

# **Poultry Production (Perform Preventive and Therapeutic Measures) Module 5**

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**We value your feedback and recommendations.**

**Department of Education  
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## MODULE 5: Perform Preventive and Therapeutic Measures

CONTENT STANDARD	PERFORMANCE STANDARD
The learner demonstrate understanding in the effective health and sanitation management program and practices for successful poultry production.	The learner independently demonstrates the knowledge, skills and attitudes required to perform effective preventive and therapeutic measures in poultry production.

### I. INTRODUCTION

This lesson deals with poultry parasites and diseases, their prevention and control. This lesson will also serve as an important guide for the learners in familiarizing some of the common poultry parasites and diseases as well as their prevention and control, which learners and prospective poultry raisers should know. The knowledge and skills in this particular Module is an important aspect of managing a poultry farm.

The learners and potential poultry raisers should also bear in mind that diseases should not be considered as the ultimate deterrent in raising poultry, simply because, diseases can be prevented and controlled if they have the proper knowledge and skills in doing so.

### II. LEARNING COMPETENCIES

At the end of this Module, students should be able to:

1. identify poultry parasites and diseases based on their signs and symptoms;
2. apply preventive measures in accordance with industry and farm production standards;
3. observe strictly precautionary measures in the use of biologics: and
4. implement medication and vaccination programs in accordance with industry and farm production standards.

### III. PRE-/DIAGNOSTIC ASSESSMENT

Let's find out how much you already know about selecting and procuring stocks for egg/meat production. Answer the questions below. Write only the letter of the correct answer in your activity notebook.

1. A practical way to hasten the adaptive efficiency of chickens to discharge infection is to \_\_\_\_\_.
  - a. deprive them of feed and water
  - b. expose birds to inclement weather
  - c. expose them to extreme temperature
  - d. use antibiotic- vitamin-mineral supplements
  
2. To prevent the occurrence of pest and diseases, construct poultry houses that will provide adequate ventilation and facilitate cleaning, disinfection and maintenance of \_\_\_\_\_.
  - a. sanitary conditions
  - b. vaccination facilities
  - c. medication supplies.
  - d. utilities.
  
3. One of the efficient ways to eliminate infectious organisms from the farm is to practice periodic \_\_\_\_\_.
  - a. partial depopulation
  - b. compartment depopulation
  - c. complete depopulation
  - d. cage depopulation

4. Disease infestation is more likely to occur when \_\_\_\_\_
- a. there is an insufficient space for feeder and waterer.
  - b. the bird quarters are overcrowded.
  - c. there is an improper hygiene and sanitary measure.
  - d. the selection a, b and c happens.
5. An impairment that interrupts the performance of the vital functions of poultry birds is called \_\_\_\_\_.
- a. inclement weather
  - b. disease
  - c. parasites
  - d. cannibalism
6. The following are signs of Chronic Respiratory Diseases (CRD) EXCEPT\_\_\_\_\_.
- a. gasping, coughing, rattling of the windpipe
  - b. foamy exudates in the eyes
  - c. reduced feed consumption and lose of weight
  - d. tracheal rales, sneezing, coughing, watery or sticky discharge from the nostrils, swelling of the face
7. What is the most important thing to do when disease starts in a flock?
- a. Dress all birds affected by the disease
  - b. Let the disease attack the flock
  - c. Market all your stocks
  - d. Prevent the disease from spreading

8. The following are possible sources of infection which can bring health risks to the flock EXCEPT \_\_\_\_\_.
- a. improper disposal of dead birds
  - b. improper lighting
  - c. improper disposal of manure
  - d. unsanitary surroundings
9. To prevent disease outbreak in the farm, which should NOT be included in a vaccination program?
- a. 8-10 days- NCD
  - b. 11-20 days- NCD
  - c. 21-24 days- Fowl Pox
  - d. 26-28 days- NCD
10. Which of the following is an effective treatment for INFECTIOUS CORYZA (colds or sipon)?
- a. Broad spectrum antibiotics applied in feed and water and sulfa preparation
  - b. Vitamin D and extra phosphorous
  - c. No effective treatment against the disease
  - d. Vaccination

## **LESSON 1**

### **POULTRY DISEASES AND PARASITES: THEIR PREVENTION AND CONTROL**

#### **WHAT TO KNOW?**

At the end of the lesson, learners should be able to:

- a. identify pest and diseases through its characteristics;
- b. demonstrate skills in preventing poultry parasites and diseases effectively; and
- c. practice the proper process of vaccination and its precautions.

