP or dangerous-contact property or any quarantined area which is grossly contaminated with the disease organism.
On arrival at the decontamination site, a disinfectant solution safe for skin contact should be ready in buckets. This will be used throughout the operation. It must be noted that antiviral disinfectants that are both effective against all virus families and approved for use on human skin are not available. Warm, soapy water is recommended for washing face, hair, skin, etc.

Alternatively, the washing solution pH can be raised by adding sodium carbonate or lowered by adding citric acid to enhance antiviral action. If other skin decontaminants are used, care must be taken to ensure they are effective against the virus, as many brand products containing quaternary ammonium compounds or phenolics are not active against category B viruses.

Heavy-gauge plastic garbage bags are used for disposable items that can be buried or burnt on the site or for items to be removed from the site for further disinfection and cleaning.

Industrial hard hats must be scrubbed and set aside. If a neck cloth is worn, it must be removed and soaked in disinfectant - for example **1 percent Virkon® for 10 minutes** - then wrung out and placed in a plastic bag. Hair should be washed/sponged down with shampoo. Disposable gloves must be decontaminated before discarding; reusable gloves must be decontaminated before reuse. Hands must be washed in disinfectant and scrubbed.

Plastic overalls. Using a sponge or low-pressure pump, wash the overalls thoroughly and completely to remove gross material, paying particular attention to the back, under the collar, zips and fastenings and the insides of pockets. Jackets must be removed and placed in disinfectant. Trousers must be treated similarly, paying attention to crutch, pockets and the inside of the bottom of the trouser legs. The trousers must then be removed, inspected and placed in disinfectant. Wellington boots should be scrubbed down, with particular attention paid to the soles.

Personnel returning to the site on a subsequent day can remove hats, gloves and plastic overalls from the disinfectant and can remain on site. If personnel are not returning, the equipment should be placed in plastic bags and the outsides of the bags disinfected. Personnel can then walk across the area, treat the soles of footwear again, change into street shoes and leave. If underclothing has been soiled, especially above boot level, it must be removed and placed in a plastic bag, the skin washed and a clean pair of overalls used for leaving the site.

Cotton overalls. Overalls can simply be removed, soaked in disinfectant, squeezed out and placed in a plastic bag for removal. Underclothes and rubber boots are similarly treated. Personnel should then wash down their bodies, walk across the area, wash the feet in a footbath, change into clean overalls and street shoes and leave directly, without re-exposure to contaminated areas.

Plastic bags containing used overalls and other articles should be sealed, given a second wash in disinfectant and placed at the outer limit of the area for collection by courier. The overalls must then be cleaned.

☞ **Vehicle and Machinery Decontamination**

Contaminated cars, animal and feed or product haulage vehicles with their drivers carry a disease dissemination risk. The first priority is to ensure that no vehicles leave the IP without thorough decontamination. A second priority in any disease outbreak is to trace urgently vehicles that have been in contact with the disease agents and to take them off the road and decontaminate them thoroughly. Inquiries should be made about the origin and occupation of drivers and passengers and any contact they may have had with livestock.

Most vehicles should remain off IPs or DCPs. If the numbers of vehicles warrant it, a local area with a hard standing, drainage and a good water supply should be designated as a local vehicle disinfection station. A carwash facility is ideal for decontamination of surveillance vehicles, if one is conveniently located. A carwash can do the job quickly and more effectively than a team of people and has the advantage of being able to wash under vehicles. Although this cleaning may be unnecessary from an epidemiological point of view, it is effective public relations to have clean vehicles visiting suspect private properties.

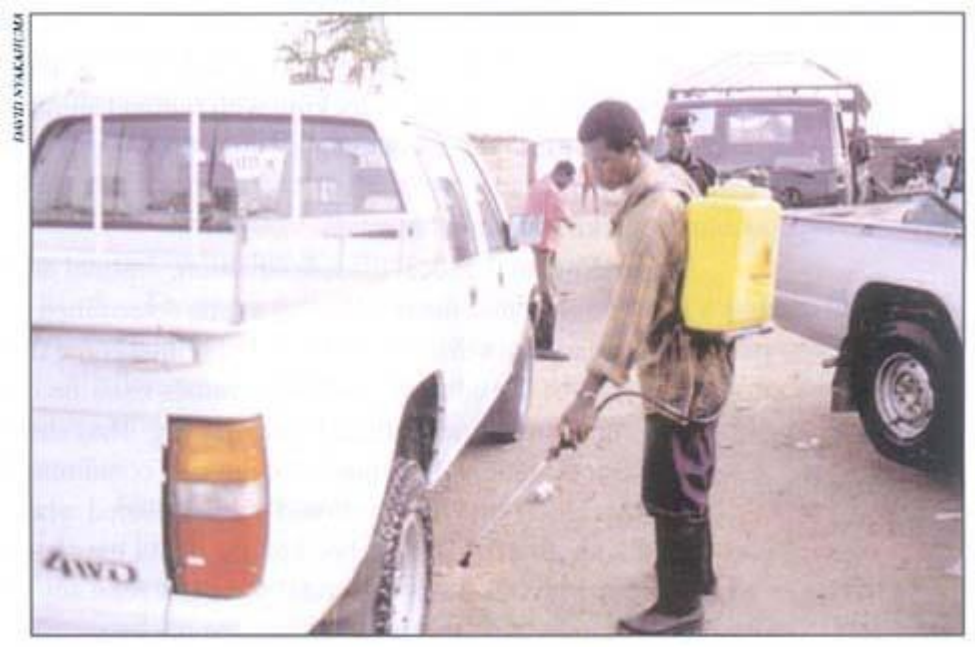

Figure 1. Disinfecting cars

Disinfection

Thorough disinfection of vehicles is essential during an emergency disease outbreak to prevent the disease from spreading to other premises.

From a disinfection point of view, there are four categories of vehicles, needing:

- ✓ no cleaning or disinfection;

- ✓ cleaning of the wheels only;
- ✓ cleaning of the outside only;
- ✓ cleaning of the outside and inside.

Cars

Any rubber floor mats on the driver's side should be removed for scrubbing with disinfectant. The dashboard, steering wheel, handbrake, gearstick and driver's seat should be wiped liberally with appropriate disinfectant. If the boot (trunk) is considered contaminated, the contents must be removed and the interior of the boot wiped with disinfectant. The contents of the boot must be treated similarly before being replaced. The wheels, wheel arches and underside of the car should be sprayed with disinfectant, not plain water. The wheel arches, wheels and bodywork should be sprayed with a non-corrosive disinfectant.

Plain water should not be used with high-pressure hoses, because the process will release contaminated aerosols of the pathogen. A mixture of disinfectant and water should always be used with high-pressure hoses. Cleaning heavily contaminated vehicles should only be done on the infected rural IP, because most cleaning processes, including high-pressure hoses, spread the infectious agent.

Cleaning by brushing with disinfectant/soap and water to dislodge encrusted dirt and organic matter is preferable to washing with high-pressure water streams. Caustic soda should not be used on paintwork.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define biosecurity. (1pt)
2. What is the aim of personal decontamination? (2pts)
3. At what time the heaviest contamination will occur? (2ps)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Reporting Contact with potential contaminants

Reporting is providing information about serious wrongdoing that you have become aware of at your workplace/ place of study. Reporting is about notifying concerning what you believe to be the discovery of breaches of laws and regulations, breaches of ethical norms or serious conditions which might harm individuals, the farm, cooperative partners, or society as a whole.

