THE REPUBLIC OF KENYA

Ministry of Agriculture, Livestock, Fisheries and Irrigation

COMPETENCY BASED CURRICULUM

FOR

LAYER PRODUCTION OPERATOR

KNQF - LEVEL 3

TVET CDACC
P.O. BOX 15745-00100
NAIROBI

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FOREWORD

Agriculture plays an important role in Kenya's economy. This importance is reflected in the positive correlation between growth in the agricultural sector and that of the national economy. Kenya's economy registered a growth of 3.3% between 2013 and 2014 with agriculture sector being the leading sector contributing 27.3% to the Gross Domestic Product (GDP) in 2014.In this regard, crops, animal production, fishing and aquaculture contributed 19.7%, 4.9% and 0.8% of the GDP respectively totalling 25.4%, while the balance of 1.9% came from forestry and other support activities. Like most countries in Africa, majority (61%) of Kenya's population rely on agriculture for employment despite the challenges of climate change, soil degradation and increasing population pressure. In order to enhance the productivity of the work force and ensure a productive and innovative agricultural sector, as well as food security, meaningful education and training of all people involved is of utmost importance.

In the past Agricultural Technical and Vocational Education and Training (ATVET) did not always receive adequate attention from policy-makers. The current education system emphasizes on acquiring knowledge rather than skills development. This resulted to most farmers and the stakeholders in agriculture lacking the requisite skills. Current reforms in the education system aim at addressing this challenge by reforming the agriculture training curriculum, its delivery and assessment. These reforms can only be achieved through Competency Based Education and Training (CBET) approach. The reforms demands for a competency based curriculum which is a tool that will aid in the development of skills, knowledge and attitudes of the farmers. Such training will improve crop and animal husbandry skills which will in turn contribute to increased productivity and improvement of agriculture in the country. Ideally, this education and training will not only include farmers, but all professions involved in agriculture.

This curriculum for the poultry subsector presents us with a unique approach to training which will allow the trainees to gain skills required in their occupation/jobs. It will also allow them to train on their areas of interest without necessarily undertaking all the modules in the curriculum; this permits flexibility in training with multiple entries and exits. It is therefore the curriculum that will revolutionalize the Agriculture sector in Kenya.

Harry Kimtai,

Principal Secretary,

State Department of Livestock,

Ministry of Agriculture, Livestock and Fisheries.

PREFACE

Poultry farming has been on the increase in the last ten years due to high population density, diminishing land sizes, and the escalating un-employment levels in formal sector. Poultry farming contributes to the lives of 21 million Kenyans and 6.1% of agricultural GDP. There are approximately 32 million birds in Kenya out of which 76% are free ranging indigenous chicken, 8% are broilers and 14% commercial layers. The indigenous poultry production involves 75% of rural households. As of 2011, it was reported that approximately 71% of eggs and poultry meat in Kenya are derived from indigenous poultry. In 2006, it was reported that commercial poultry production constitutes 23.8% of the total poultry population, with broilers representing 16.2% and layers another 7.8%. Other poultry species such as ducks, guinea fowls, Quails and turkeys comprise about 2.2% of the total poultry population .The industry is therefore supposed to play a strategic role in the ongoing socio economic pillar under the vision 2030.

However the industry has seen slow growth over the past years due to lack of skills and increasing costs of production. This is despite the fact that the sub-sector contributes positively to wealth creation, poverty alleviation, and gender equity especially in the rural areas. The industry contributes to the macro economy by generating incomes for the value chain actors, creation of employment opportunities for rural people and provision of source of protein for poor families and manure for their gardens.

To address the challenge of lack of skilled labour, a Competency Based curriculum development process was initiated. Using the DACUM methodology Job Analysis Chart and Occupation standards were developed in collaboration with the industry players and guided by Curriculum Development Assessment and Certification Council (CDACC). Eleven Jobs/Occupations were identified,

Job Analysis Charts were further analyzed through Task Analysis and the information generated used to develop Occupation Standards. The information generated from the task analysis was also used to develop the Units of competences for each job. The result was to the realization of 11 curricula for the poultry subsector .This was done by experts drawn from Technical training institutions, Universities and industry representatives.

The curricula were presented to the Poultry Sector Skills Advisory Committee (PSSAC) who made recommendations for improvement of the curricula and adopted the curricula for its progression to the next stages of approval by the CDACC. The curricula development process was a rigorous exercise that involved wide consultations with various stakeholders with the aim of enriching it and promoting its acceptance. The end product is a rich and well thought tool that will be used to deliver Competence Based Training and produce competent graduates that can employed, entrepreneurs or self-employed in the poultry industry.

Prof Charles M. M. Ondieki, PhD, FIET (K), Con. Eng Tech.

Chairman , TVET CDACC.