#### **PROCESS**

Poultry diseases are one of the major setbacks in poultry production. A disease is an impairment that interrupts or modifies the performance of the vital functions of poultry. It is usually characterized by inherent weakness. Poultry raisers suffer considerable losses when their birds are attacked by diseases. The spread of diseases poses a grave threat to the poultry industry. Some poultry raisers are never able to recover from losses due to diseases.

However, diseases should not be considered as the ultimate deterrent to raising poultry because diseases can be controlled and prevented.

When diseases start in a flock, the most important thing to do is to act quickly to prevent the disease from spreading. It is only through prompt action and care that damages of poultry diseases may be reduced to the minimum. Precautionary measures should be undertaken immediately and, whenever possible, treatment should begin at once.



For the prevention of infectious diseases, observe the following guidelines:

1. Construct poultry houses that will provide adequate ventilation and facilitate cleaning, disinfection, and maintenance of sanitary conditions. Poultry houses should preferably be fenced with chicken wire or any other suitable materials to provide protection from other animals that may serve as carriers of diseases or be a nuisance to the general comfort of the flock.
2. Provide the flock with comfortable quarters equipped with proper fixtures. Overcrowding, lack of feeding and watering space and substandard brooding procedures can easily cause the outbreak of a disease.
3. If possible, practice the all-in-all-out methods of raising poultry to allow a rest period between operations. Periodic complete depopulation is an efficient way to eliminate infectious organisms from the farm as many of these cannot survive a long period of time without a susceptible host.
4. Purchase stocks from reputable sources. Well-established hatcheries usually have better management and health practices that produce better-quality, disease-free, and disease resistant chicks.
5. As much as possible, the flock should not be exposed to stresses such as inclement weather, extremes in temperature, and a series of vaccination, shipment from far places, feed and water deprivation which can undermine the resistance of birds to infection. Since some of these stresses cannot be avoided, pain killing / soothing measures must be instituted to lessen their adverse effects. The use of antibiotic-vitamin-mineral supplementations are practical to hasten the adaptive efficiency of the chicken's body and help discharge the infection.

6. Use nutritionally balanced feeds and rations, and provide clean drinking water at all times. Malnutrition can cause specific diseases or make the flock susceptible to other diseases.



Courtesy of MMFSL Students

7. Practice effective management of poultry manure and other animal waste. These are possible sources of infection, organisms and parasites which can bring health risks to the flock. Properly disposed animal manure and excrement can be processed into fertilizers for plants.
8. Isolate sick birds and dispose dead birds immediately so as not to spread infection by contaminating the feeds, water, and equipment.
9. Maintain poultry records. These records are useful gauges in determining the profitability and efficiency in production and in keeping track of the general health problems encountered in the project.
10. Consult the services of a veterinarian in case of an outbreak of a disease which is beyond your control. Almost all diseases are easier to cure at the early stages of infection.

Disease outbreak can be prevented by instituting vaccination program.

Below is a sample vaccination program format.

<b>Age of Birds</b>	<b>Type of Vaccine</b>	<b>Route of Administration</b>	<b>Remarks</b>
8-10 days	NCD or Avian Pest Vaccine	Intranasal	Chicks from unvaccinated parents may be vaccinated as early as 3 days of age
21-24 days	Fowl Pox Vaccine	Wing web	May not be given to areas where the disease is not common
26-28 days	NCD	Intranasal or Intramuscular	Chick protection 10-14 after vaccination. Revaccinate if protection is low.