Contaminant- Contaminants are defined as "substances (i.e. chemical elements and compounds) or groups of substances that are toxic, persistent and liable to bioaccumulate, and other substances or groups of substances which give rise to an equivalent level of concern".

- ☐ Pathogen contaminant
- ☐ Chemical contaminant

Table 1. Reporting Contact with potential contaminants

PERSON REPORTING THE SITE:			
Family Name:		**Given Name(s):**	
Company (if applicable):			
Postal Address:		**Suburb/Town:**	
Postcode:		**Phone:**	
Fax:		**Email:**	
Are you? ☐ An owner of the farm ☐ An occupier of the farm			
Potential contaminant.			

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Define report. (1pts)
2. Define contaminant. (2pts)

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Washing hands before handling poultry, feed other products are handled

.

Human hands contaminated with a pathogen can spread disease from one location to another. In order to prevent this, hand-washing amenities should be available to persuade frequent washing of hands before and after handling poultry, feed, other products and entering and leaving a poultry house. Research at a human hospital has shown that, as access to a hand-washing facility increased, people became more likely to wash their hands. Hands should be washed with an effective product that does not dry out the skin or cause skin irritation. This is a simple procedure but can play a major role in preventing disease spread.

Wash your hands the right way:

- ✓ Use plain soap and water—skip the antibacterial soap—and scrub the backs of your hands, between your fingers, and under your nails for at least 20 seconds.
- ✓ Rinse hands, then dry with a clean towel.
- ✓ Wash your hands often, especially during these key times when germs can spread:
- ✓ Before, during, and after preparing food
- ✓ After handling raw meat, poultry, seafood, or their juices, or uncooked eggs
- ✓ Before eating
- ✓ After using the toilet
- ✓ After touching an animal, animal feed, or animal waste
- ✓ After touching garbage
- ✓ Before and after caring for someone who is sick
- ✓ Before and after treating a cut or wound
- ✓ After blowing your nose, coughing, or sneezing

Figure 2. washing the hand

- ✓ Wash Your Hands and Take Other Steps to Reduce Yours Chances of Getting Salmonella

- ✓ Always wash your hands with soap and water right after touching backyard poultry or anything in the area where they live and roam.
- ✓ Adults should supervise handwashing by young children.
- ✓ Use hand sanitizer if soap and water are not readily available.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe the use of washing hand in case of poultry farm. (5pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Showering and changing into work clothes are carried out

Shower in shower out

After entering the farm through the locked gate, you take off your shoes and put on farm boots. You then walk through a disinfecting “tunnel” with a long dip pan. Then you enter a building where you sign a visitor log and conduct some sanitizing steps. First you sanitize your bare hands with wipes, then you use cotton swabs dipped in a sanitizing solution to swab out your nostrils and ears. Next, you rinse out your mouth with a disinfecting mouthwash and then leave the building and head for the showers.

If personnel that have visited a quarantined farm shower at the field office, they should proceed as a group (nobody else allowed on the “incoming” side of the shower facilities, until they have all gone through showers, and the laundry room personnel have had the opportunity to wash the room: wash and disinfect floor, benches, etc). A sign will be posted to inform other personnel of the current situation.

Note that the clean clothes drop off is only a temporary holding area and it should have a cover. The shower is the line between clean (farm environment) and dirty (outside environment)

While working or visiting the farm, the provision of showering facilities is used to reduce the exposure to pathogens and also minimize the transmissions of pathogens from person to the farm and from farm to the person.

At least one shower cubicle for every 10 workers who may need to shower should be provided. Usually separate facilities should be provided for male and female workers. However, in small or temporary workplaces where privacy can be assured, it may be acceptable to provide one unisex shower.

Showers should have:

- ✓ a floor area of not less than 1.8 m^2
- ✓ a slip-resistant surface that is capable of being sanitized
- ✓ partitions between each shower that are at least 1650 mm high and no more than 300 mm above the floor
- ✓ an adjacent dressing area for each shower containing a seat and hooks
- ✓ a lockable door enclosing the shower and dressing cubicle.

Each shower should be supplied with clean hot and cold water and individual non-irritating soap or another cleaning product. If grime or other by-products of the work process cannot be removed just by washing, individual nail or scrubbing brushes should be provided. Also provide appropriate PPE and drying facilities such as towels if the work the workers carry out means they need to shower before leaving the workplace.

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. why shower is important during visiting poultry farm? (3pts)

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-5	Putting appropriate clothing and footwear on before commencing work

(1) Footwear

Farmers and all people entering the RA, after the barn has been cleaned and/or disinfected and during the grow-out period up to the point the entire flock is shipped from the barn must take precautions not to carry pathogens from outside the barn into the barn by way of their boots. This can be accomplished by having a dedicated pair of boots at each barn or by another acceptable means (e.g. plastic/disposable boots). This footwear change is to occur at the barrier between the CAZ and the RA.

(2) Clothing:

If any clothing used by farm workers in the RA will also be worn off of the premise, then they can only be worn on agricultural premises under common management.

Farm workers are recommended to wear either: (1) barn-specific clothing/coveralls when crossing the barrier from the CAZ (control area zone) to the RA, or (2) premise-specific clothing that is not be worn off of that premise.

Clothing worn in the RA (restrict area) can act as a vector of disease. RA clothing is not to be worn in public places (e.g. grocery/hardware stores) or on other poultry farms as diseases can be spread from your farm to other farms or from other farms to your farm.

Anyone other than farm employees who are accessing the RA when birds are in the barn and prior to the shipment of birds must wear premise-specific coveralls when entering the farm premises or when crossing the barrier from the CAZ to the RA.

- ✓ Each farm must have coveralls/clothing and boots/disposable boot covers available as a back-up for visitors that do not bring their own, or for emergency situations.
- ✓ During partial catching at flock thinning, the catchers should wear premise-specific coveralls or clothes and, if possible, the catching schedule should be organized so that the barn being thinned is the first barn of the catching shift.

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe the purpose of putting PPE during visiting poultry farm. (3pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-6	using and checking footbaths thoroughly disinfectant level before entering sites

Footbaths

Note: The use of footbaths is not promoted by On-Farm Food Safety (OFFS) programs, due to the high degree of maintenance required for efficacy and the potential for creating disease reservoirs. It is widely accepted that footbaths are most effective in clean areas and that they should always be used in combination with other preventative actions.

Some advantages to foot baths:

♦ They are easy to use and inexpensive.

♦ The optics of having a footbath in front of an entrance encourages its use.

♦ If used correctly, all surfaces, including deep treads, are exposed to disinfectant.

Some disadvantages:

♦ They are high maintenance, in that footbaths need to be monitored closely.

Disinfectant solutions should be changed routinely and the container cleaned on a regular basis.

♦ Contact time is required for effective sanitation.

♦ Depending on the disinfectant used and its concentration, footbaths may be ineffective against all pathogens of concern.

♦ Some disinfectants are expensive.