ACKNOWLEDGEMENTS

This Curriculum was developed through the combined efforts of different stakeholders in the poultry subsector namely the state department of livestock, private practitioners and regulators. Institutions in the State Departments of Livestock led the process of this curriculum development and key among them were the Dairy Training Institute (DTI), and, Animal Health and Industry Training Institutes (AHITIs). We wish to acknowledge the invaluable contribution received from the private sector industry players who provided inputs towards the development of occupational standards against which this curriculum was developed.

With the Occupational Standards in hand, the stakeholders provided technical inputs towards the development and completion of this curriculum. They sat through many hours putting together all the knowledge, skills and attitudes that a Poultry industry worker would require in effectively performing his / her duties and tasks as per the Occupational Standards developed.

We are most sincerely thankful to the heads of these institutions who released their staff to join in this important course. Our gratitude goes to the various facilitators that moderated several workshops and ensured that all deliberations and outputs were captured and compiled. These persons did not only demonstrate patience, but also provided leadership by motivating and guiding the groups towards the finalization of this curriculum. We cannot forget to thank the government agencies that regulate the Technical and Vocational Education and Training (TVET) system namely TVET Authority and CDACC through whom guidance and support was provided on this curriculum development.

We are greatly indebted to the Food Security and Drought Resilience Programme (FSDRP) with support of the German Development Cooperation (GIZ), which enabled the implementation of this curriculum development process through the Food Security Project (FSP). In the same breath, we are indebted to the National Coordinator of the GIZ Comprehensive Africa Agricultural Development Programme (CAADP) ATVET project who was instrumental in enabling the smooth and close cooperation between the project and the key government ministries namely Ministry of Agriculture, Livestock, Fisheries and Irrigation (MoALF&I) and Ministry of Education (MoE).

Last but not least, we are grateful to any other person, institution, organization or company who played any role in making this process successful but has not been mentioned. We dearly acknowledge your contribution and support.

Dr. Lawrence Guantai M'Itonga, PhD,

Council Secretary/CEO,

TVET CDACC.

ABBREVIATIONS AND ACRONYMS

2D	2 Dimensional
3D	3 Dimensional
AHITI	Animal Health and Industry Training Institute
ATVET	Agricultural Technical and Vocational Education and Training
AU - IBAR	African Union – InterAfrican Bureau for Animal Resources
CAADP	Comprehensive Africa Agricultural Development Programme
CAD	Computer Assisted Drawing
CBET	Competency Based Education and Training
CDACC	Curriculum Development Assessment and Certification Council
CEO	Chief Executive Officer
DACUM	Develop a Curriculum
DTI	Dairy Training Institute
DVS	Director of Veterinary Services
EMCA	Environmental Management and Conservation Act
EMS	Environmental Management Systems
FSDRP	Food Security and Drought Resilience Programme
FSP	Food Security Project
GDP	Gross Domestic Product
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Point
ICT	Information Communication Technology
IM	Intra Muscular
KCSE	Kenya Certificate of Secondary Education
KNQA	Kenya National Qualifications Authority

KNQF	Kenya National Qualifications Framework
KSPCA	Kenya Society for the Care and Protection of Animals
LCD	Liquid Crystal Display
MAP	Modified Atmosphere Packaging
MoALF&I	Ministry of Agriculture, Livestock, Fisheries and Irrigation
MoE	Ministry of Education
NCA	National Construction Authority
NEMA	National Environmental Management Authority
NEPAD	New Partnerships for African Development
NGO	Non-Governmental Organization
NPCA	NEPAD Planning and Coordinating Agency
OIE	World Organization for Animal Health
OS	Occupational Standard
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
PSSAC	Poultry Sector Skills Advisory Committee
SOP	Standard Operation Procedures
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education and Training Authority

TABLE OF CONTENTS

COURSE OVERVIEW

Description of the course

This course is designed to equip individuals with competencies for rearing layer chicken. It entails Management of poultry brooding, poultry growers, laying poultry and health.
This course consists of core units of learning as indicated below:

Core Units of Learning

Unit Code	Unit Title	Duration in Hours
	Poultry structures construction	84
	Layer chick brooding management	84
	Poultry growers management	36
	Laying poultry management	72
	Poultry health and welfare management	84
Total		360

The core units of learning are independent of each other and may be taken independently.
The total duration of the course is 520 hours: 360 hours (1 semester of 12 weeks at 30 hours per week) plus 160 hours (4 weeks by 5 days per week by 8 hours per day) of field attachment.

Field Attachment

It is envisaged that the trainee will have undergone a field training and assessment with a recognized layer production farm, a prerequisite for completion of this training course. At least 160 hours (4 weeks) will be spent on a supervised and assessed field attachment.