Note: Follow manufacturer's recommendation or consult a veterinarian for a successful vaccination practice.

## COMMON DISEASES OF POULTRY

### INFECTIOUS DISEASES

These are diseases that can be transmitted to other stocks through direct contact, air, mechanical means and even by farm visitor.



Courtesy of MMFSL Students

### AVIAN PEST (New Castle Disease)

Causal organism	New Castle Disease Virus
Transmission	<ul style="list-style-type: none"> <li>• Direct contact with the nasal and mouth discharges of infected birds</li> <li>• Airborne transmission</li> <li>• Through mechanical means such as being carried by birds, predators, etc.</li> <li>• Farm visitors with contaminated clothes and shoes</li> </ul>
Signs	<ul style="list-style-type: none"> <li>• Sharp drop in feed intake; decrease in egg production</li> <li>• Gasping, coughing, rattling of the windpipe, coarse chirping, paralysis, twisting of neck and head, and high mortality of birds.</li> </ul>
Prevention	<ul style="list-style-type: none"> <li>• Vaccination,( consult your veterinarian for a program suited to your operation)</li> <li>• Disinfecting all watering and feeding equipment</li> <li>• Isolating infected birds from healthy ones</li> </ul>
Treatment	<ul style="list-style-type: none"> <li>• No known treatment</li> </ul>

## CHRONIC RESPIRATORY DISEASE (CRD)



Courtesy of MMFSL students

Causal organism	Mycoplasma gallisepticum
Transmission	<ul style="list-style-type: none"> <li>• CRD organism is egg-borne; exposure to infected flock</li> <li>• Airborne</li> <li>• Contaminated feed, water and farm equipment. Direct contact with the nasal and mouth discharges of infected birds</li> </ul>
Signs	<ul style="list-style-type: none"> <li>• Tracheal rales, sneezing, coughing, watery or sticky discharge from the nostrils, swelling of the face</li> <li>• Foamy exudates in the eyes</li> <li>• Reduced feed consumption and loss of weight</li> <li>• Rapid spread, decreased egg production</li> </ul>
Prevention	<ul style="list-style-type: none"> <li>• Rigid sanitation</li> </ul>
Treatment	<ul style="list-style-type: none"> <li>• Broad spectrum antibiotics, either by injection or mixed with the feeds or drinking water</li> </ul>

## FOWL FOX



Courtesy of MMFSL students

Causal organism	Virus
Transmission	<ul style="list-style-type: none"><li>• Spread by mosquitoes which feed on pox-infected birds; direct contact</li><li>• Mechanically transmitted by visitors, wild birds and predators</li></ul>
Signs	<ul style="list-style-type: none"><li>• Dry form-characterized by the formation of black wart-like nodules on the skin of the face, in the region of the comb, wattles, and around the eyes, causing the latter to swell and close. There is usually profuse eye discharge.</li><li>• Wet form-characterized by the presence of whitish yellow growth of the pharynx, larynx, and windpipe. Because of the growth, there is difficulty in breathing which will result in death</li></ul>
Prevention	<ul style="list-style-type: none"><li>• Vaccination with fowl pox vaccines. Mosquito control by spraying with insecticides.</li></ul>

Treatment	There is no effective treatment against the disease. In the wet form, removal of the wart-like growth in the throat usually leads to recovery. In the dry form, the early application of tincture of iodine directly on the wart-like growth has been found to give beneficial result.
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## INFECTIOUS CORYZA (Colds or Sipon)