If footbaths are the chosen option for your premises, it is important to understand the process required for their effective use. The four steps for footwear sanitation using a footbath are as follows:

1) Remove visible debris from the footwear. This requires the physical removal of dirt, mud, manure, etc., using equipment such as a boot brush. Pay extra attention to treads.

2) Wash footwear with a detergent. This step removes any oils, grease, or biofilms that may be invisible.

3) Apply disinfectant. (This is the process of stepping into the footbath.)

4) Ensure appropriate contact time. To be effective, the disinfectant should be in contact with the surfaces of the footwear for a period of time. Most manufacturers provided this information on the disinfectant's container.

Depending on the concentration and pathogen, the time is generally about 10 minutes.

The following points will be done by all persons entering and exiting a biosecurity zone requiring footwear sanitation.

1. Remove visible debris from footwear, using the provided equipment (boot brush).
2. Wash footwear with the water and detergent provided. Pay extra attention to treads.
3. Step into the footbath, completely submersing the footwear for 5 to 10 seconds.
4. Exit the footbath.
5. Wait for (required time as recommended by manufacturer) before proceeding.

Footbaths are to be controlled using the following monitoring schedule:

1. Clean and maintain footbaths every Thursday before end of day.
2. Check footbaths daily before start of day.
3. If a footbath requires cleaning or recharging, do so immediately.

The following seven steps are to be carried out as required by the footbath monitoring schedule:

1. Empty the used disinfectant into a bucket.
2. Wash the footbath container with hot soap and water.
3. Empty the used soap and water into the bucket containing the used disinfectant.
4. Rinse.
5. Empty the rinse water into the bucket.
6. Recharge the footbath with fresh disinfectant at the desired concentration.
7. Dispose of the water and used disinfectant in the bucket. (This is site specific, but should occur without crossing biosecurity zones.)

Figure 3. Foot bath

Figure 4.Warning sign.

Table 2. Recommended Disinfectants

Class of Disinfectant	Advantages	Disadvantages
Phenols (Lysol, Tek-trol, Environ)	Effective against fungi & many bacteria Retain efficacy in presence of organic material	Pine-tar odor Turn “milky” in water
Iodophors (Betadine, Isodyne, Eladol)	Effective against bacteria & many viruses	Can stain clothing & surfaces Does not work well in presence or organic material
Hypochlorites (Bleach, Halazone)	Relatively inexpensive Effective against bacteria & many viruses	More active in warm water Irritating to skin Corrosive to metal
Quaternary Ammonium (Germex, Virex, Vindicator)	Odorless, non-irritating, deodorizing, colorless Have detergent action	Inactivated in the presence of some soaps or soap residues
Oxidizing Agents (Hydrogen Peroxide)	Effective against bacteria & spores, viruses, & fungi Active at low concentrations	Must keep in tight, cool container Avoid direct sunlight
Compound Cresol	Effective against bacteria & most viruses Non-corrosive Soapy – mechanically lifts dirt away	Apply hot to be most effective Has odor hat can be absorbed by food products (ex. eggs)
Formals	Effective against bacteria, viruses, fungus & spores	Carcenogenic

Self-Check -6	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the points will be done by all persons entering and exiting a biosecurity zone requiring footwear sanitation? (3pts)
2. Write the advantage and dis advantage of footbath. (2pts)
3. List three recommended disinfectant. (3pts)

Note: **Satisfactory rating – 8 points** **Unsatisfactory - below 8 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation sheet-1	Standard operating procedures for barn entry and exit

1.1. Procedures for barn entry using an anteroom

Step 1. Ensure that outerwear and footwear entering an anteroom are visibly clean.

(Ensure that premises-designated footwear and outwear worn in the CAZ is free of manure, soil, and organic debris. If not, prior to entering the anteroom, brush off outerwear, and remove soil and other organic material from footwear – use a boot pail with a brush and clean solution of disinfectant – paying particular attention to the tread.)

Step 2. Step into the anteroom.

Step 3. Remove outerwear (coats, sweaters, coveralls), and store in an area designated for outside clothing.

Step 4. Wash or sanitize hands.

Step 5. Remove outside footwear. Step over a demarcation line or barrier (bench, painted line), and put on designated inside-barn footwear.

- ✓ In some instances, footwear will be removed, and staff will walk through a corridor or around a partition prior to donning the clean footwear.
- ✓ Benches work well and allow staff to remove outerwear first, sitting on the bench to remove outside footwear, turning 180 degrees to face the barn door access and donning footwear and barn-designated gear.

Step 6. Put on barn-designated outerwear – coveralls, headcover, and gloves. (Wash hands again if clean gloves are not used.)

Step 7. Step into the bird housing area.

1.2. Procedures for barn exit using an anteroom

Step 1. Brush or scrape off all organic material from barn-designated footwear before leaving the bird housing area.

Step 2. Step into a footbath containing disinfectant, ensuring the outside of the footwear is thoroughly covered by disinfectant, paying particular attention to the tread.

Step 3. Wash or sanitize hands, if possible.

Step 4. Remove outerwear (while still wearing gloves, if worn), being careful to avoid touching the inside of clothing or coveralls.

Step 5. Remove gloves.

Step 6. Remove footwear and step over line demarcation on the floor, and put on outside footwear.

- ✓ If a bench is being used, sit down and remove barn-designated footwear, turn 180 degrees, and put on outside-designated footwear.
- ✓ If a corridor system is used, walk the length of the corridor and into the clean area before putting on outside-designated footwear.

Step 7. Wash or sanitize hands.

Step 8. Put on outside clothing, step through a footbath, and depart.

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 1 hour.

Task 1. Visit poultry farm

Task 2. Exit from poultry farm

List of Reference Materials

1. https://www.uspoultry.org/animal_husbandry/assessment.cfm.
2. https://www.wattagnet.com/articles/24250-avian-flus-impact-on-poultry-farm-biosecurity-in-china.
3. https://thepoultrysite.com/focus/zoetis/poultry-health-today-issue-4-expert-advice.
4. https://edis.ifas.ufl.edu/vm137.

POULTRY PRODUCTION

Level III

Learning Guide -74

Unit of Competence: - Implement poultry Farm Biosecurity Plan

Module Title: - Implementing poultry Farm Biosecurity Plan

LG Code: AGR PLP3 M18 0120LO1LG- 74

TTLM Code: AGR PLP3 TTLM 0120v1

LO 2: Work in Bio-security

Instruction Sheet	Learning Guide # 74

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Handling and storing chemicals and/or medications appropriately.
- Keeping different feed mixes, soils or other products.
- Identifying and reporting any cases of disease.
- Identifying and reporting any breaches of quarantine procedures
- Identifying any appropriate Occupational Health and Safety (OHS) hazards
- Disposing all waste products according to enterprise procedures.
- Disposing all deceased livestock and unwanted biological material.
- Recording information relating to work in Bio-security

This guide will also assist you to attain the learning outcome stated in the cover page.
Specifically, upon completion of this Learning Guide, **you will be able to –**

- handle and store chemicals and/or medications appropriately.
- Keep different feed mixes, soils and/or growing media and/or other products separate and appropriately.
- Identify and report any cases of disease or pathogen to supervisor.
- Identify and report any breaches of quarantine procedures to supervisor.
- Identify and take appropriate action on any Occupational Health and Safety (OHS) hazards.
- Dispose all waste products according to enterprise procedures.
- Dispose all deceased livestock, unwanted biological material or damaged/infected plant stock.
- Record information relating to work in Bio-security

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, - 8”.
4. Accomplish the “Self-check 1 - 4” **in page -4, 7, 9,11,14,17,20 and 22** respectively.