Causal organism	Haemophilus gallinarum
Transmission	<ul style="list-style-type: none"> <li>• Through the air, direct contact through contamination of the feed , water equipment</li> <li>• Sudden change in temperature</li> <li>• Unsanitary housing conditions</li> </ul>
Signs	<ul style="list-style-type: none"> <li>• Swelling of the face and wattles and discharge from the nostrils, which at first is watery becomes sticky and with foul odor as the disease progresses</li> <li>• Decrease in feed intake</li> <li>• In laying flock, decrease in egg production</li> </ul>
Prevention	<ul style="list-style-type: none"> <li>• Strict sanitation of the farm. Immediate isolation of sick birds</li> <li>• Avoid stress conditions</li> </ul>
Treatment	<ul style="list-style-type: none"> <li>• Broad spectrum antibiotics applied in feed and water and sulfa preparation</li> </ul>

## **Other Common Poultry Diseases and Their Treatment:**

1. **INFECTIOUS BURSAL Disease (GUMBORO).** This is a highly contagious viral infection which can cause increased mortality and reduce growth rate in chicks from two to six weeks of age. The disease is prevalent whatever poultry is kept. Live and killed vaccines are available. These vaccines can induce high levels of maternal antibodies in chicks which give protection for about four to five weeks.
  
2. **AVIAN MALARIA.** This is a protozoan infection of the blood stream in tropical areas which is spread by mosquitoes. Avian malaria is characterized with the chickens dropping their heads and frequent chilling. It causes reduced egg production and eventually results in mortality. There is no known effective treatment. However, maintenance of sanitation and hygiene through proper drainage will eliminate the growth of the mosquito carriers to prevent this disease.
  
3. **COCCIDIOSIS-** This disease is one of the most dangerous diseases among poultry. It is caused by small protozoan parasites called coccidian which attack the digestive system. Chicks from two weeks to three months old are highly susceptible. Chicks suffering from this disease become droopy and depressed.
  
4. **NON-INFECTIOUS DISEASES**
  - a. **Cage Layer Fatigue.** This ailment is characterized by paralysis with thin brittle bones resulting frequent. It occurs in high producing commercial layers kept in cages. Most often, it is associated with deficiency of calcium and phosphorous in the diet. Treatment with Vitamin D and extra phosphorous may be helpful.



- b. **Scaly Leg** .This disease caused by mites burrowing under the scales of the poultry's legs and feet. As a result, the shanks become enlarged and roughened, and in serious cases, the affected birds may become lame. The disease may be treated by brushing off the crust after soaking the legs in soapsuds, and coating the clean portions with creolized Vaseline.



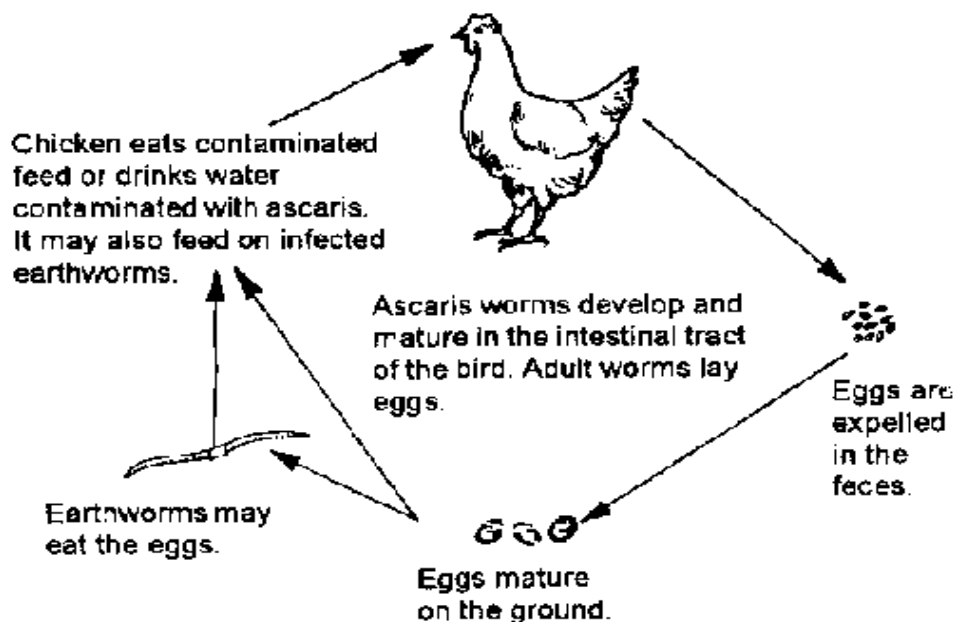
Taken from Tech-Voc. Module

Dipping the legs in kerosene and coconut oil mixture of one to one proportion is another effective treatment for scaly leg.

Among the Internal and External Parasites that Infest Poultry are the following:

## Internal Parasites

1. **Intestinal worms.** The most common intestinal worm is the roundworm and tapeworm. Roundworms are long, cylindrical, and vary in size from a centimeter or less to more than ten centimeters in length. Tapeworms are long, flat and segmented. Young birds that are affected with intestinal worms become very thin, dull and sleepy. Drugs to control worms are available in the local market.

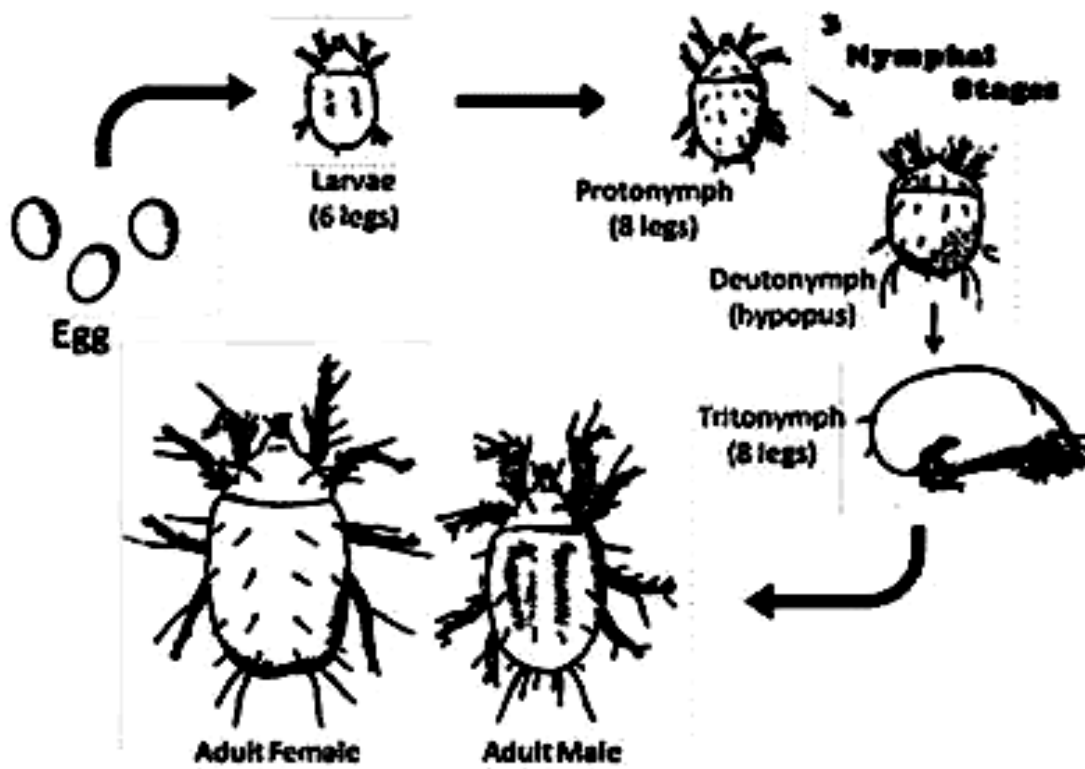


The Life Cycle of Intestinal Worm (Taken from Tech-Voc. Module)

## External Parasites

1. **Lice.** They do not cause serious harm to adult fowls, except when they are heavily infested, when chicken lose vigor and become susceptible to other diseases. Laying flocks heavily infested with lice will not lay eggs regularly. A good insect powder like sodium fluoride may be sprinkled underneath the feathers to kill the lice. Nicotine sulfate solution applied in the upper surface of the roost will also keep the flock free from lice.
2. **Mites.** Layers are disturbed by mites. Infested young chicks lose their vigor and vitality and become emaciated. Effective preventive measures against mites are cleanliness, dry surroundings, good ventilation, and sufficient sunlight. To control mites ,a nest that is badly infested should be burned and roost, nest, and walls of the house should be painted with nicotine sulfate solution.