Information Sheet-1	Handling and storing chemicals and/or medications appropriately.

Normal storage condition

Unless special storage conditions are stated, it is vital that chemical or drugs be stored in a dry, adequately ventilated shady and cool store room. Efforts should be made to maintain the specified storage conditions with regard to exposure to humidity, sun light, heat, etc. When a product label states “Protect from moisture”, store the product in a space with no more than 60% relative humidity. Free air circulation by opening windows, using fans or air conditioners can be considered to reduce the effects of humidity. Some products are photosensitive and will be damaged if exposed to light.

To protect products from sunlight:

- ✓ Shade the windows or use curtains, if they allow the passage of direct sunlight,
- ✓ Keep products in cartoon
- ✓ Do not store or pack products in sunlight

Heat will also affect many products. It melts ointments and creams and affects other products.

It is important to have thermometers, hygrometer and other equipment in order to regulate the temperature and humidity of storage areas.

Some categories of drugs and supplies require special storage conditions. These include narcotic and psychotropic substances, and combustibles.

Narcotic drugs, psychotropic substances, and their documents should be kept in securely locked rooms or cupboards. The keys should be kept in a secure place and it is preferable that only the chief of pharmacy should have access to them.

Combustibles such as alcohol, ether and other organic solvents must be stored in special or separate rooms. An advisable precautionary measure is to use a small, separate outbuilding as a special store for inflammable supplies, since it virtually guarantees that fire will not spread throughout the store. All stores should be equipped with fire extinguishers. A good alternative to fire extinguishers is represented by wooden or metal buckets filled with sand.

Rules for chemical storage

Safely storing chemicals in a laboratory or stockroom requires diligence and careful consideration. Correct use of containers and common lab equipment is critical. To store chemicals safely, DO the following;

- ✓ Label all chemical containers fully. We recommend including the owner's or user's name along with the date received.
- ✓ Provide a specific storage space for each chemical, and ensure return after each use.
- ✓ Store volatile toxics and odoriferous chemicals in ventilated cabinets. Please check with your environmental health and safety personnel for specific guidance.
- ✓ Store flammable liquids in approved flammable liquid storage cabinets. Small amounts of flammable liquids may be stored in the open room.
- ✓ Separate all chemicals, especially liquids, according to compatible groups. Follow all precautions regarding storage of incompatible materials. Post a chemical compatibility chart for reference, both in the lab and next to chemical storage rooms.
- ✓ Use appropriate resistant secondary containers for corrosive materials. This protects the cabinets and will catch any leaks or spills due to breakage.
- ✓ Seal containers tightly to prevent the escape of vapors.
- ✓ Use designated refrigerators for storing chemicals. Label these refrigerators CHEMICAL STORAGE ONLY—NO FOOD. Never store flammable liquids in a refrigerator unless it is specifically designed and approved for such storage. Use only explosion-proof (spark-free) refrigerators for storing flammables.

And AVOID doing the following:

- ✓ Storing large, heavy containers or liquids on high shelves or in high cabinets. Instead store these at shoulder level or below.
- ✓ Storing bottles on the floor unless they are in some type of secondary containment. • Storing chemicals near heat sources or in direct sunlight.
- ✓ Storing chemicals in fume hoods. Excessive containers interfere with air flow and hood performance. Only chemicals in actual use should be in the hood.
- ✓ Storing anything on top of cabinets. Ensure at least 18 inches of clearance around all sprinkler heads to avoid interference with the fire suppression system.
- ✓ Using bench tops for storage. These work spaces should contain only chemicals currently in use.
- ✓ Storing chemicals indefinitely. Humidity causes powders to cake or harden. Liquid chemicals evaporate. We strongly recommend all

containers be dated when they arrive in the lab. Ensure all manufacturers' expiration dates are strictly followed. Pay special attention to reactive or dangerous compounds. Dispose of all outdated, hardened, evaporated, or degraded materials promptly.

- ✓ Following these simple guidelines will get you well on the way to an efficient, organized, and safely operating laboratory. Ignore them, or become cavalier in their application, and you may be picking through ashes or rubble one day. Spend a few minutes going through the lab with this list on a regular basis, and you should avoid any major incidents with chemical storage. As always, safety first.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. To store chemicals safely, what are the points to done? (5pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Keeping different feed mixes and other products separately.

The farm buildings can be grouped into five major categories:

- Farm houses or homestead
- Farm buildings or farmstead
- Farm store
- Isolation shed
- Quarantine shed

Poultry houses, and buildings used to store feed, eggs or other material, should be constructed and maintained to prevent the entry of wild birds, rodents and arthropods.

Farm store is the one where we store different materials, product and others. While we storing different material, it is better if consider the nature of the product or material going to stored. Depending on that we store materials and equipments, feed, egg and meat separately to keep the quality.

Storage conditions

Poor storage will reduce the shelf-life of the feed through loss of critical nutrients, such as vitamins, essential fatty acids and anti-oxidants. This will lead to reduced growth and higher mortalities due to poor bird health.

One of the most important aspects of feed handling on the farm is the correct "unloading" or flow-out. A first-in-first-out mass flow is ideal. This will prevent old feed remaining in the bin. It also avoids feed separation and, with a good extracting auger, makes sure that the feed is delivered to the birds with as good as no change in composition.

Each load of feed or feed ingredient must be stored in clearly-identified closed bins or in tanks to prevent microbial contamination. This prevents moisture build-up and keeps rodents and wild birds away from your chickens' ration.

Store feeding trays and the paper you use with new flocks away from the production facilities. The storage area should be clean, dry and secure. Again, this prevents microbial contamination from previous flocks, as well as moisture build-up and also prevents contamination by rodents, wild birds, or insects.

Construct feed bins of materials that do not let feed build up on the inside or outside surfaces.

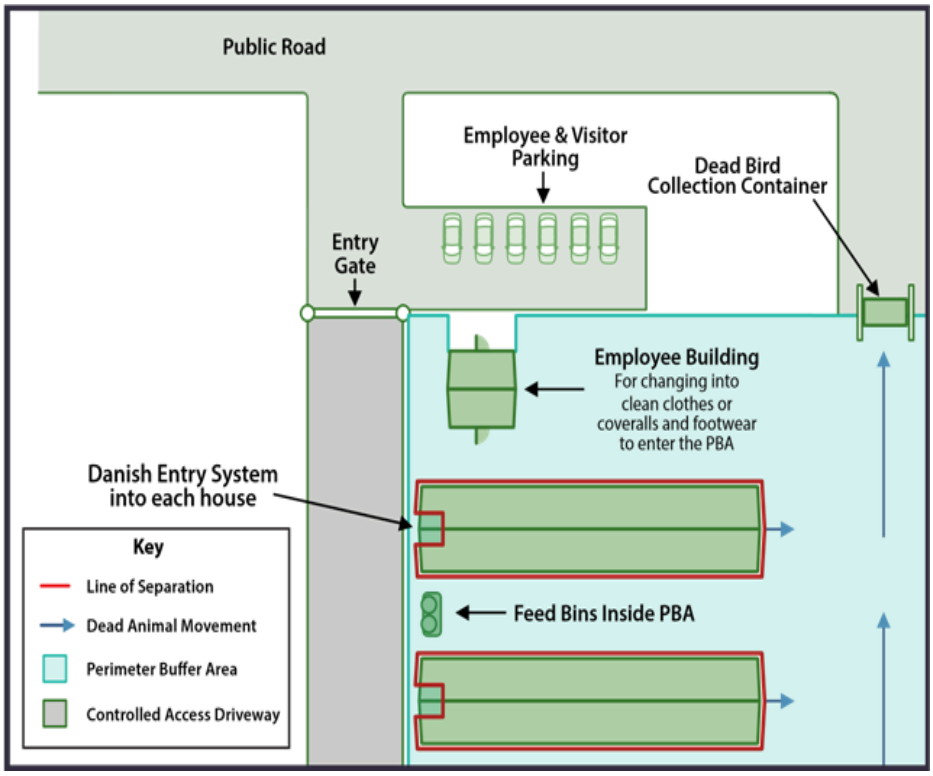

Figure 5. lay out poultry house

Proper feed storage is essential, the use of poor storage facilities will lead to deterioration of feed quality. This, in turn, will result in poor growth, malnutrition, health problems and possibly high mortality of the animals. All of which decrease farm profitability.

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. To store chemicals safely, what are the points to be done? (5pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying and reporting any cases of disease

Look for signs of infectious diseases – You should know what diseases are of concern for your flock and be on the lookout for unusual signs or behavior, severe illness, or sudden deaths. When possible, assess the health of your animals daily. Early detection is important to prevent the spread of disease.

Report sick animals – **Don't wait.** Report serious or unusual animal health problems to your veterinarian, local extension office, or State or Federal animal health officials.

It is important to recognize sick birds. It is simple to check through a flock to find dead birds; however, it requires much more skill to recognize sick birds. When walking through a flock, take time to scan the birds and spot individuals that may be showing signs of illness. Some of those signs might be:

- ✓ Lethargy, lack of energy, drooping wings
- ✓ Loss of appetite
- ✓ Decreased egg production
- ✓ Soft-shelled or misshapen eggs
- ✓ Swelling of the head, eyes, comb, wattles and hocks
- ✓ Purple discoloration of the wattles, combs and legs
- ✓ Nasal discharge
- ✓ Coughing, wheezing, or sneezing
- ✓ Lack of coordination or complete paralysis
- ✓ Muscle tremors or twisted necks
- ✓ Diarrhea
- ✓ Sudden or excessive mortality without clinical signs

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List sign of illness of poultry? (5pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Identify and report any breaches of quarantine procedures to supervisor

Quarantine- Restricts the movement of birds to prevent potential spread of disease

Isolation- Separates birds that are sick with a contagious disease from animals that are not sick and also separates new birds that are being introduced to a flock

Isolation and quarantine of new birds:

Isolation and quarantine of new birds is necessary in a separate place and enclosure so that infectious agents which may be there in the newly introduced birds may be detected before introduction of these birds with other flocks.

1. If the birds have been used for a show or a fair, keep them isolated from rest of the flock for 21 days after the event and observe for signs of any disease.
2. New birds should be kept separate from old stock for at least 21 days and they should be observed for any disease symptoms and samples (blood, faecal, swabs) should be collected for thorough investigation before mixing to the already existing old stock.
3. It should be ensured that shed houses birds of same age group, even if farm consists of birds of different age group.
4. Pest proofing is recommended before restocking.

☞ **If the above points were missed the farm worker/personnel should have to report to supervisor.**

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the purpose of isolating /quarantines birds? (5pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-5	Identifying any appropriate Occupational Health and Safety (OHS) hazards

Hazards related to job

- **Accident hazards-**
  - ✓ Sprains and strains from slips, trips, and falls when carrying heavy loads (bags of feed), working in congested and slippery areas soiled with excreta
  - ✓ Eye and skin irritation from contamination of broken skin or from splashing of irritants, allergens, other hazardous fluids (disinfectants) during vaccinating/ medicating (in feed/water), mixing of feed, transporting feed/medicines, or spraying vaccines, disinfectants, and fumigating agents
  - ✓ Burns from exposures to hot surfaces (e.g. incubators, debeaking tools)
- **Physical hazards-**
  - ✓ Exposure to high noise levels particularly in confinement systems
  - ✓ Heat exhaustion, heat-induced dermatosis, sun-induced dermatosis and cold exposure due to variable thermal conditions of yearlong outdoor work or high temperature/humidity in confined systems
- **Chemical hazards-**
  - ✓ Acute and chronic respiratory irritation and disease from exposure to agricultural dusts. Agricultural dusts are primarily organic (feathers, dander, microorganisms etc.), but inorganic dusts, like crystalline silica, are also found in confinement house dusts
  - ✓ Immunologically mediated diseases (e.g. rhinopharyngitis, atopic asthma) and hypersensitivity (immediate and delayed) reactions (e.g. extrinsic allergic alveolitis/ hypersensititivy pneumonitis) from exposure to dusts
  - ✓ Acute and chronic dermal, ocular and respiratory diseases from exposure to several toxic and asphyxiating gases common especially in confinement systems including ammonia (NH3), released during microbial degradation of manure; carbon dioxide (CO2) from animal respiration, manure fermentation, and gas flame heaters; other gases include CO, H2S, CH4, S02, and NOx (manure decomposition and fuel combustion).
  - ✓ Exposure to disinfectants, detergents, formaldehyde, ammonia solutions, sodium carbonate and sodium hypochlorite.
  - ✓ Formaldehyde, a suspect carcinogen, is often used as a disinfectant in hatcheries and brooder houses.

- **Biological hazards** -
  - ✓ Zoonotic diseases and infections naturally transmitted between vertebrate animals and man are common. These include infective agents such as viruses, bacteria, fungi (histoplasmosis) rickettsia and other microbes (psihicosis) as well as endotoxins.

- **Ergonomic, psychosocial and organizational factors**
  - ✓ Back pains and other musculoskeletal problems resulting from overexertion and wrong postures during lifting and moving of animals and feed bags, organizational shoveling of wastes, etc.

- **Preventive measures**
  - ✓ Wear safety shoes with non-skid soles
  - ✓ Wear appropriate eye protection; consult a safety supervisor or a supplier
  - ✓ Protect hands with chemical-resistant gloves; if impractical, use a barrier cream
  - ✓ Install effective exhaust ventilation and air conditioning to prevent air contamination and heat or cold stress
  - ✓ Wear a respirator to avoid inhalation of dust or aerosols
  - ✓ Replace formaldehyde as a disinfectant with less harmful substitutes available on the market
  - ✓ Maintain a high level of personal hygiene. At the end of work, shower and change clothes. Do not take work-soiled clothing home
  - ✓ Learn and use safe lifting and moving techniques for heavy or awkward loads; use mechanical aids to assist in lifting

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List down Preventive measures of hazards regarding to poultry. (5pts)
2. What are OHS hazards happened in poultry farm? (5pts).