The Life Cycle of Mites (Taken from Tech-Voc. Module)

## Guidelines for Vaccination

1. Vaccinate only the healthy birds as much as possible.
2. Vaccines should be purchased from a reliable source. Use vaccines that are properly kept or refrigerated.
3. Do not buy or used expired vaccines and those with broken seal. Always check the expiration date and read the label for instruction. Check all the contents for any sign of damage, like discoloration, moldy growth and the like.
4. Vaccination direction and schedule should be strictly followed.
5. When there is a disease outbreak in the farm such as Chronic, Respiratory Disease Infectious CORYZA and COCCIDIOSIS, vaccination must not be administered.
6. Clean only and wipe dry the surface of the rubber stopper of vaccine vials with sterile absorbent cotton before inserting needles.

7. Use only approved diluents for vaccines, preferably use one that comes on the vaccine.
8. Vaccine should be administered within one hour after reconstitution.
9. Empty vials and left over of reconstituted vaccines should be properly dispose immediately.
10. Unnecessary stress to the birds should be avoided particularly during vaccination time.
11. If there is a disease outbreak in the farm, a veterinarian should be consulted.

## **Farm Waste Disposal**

1. Manure – Chicken manure can be utilized as soil fertilizer by drying and mixing them to the soil and as fish feed.
2. Dead birds – Dead birds can be disposed properly by burying or burning.

Bury dead birds at least three feet below soil surface. Apply lime to the dead birds before covering them with soil.

Burning of dead birds should be done in an enclosed farm facility to avoid any possible contamination of the place and other animals.

## REFLECT AND UNDERSTAND

Answer the following questions. Write only the letter of your answer in your activity notebook.

1. What is the most important thing to do when disease starts in a flock?
  - a. Dress all birds affected with the disease.
  - b. Let the disease attack the flock.
  - c. Market all your stocks.
  - d. Prevent the disease from spreading.
  
2. An impairment that interrupts the performance of the vital functions of poultry animal is called \_\_\_\_\_.
  - a. disease
  - b. inclement weather
  - c. parasites
  - d. cannibalism
  
3. Disease infestation is more likely to occur if \_\_\_\_\_.
  - a. there is insufficient space for feeder and waterer.
  - b. the bird quarters are overcrowded.
  - c. there is an improper hygiene and sanitary measure.
  - d. the selection a, b and c is present.
  
4. A practical way to hasten the adaptive efficiency of chickens to discharge infection is to \_\_\_\_\_.
  - a. expose birds to inclement weather
  - b. expose them to extreme temperature
  - c. deprive them of feed and water
  - d. use antibiotic- vitamin-mineral supplements

5. The following are possible sources of infection which can bring health risks to the flock EXCEPT\_\_\_\_\_.
- a. improper disposal of dead birds
  - b. improper disposal of manure
  - c. unsanitary surroundings
  - d. improper disposal of dead birds, manure and unsanitary surroundings

## **TRANSFER**

Implement preventive measure against diseases

1. Following the vaccination program for birds, prepare and undertake medication and vaccination for broilers and layers. Consult a veterinarian or poultry supply store owners to find out what available drugs are effective in preventing and controlling common poultry parasites and diseases.
2. Proceed to some poultry farm in your locality to find out which diseases and parasites are the most prevalent. Ask the owners about the preventive and control measures they use in treating these common diseases and parasites.