Note: **Satisfactory rating – 10 points** **Unsatisfactory - below 10 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-6	Disposing all waste products according to enterprise procedures.

Introduction

Scientific research has documented that nutrients and energy from poultry waste by-products, including manure and litter, can be safely recycled as a component of livestock and poultry diets when pathogens are neutralized.

Most of these by-products can provide organic and inorganic nutrients that are of value if managed and recycled properly, regardless of flock size.

Method of using poultry waste

☞ **Land application of crop nutrients**

Globally, poultry manure or litter has been applied to land to enhance crop production for centuries. When properly managed, this is an effective and beneficial option.

Environmental pollution occurs when manure or litter is applied to the land in excess of the receiving crop's capacity to utilize the nutrients.

Other factors that influence the environmental fate of the manure and litter applied include methods of collecting, storing, handling, treating, transporting and applying the waste by-products to the receiving land.

☞ **Composting**

Composting is the aerobic microbial breakdown of organic matter, usually incorporating a thermophilic phase. Composting can also reduce nuisance odour emissions from poultry waste storage and treatment areas.

The adoption of composting systems for poultry waste has received attention due to its ability to reduce

litter volume, dispose of carcasses, stabilise nutrients and trace elements and reduce pathogens.

Agronomic benefits of composted litter include increased plant available nutrients and humic residues.

The immobilization of nitrogen (N) and phosphorus (P) during composting reduces the risk of soluble N and P entering aquatic systems via surface flow and leaching.

- **Direct combustion**

Direct combustion and incineration are recognised as efficient options for generating renewable energy and fertiliser grade ash from litter and could potentially close the nutrient loop for the poultry industry.

There are currently successful large scales off-site electricity utilities operating in some countries that primarily use litter as a fuel.

For on-site electricity and heat generation, smaller direct combustion systems are being researched and developed could supply both environmentally sustainable waste disposal and energy.

Poultry litter and dry manure can be incinerated for on-farm production of heat in small furnaces, or transported to central locations where they are combusted on a large scale for the generation of electricity.

- **Animal refeeding**

Poultry litter has been estimated to be as much as three times more valuable as a feedstuff than as a fertilizer for crop nutrients.

The refeeding of poultry processing by-products is a common and acceptable practice in most, but not all, cultures.

Advances in the treatment and processing of feathers and offal to produce value-added feed ingredients are making this practice more attractive in some regions, especially with the recent increases for feeds derived from grains.

- **Ethanol production (biofuels)**

It is also likely that poultry litter could be suitable for lignocellulosic alcohol production. If this technology is viable, this waste could supply biofuels to Australia and potentially reduce the demand for grain destined for ethanol production.

- **Vermiculture**

The use of specially selected earthworm species to degrade waste is known as vermiculture.

This technique has been widely adopted by home gardeners to utilize green wastes and vegetable scraps.

Vermiculture has the potential to produce both humic rich vermi-compost (vermicast) and meat meal (vermimeal) from litter.

Traditionally, the vermiculture process has primarily been adopted to produce vermicast, a recognized valuable organic fertiliser.

Self-Check -6	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List method of using poultry waste(6pts)

Note: **Satisfactory rating – 6 points** **Unsatisfactory - below 6 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-7	Disposing all deceased poultry and unwanted biological material

Handling Mortalities

☞ **In-barn collection**

a) Mortalities should be collected on at least a daily basis and examined for signs of disease. This includes external parasites.

b) Mortality spikes or steady increases should be reported to a veterinarian.

c) Veterinarian must be notified upon suspicion of a reportable disease.

d) Mortality collection vessels should not be shared between barns – each barn should have its' own clearly identified vessel with a tight-fitting lid.

e) After collection of mortality, collection vessel(s) should be sealed and removed from the barn immediately.

f) Remember to use disposable gloves and wash your hands with hand sanitizer.

☞ **Storage**

a) Carcasses should be covered or placed in a secure container, which does not allow escape of feathers or organic matter, immediately after collection and not be left exposed to the environment.

b) Mortalities must be stored inside the Controlled Access Zone (CAZ) and away from water or feed sources. The minimum width of the zone is 15 meters. This distance may vary according to individual farm set up and/or species present.

c) Carcasses to be frozen should be bagged and sealed immediately after collection

If mortalities are to be stored before disposal, storage should be considered only for short time periods (several hours). Disposal treatment should be undertaken as soon as possible.

e) Storage area must be free from flies, rodents, and other pests

f) Disposal of mortalities should occur on the same premise as the barn(s) and not moved to another premise

g) Whenever mortalities are moved off the premise where they died, they MUST be in sealed containers during transit as mentioned above.

h) Clean and disinfect the mortality storage vessel regularly.

Mortality Disposal

General

a) Mortalities may be disposed inside the Controlled Access Zone. Where mortalities are not disposed within the Controlled Access Zone, the area in

which they are stored should be clearly identified with restricted access signage and no one should enter the area without taking proper biosecurity measures.

b) Mortalities should not be disposed of near water or feed sources.

c) Mortality disposal areas should be down wind of flock rearing zones (prevailing wind).

☞ **Composting**

a) Composters should:

- ✓ be of a design and be operated in a manner to ensure proper composting temperatures are attained and full and rapid decomposition of carcasses occurs.
- ✓ be checked for proper internal operating temperature (40 – 60 degrees Celsius) twice per week
- ✓ not allow exposure of carcasses to disease vectors such as flies, birds, rodents, or other animals.

☞ **Incineration**

a) The area in which incineration takes place should be clearly identified with restricted access signage. No one should enter the area without taking proper bio-security measures.

b) The capacity of the incinerator should be pre-determined and displayed in the view of the farm employee in order to prevent exceeding capacity.

c) Ensure complete incineration each run.

d) Keep incinerator clean and maintained.

☞ **Burial**

a) On-farm burial is prohibited if any of the following points apply to the area:

- ✓ More than 600 mm annual precipitation
- ✓ Less the 1 m depth to ground water during season high ground water level
- ✓ Shallow soils over bedrock or coarse soils such as gravel

b) Burial is not an approved practice for the Fraser Valley due to the above stated limitations

c) Buried carcasses must be covered immediately with a sufficient soil cover to exclude birds, rodents and other scavengers.

Self-Check -7	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the activities done In-barn collection of mortalities? (5pts)
2. How we store dead birds until dispose. (2pts).
3. What are the mortality disposal method? (3pts)

Note: **Satisfactory rating – 10 points** **Unsatisfactory - below 10 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-8	Recording information relating to work in Bio-security

Recording is simply to collect relevant information that can help you to take good decisions and to keep track of activities, production and important events on a farm. Records can be about any performance of the animals, economic development, or any activity of the farmer or veterinarian. It is important to keep record keeping simple, and to keep records systematic. Daily inspection of poultry by trained staff is the best method to prevent serious outbreaks of disease. Inspections will enable you to detect early signs of disease simply by noting changes in the behavior and condition of individual hens.

Documentation and Records

- ✓ Recording procedure. All the procedures should be documented.
- ✓ Flock Health Records are to be maintained.

The following flock records must be kept:

- ✓ Movement of stock onto and off the premises;
- ✓ Production performance;
- ✓ Morbidity and mortality with causes;
- ✓ Any laboratory tests with results
- ✓ Place of origin of the poultry
- ✓ Visitors and deliveries;
- ✓ Details of chemical usage
- ✓ Medicine/vaccine administration

Table 3. Poultry Health Record

ID	Breed	Sex	Age	Illness or Symptoms	Treatment	Date Treated	Cost of treatment

Table 4. **Poultry Death Record**

ID	Breed	Sex	Age	Date of Death	Cause

Self-Check -8	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List flock records that will be kept. (3pts)
2. Define recording. (1pt)

Note: **Satisfactory rating – 4 points** **Unsatisfactory - below 4 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

List of Reference Materials

1. https://www.labmanager.com/lab-health-and-safety/2017/07/handling-and-storing-chemicals#.XhwXHVUzbIU.
2. ILO/CIS. (1999). International Hazard Datasheets on Occupation Poultry Farm Worker Updated by the HDOEDIT program. Approved by DG. Last update: 19.05.2000.
3. USDA NPIP. (2014). Animals and Animal Products Title 9. Part 145: §147.21

POULTRY PRODUCTION

Level III

Learning Guide -75

Unit of Competence: - Implement poultry Farm Biosecurity Plan

Module Title: - Implementing poultry Farm Biosecurity Plan

LG Code: AGR PLP3 M18 0120LO1LG- 75

TTLM Code: AGR PLP3 TTLM 0120v1

LO 3: Assist in maintaining Bio-security site procedures

Instruction Sheet	Learning Guide # 75

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Informing Bio-security site procedures to all visitors and providing appropriate clothing and footwear.
- Requiring Visitors to sign in, state their recent activities
- Observing any breaches of Bio-security procedures by visitors.
- Keeping locked gates and doors.
- Maintaining installed, security fencing according to supervisor's instructions.
- Checking deliveries to site ensure that established procedures for vehicle decontamination

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, **you will be able to –**

- ✓ Informe all visitors about the Bio-security site procedures and provide appropriate clothing and footwear.
- ✓ Require visitors to sign in, state their recent activities and exposures, and wash or shower.
- ✓ Note and report any observed breaches of Bio-security procedures by visitors to supervisor.
- ✓ Keep gates and doors locked.
- ✓ Install and maintain security fencing.
- ✓ Check deliveries to site to ensure that established procedures for vehicle decontamination, unloading and receipt and holding or storage of stock and/or supplies are followed

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, - 6”.
4. Accomplish the “Self-check 1 - 6” **in page -2, 5, 7,10,15 and 18** respectively.

Information Sheet-1	Informing Bio-security site procedures to all visitors and providing appropriate clothing and footwear.

Personnel should discuss appropriate biosecurity measures with the visitors and are encouraged to adopt more stringent measures, as appropriate, into the procedures for that specific facility.

Prior to the Visit

- ✓ Avoid wearing or using any apparel or equipment that cannot be easily cleaned and disinfected. Consider bringing bags to keep sensitive equipment such as phones, and cameras clean.
- ✓ When visiting a facility with various age groups of one species in one day, visit the youngest animal group first. Poultry is an exception. Poultry breeding stock should be visited before other commercial birds.
- ✓ Designate a part of the vehicle to carry “dirty” items, preferably separate from the “clean” part of the vehicle where clean supplies are placed, e.g. the dirty area could be inside the trunk of a car. After the above point take place the personnel should give the appropriate PPE. The following clothing and supplies should be considered for visits to livestock and poultry facilities.

Clothing/Personal Protective Equipment

 Plastic coveralls (disposable outerwear) or cloth coveralls

 Standard steel-toed safety boots with disposable boot covers

 Disposable gloves (e.g., nitrile, or vinyl)

 Hair nets

 Filtering face piece (respiratory protection beyond this is not anticipated but if necessary, would require additional supplies and procedures)

 Safety glasses with impact protection

 Hardhats

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What are the points the visitor does prior to visit? (2pts)
2. List PPE used during visit. (3pts)

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	**Requiring Visitors to sign in, state their recent activities**

Visitors declaration poultry farm entry permit

Authorization for Entry to:

……...

Authorization for:

…….

Date of Entry:

……

- ☐ Entry to the farm is subject to the following conditions:
- ☐ I do not have poultry, caged birds or pigs at home.
- ☐ I have not been in contact with any avian species or untreated poultry manure within 12 hours.
- ☐ Wear protective clothing provided.
- ☐ Wear protective boots.
- ☐ Sanitize boots in the footbath provided on entering farm/shed.
- ☐ Sanitize hands before entering sheds.

I agree to the terms and conditions of entry.

Object of visit …….

Name…….

Signature……

Visitors log sheet template

Table 5. Visitor log sheet

Date & Time of Arrival	Name	Company	Phone Number C = cell W = work H = home	Have you visited other poultry today? (Y or N)	Did you enter the barns? (Yor N)	Reason for Visit

This log sheet should always be complete and up to date.

Self-Check -2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the activities the visitors sign to visit your poultry farm before entering. (5pts).

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Observing any breaches of Bio-security procedures by visitors.

Biosecurity principles include simple procedures and practices which when applied prevent entry of disease agents into a farm or the exit of the disease agent from infected premises. This may involve protocols, practices, and manouvres to ensure that clean flocks remain free from entry of disease agents and that disease agents remain confined in infected flocks and do not spread to other premises. It includes controlling movement of stock, persons, equipment and products into the clean farm and out of infected premises; and finally, it involves methods that enable farm to remain in a state of sustained cleanliness, referred to as sanitation.

There were many bio-security flaws identified at different points along the value chain from the farm to the consumer where disease could be spread between birds and to humans. Live bird markets, slaughter houses and dry and wet methods of plucking feathers were particularly weak areas likely to lead to disease spread. Disposal of manure, dead birds and slaughter waste are other areas to be looked at carefully.

Persons constantly exposed to high concentrations of poultry dust and aerosol, for example those in live bird markets, slaughter houses, poultry houses and meat processing handling poultry were identified as being at high risk of contracting avian influenza disease. Simple procedure like washing hands and personal hygiene will reduce chances of getting infected.

So, by having the above information if the visitors or other persons breach the steps occur in bio security it better to react or report to the supervisor immediately to solve to the problem.

Self-Check -3	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What do you do if you observe breaches of Bio-security procedures by visitors? (3pts).

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Keeping locked gates and doors.

1. Locks + Chains

Prevent unauthorized people from entering into the chicken house, entering into the chicken house, risking the transmission of diseases

Figure 6. **Locks + Chains**

2. Screened walls and windows

Prevent contact of poultry inside the chicken house with wild and domestic animals and birds from the outside

Figure 7. Screened walls and windows

Locked Barn Entrance

All poultry barn entrances shall remain locked at all times that the barn is unsupervised by farm personnel.

Barn entrances are high disease transmission risk areas and are the last line of defense in preventing disease transmission. It is therefore necessary to prevent inappropriate access.

a. Barn entrances that can only be opened from the inside are considered locked.

b. Barns should provide sufficient functional exits for the safety of personnel inside the building.

c. All animals are prohibited from the Restricted Access Zone, unless in compliance with other Board audited programs.