## V. SUMMATIVE ASSESSMENT

Answer the questions below. Write only the letter of the correct answer in your answer sheet.

1. A practical way to hasten the adaptive efficiency of chickens to discharge infection is to \_\_\_\_\_.
  - a. deprive them of feed and water
  - b. expose birds to inclement weather
  - c. expose them to extreme temperature
  - d. use antibiotic- vitamin-mineral supplements
2. To prevent the occurrence of pest and diseases, construct poultry houses that will provide adequate ventilation and facilitate cleaning, disinfection and maintenance of \_\_\_\_\_.
  - a. sanitary conditions
  - b. vaccination facilities
  - c. medication supplies
  - d. utilities.
3. One of the efficient ways to eliminate infectious organisms from the farm is to practice periodic \_\_\_\_\_.
  - a. periodic partial depopulation.
  - b. periodic compartment depopulation.
  - c. periodic complete depopulation.
  - d. periodic cage depopulation.
4. Disease infestation is more likely to occur when
  - a. there is an insufficient space for feeder and waterer.
  - b. the bird quarters are overcrowded.
  - c. there is an improper hygiene and sanitary measure.
  - d. the selection a, b and c happens.

5. An impairment that interrupts the performance of the vital functions of birds is called \_\_\_\_\_.
- a. inclement weather
  - b. disease
  - c. parasites
  - d. cannibalism
6. following are signs of Chronic Respiratory Diseases (CRD) EXCEPT \_\_\_\_\_.
- a. gasping, coughing, rattling of the windpipe
  - b. foamy exudates in the eyes
  - c. reduced feed consumption and lose of weight
  - d. tracheal rales, sneezing, coughing, watery or sticky discharge from the nostrils, swelling of the face
7. What is the most important thing to do when disease starts in a flock?
- a. Dress all birds affected by the disease.
  - b. Let the disease attack the flock.
  - c. Market all your stocks.
  - d. Prevent the disease from spreading.
8. The following are possible sources of infection which can bring health risks to the flock EXCEPT \_\_\_\_\_.
- a. improper disposal of dead birds
  - b. improper lighting
  - c. improper disposal of manure
  - d. unsanitary surroundings



9. To prevent disease outbreak in the farm, which should NOT be included in a vaccination program?
- a. 8-10 days- NCD
  - b. 11-20 days- NCD
  - c. 21-24 days- Fowl Pox
  - d. 26-28 days- NCD
10. Which of the following is an effective treatment for INFECTIOUS CORYZA (Colds or SIPON)?
- a. Broad spectrum antibiotics applied in feed and water and sulfa preparation
  - b. Give Vitamin D and extra phosphorous
  - c. There is no effective treatment against the disease
  - d. Vaccination

## VI. SUMMARY/FEEDBACK

This Module is a source of knowledge and skills in preventing and controlling possible poultry diseases and parasites to ensure the success of the enterprise.

## GLOSSARY

<b>Disease</b>	- any deviation from the normal conditions of the body
<b>Excrement</b>	- waste matter taken out from the animals' body
<b>Hygiene</b>	- cleanliness
<b>Inclement weather</b>	- bad weather
<b>Infectious diseases</b>	- transmittable diseases
<b>Manure</b>	- chicken droppings
<b>Outbreak</b>	- violent break of disease affecting large number at once

- Parasite** - an organism that lives on or in another organism to obtain its food
- Prevention** - an advance measure to eliminate the possible occurrence of pest and disease to the flock
- Sanitation** - it is the removal of the disease-causing organism
- Susceptible** - easily affected
- Vaccine** - refers to live and controlled causal organisms of certain diseases for immunization
- Veterinarian** - an animal doctor
- Vaccination** - the introduction of live but weak disease causing organism to develop immunity

## RESOURCES

Laying hens

Lighting facilities

Catching crate

Record notebook

Chicks to be vaccinated

Antibiotics/medicines or Veterinary Drugs

Syringes and needles

## REFERENCES

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Tech-Voc. Modules (raise poultry)