Locks need not be sophisticated items. For most doors, through which routine entry is not required (e.g. loadout doors), barrel bolts or bars operated from the inside would be sufficient. On the main entry, however, a door that is lockable from the outside is required and lockable from both sides is recommended. A simple keyed passage set would be all that is required. Once inside, it is not necessary for the worker to lock the door.

For emergencies, it is advisable to have two doorways near opposite ends of the barn that are easily opened from the inside to allow rapid escape if required.

Self-Check -4	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is the benefit of Keeping locked gates and doors.? (3pts).

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-5	Maintaining installed security fencing

Secure barriers are the first line of defense in minimizing the transmission of infectious diseases both to and from the farm operation.

The barrier should be a fixed gate, chain or equivalent that restricts access.

- The secure barrier must remain closed other than:
  - When a vehicle is passing into or out of the CAZ
  - When a limited activity such as feed delivery or manure handling is underway
  - When the CAZ is supervised
- The secure barrier should deter unauthorized foot traffic.
- The barrier must be capable of being secured with a lock.
- All secondary access barriers must be closed other than when a vehicle is passing through them or when a time limited activity such as manure hauling is underway.
- Driveways that do not provide vehicular access to the Controlled Access Zone do not require a secure barrier.
- For safety reasons, the primary access should provide sufficient room for all vehicles to get completely off a public road.
- Where feasible, farm residences should be accessed from outside the Controlled Access Zone.

Figure 8. secure Farm gate

Controlling access to the farm

Infectious agents (viruses, bacteria, fungi and parasites) can attack your chickens. They can reduce your returns and they can threaten consumer confidence in your product. People, pets, birds, rodents, and other animals can all be carriers. The first line of defense for your flocks is to limit what comes into contact with them.

You must create two zones of protection on your farm:

- ✓ A Controlled Access Zone (CAZ) around the outside of the barns.
- ✓ A Restricted Area (RA) that includes the inside of the barn where the birds are actually located along with any other part of the barn that the farmer has included as part of the RA.

This doubles the safety of your flock: once the zones are in place, make sure people respect them. Insist that they follow your rules to the letter.

Each farm must design/draw a diagram to indicate the location of the CAZ and the RA. This diagram needs to include the barn and entry room, the layout of the property including roadways, feed bins, etc, and a clear distinction of where the two control zones are located. This diagram will help to educate workers and visitors about the different zones on the farm.

Fence + gate + warning signs

Fence around the farm + gate + warning signs Fence around the farm + gate + warning signs to control the movement into the farm of people, vehicles, equipment and other animals that might carry diseases into the farm from the outside

Figure 9. Fence

Figure 10. Warning signs.

Figure 11. warning sign

Creating a Controlled Access Zone (CAZ)

A Controlled Access Zone (CAZ) will help you break the cycle of contact between the outside environment and your birds. This reduces the risk of bacterial and disease transfer to your flock.

Limit access to the facilities inside this zone. You should only let people enter who are essential for an effective operation. Discourage visitors and keep them to a minimum. No livestock should be permitted inside the CAZ.

The perimeter of the CAZ must include the barn and feed tanks as well as any utilities (e.g. Propane, fuel, hydro meters) that are in close proximity to the barn. Manure storage areas must be outside the CAZ.

While there may be a larger area on the farm surrounding the barns where people and vehicle access is limited, the CAZ is the designated area around the barn that must be kept maintained (e.g. grass cut, etc) and free of rodent attractants (e.g. firewood piles).

The layout of your farm site and the location of your barns will have a big influence on how you design your CAZ. Within the limits your site sets, it is highly recommended that the zone be at least 15 metres (15 m) around each barn, (manure storage areas must be outside of the zone).

On the farm, you must clearly identify the access/entry points (i.e. roadways) to the CAZ by a sign or physical barrier so that people entering the farm know where they are not allowed to have access.

Self-Check -5	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List the use of secure barrier (3pts).

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-6	**Checking deliveries to site ensure that established procedures for vehicle decontamination**

The occupant area of any vehicle cannot contain loose objects. Any equipment or storage items in this area must be secured. So, the worker/farmer check weather vehicle is arrived and carryout the following points to decontaminate the vehicles.

- ✓ vehicles should be clean prior to site visits. Critical areas include the chassis, wheel wells, tires, equipment storage areas, seats, and floor mats (areas where organic material can accumulate and cross-contaminate objects such as footwear/equipment or physically be deposited on the site)
- ✓ Designate clean and dirty compartments in the vehicle

- ✓ For sedans, the clean compartment may be the passenger area and the dirty compartment the trunk
- ✓ In trucks with extended cabs, the clean compartment may consist of the area behind the front seats or the truck box may be divided into clean and dirty sides with a plastic or other suitable divider
- ✓ Separate and store clean and dirty items in totes. Ensure totes/plastic containers are designated and labelled as clean or dirty
- ✓ Store clean equipment/materials inside clean totes in plastic containers/bags ready for use. In the event that contamination of the tote occurs, materials will remain clean. The external surface of totes should be cleaned and disinfected after each site visit and as necessary; the inside surfaces should be cleaned and disinfected as necessary
- ✓ Store clean coveralls and forms in the clean compartment until used on the premises
- ✓ Never enter the clean compartment wearing used coveralls or place garbage bags and items that have been on the premises in the clean area. Always move equipment from the clean to the dirty compartment of the vehicle
- ✓ To facilitate cleaning and disinfection of the driver's seats, consider using a washable seat covering
- ✓ Provide rubber (washable) floor mats for each person in the vehicle
- ✓ Protect trunks and truck boxes with a single piece of rubber or heavy plastic liner, which can be removed for cleaning and disinfection

Self-Check -6	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Describe the points taken into consideration to secure vehicle from contaminants. (3pts).

Note: **Satisfactory rating – 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

List of Reference Materials

1. https://www.amazon.com/**Chicken**Guard...**Chicken-Locking**.../B07GL47Z4G.
2. https://bcbhec.com/wp.../BiosecurityProducerManualDecember2012.pdf.

The teachers (who developed the Learning Guide)

No	Name of Learning guide developer	TVET Represent	Phone number	e-mail
1.	**Abadi Brhanu**	Maichew ATVET College	0920870056	adonayabadi@gmail.com
2.	**Alemayehu Tolera**	Bako ATVET College	0994132626	toleraalex@gmail.com
3.	**Alemu Abate**	Burie Ploy-technic TVET College	0912355539	adoni4@gmail.com
4.	**Alula Tesfaye**	Assosa ATVET College	0912004697	alula188@gmail.com

5.	**Bekele Abdissa**	Agarfa ATVET College	0920839098	bakeabdi@gmail.com
6.	**Dereje Kebede**	Nedjo ATVET College	0911530210	Derejekebed2012@gmail.com
7.	**Ewunetu Bekele**	Bako ATVET College	0920096917	esewunetu@gmail.com
8.	**Mesfin Getachew**	Walaita Soddo ATVET College	0916475289	dukekeshamo@gmail.com
9.	**Terefe Tolcha**	Alage ATVET College	0911067132	terefetc@gmail.com