Entry Requirements

An individual entering this course should have any of the following minimum requirements:

a) Attained KCPE certificate

or

b) Equivalent qualifications as determined by Kenya National Qualifications Framework (KNQF)

Assessment

The course will be assessed at two levels: internally and externally. Internal assessment is continuous and is conducted by the trainer who is monitored by an accredited internal verifier while external assessment is conducted by accredited external assessors appointed by TVET CDACC.

Certification

A candidate will be issued with a Record of Achievement on demonstration of competence in a unit of competency. To attain the qualification of layer production operator, artisan certificate

Level 3, the candidate must demonstrate competence in all the units of competency as given in qualification pack. These certificates will be issued by TVET CDACC in conjunction with training provider.

CORE UNITS OF LEARNING

POULTRY SRUCTURES CONSTRUCTION

UNIT CODE: ……

Relationship to Occupational Standards
This unit addresses the Unit of Competency: Construct Poultry Structures

Duration of Unit: 84 hours

Unit Description
This unit specifies the competencies required to construct poultry structures. It involves designing of poultry structures, acquiring construction materials, and managing house construction.

Summary of Learning Outcomes

1. Prepare to construct poultry structures
2. Construct poultry structures
3. Install poultry house structures
4. Equip poultry house

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1) Prepare and plan to construct poultry structures	• Types of poultry structures - Brooder - Rearing house - Store • Factors determining type of poultry house - Type of birds - Production system - Cost • Personal Protection Equipment and Apparel (PPEs) required in poultry	• Written tests • Observation • Oral questions • Third party report

	house construction	
2) Construct poultry structures	• Accessory structures required in a poultry house - Perches -Laying boxes - Foot bath - Cages • Various designs of poultry structures. • Occupational safety and health procedures in poultry house construction. • Environmental protection measures observed during poultry house construction. - NEMA certification • Construction materials - Types - Quality - Storage	• Written tests • Observation • Oral questions • Third party report
2. Construct and install poultry house structures	• Poultry house layout - Area measurement - Pegging • Poultry house foundation - Excavation - Mixing ratios of mortar - Stone laying • Construction of poultry house parts -Floor - Wall - Roof • Construction of Security and Biosecurity measures - Predators barriers - vehicle and human traffic controls • Construction of accessory structures	• Written tests • Observation • Oral questions • Third party report • Project and report writing

	- Perches -Laying boxes - Foot bath • Site clearing - Importance - Debris disposal • Work inspection - critical house requirements	
3. Equip poultry house	• Equipment and material necessary in a poultry house - Types and use - Specifications and quantity • Factors considered in installation of equipment and materials in poultry house - Time - pattern - Safety precautions - Number of birds • Testing-running of the equipment - Heat source - Waterers - Feeders - Ventilation - Lighting	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing

Suggested Methods of Delivery

- Demonstration
- Practice by the trainee
- Field trips
- Discussions
- Direct instruction
- Case studies
- Simulation
- Audio-visual aids
- Modelling

Recommended Resources

Functional poultry farm with the following:		
• Poultry house • Equipments - Brooder - Brooder thermometer - Hygrometer - Waterers - Feeders - Complete Battery cage system - Bedding materials - Buckets - Grit / shell container - Sand bath	• Brooder • Store • Aceesory structures • Saw • Stones • Sand • Cement • Ballast • Timber • Slashers • Crowbar	• Hammer • Nails • String • Wooden pegs • Tape measures • Barbed/chain link • Hoe • Shovels • Wheel burrow

LAYER CHICK BROODING MANAGEMENT

UNIT CODE: ……

Relationship to Occupational Standards

This unit addresses the Unit of Competency: Manage layer chick brooding

Duration of Unit: 84 hours

Unit Description

This unit specifies the competencies required to brood chicks. It involves preparing chick brooder, feeding brooding chicks, managing brooder house micro climate, maintaining brooder hygiene, performing chick vaccination, controlling poultry vermin, controlling poultry predators and monitoring chick performance.

Summary of Learning Outcomes

1. Prepare chick brooder
2. Feed brooding chicks
3. Manage brooder house micro climate
4. Maintain brooder hygiene
5. Perform chick vaccination
6. Control poultry vermin
7. Control poultry predators
8. Monitor chick performance

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Prepare chick brooder	• Suitable brooder construction materials • Brooder assembly guidelines. • Cleaning and disinfection of brooder • Types of bedding materials • Suitable bedding materials • Sterilization of bedding materials • Cleaning and sterilization of brooder equipment. • Installation of brooder equipment	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing

	- Types of brooder equipment - Standard operation of the equipment - Time schedule for placement of various equipment • Test-running the equipment	
2. Feed brooding chicks	• Feeding requirements of chicks - Amount - Feeding schedule - ad libitum feeding - light schedule • Water requirements of chicks - quality - quantity	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
3 Manage brooder house micro climate	• Methods of assessing micro-climatic variations in brooder house - Use of tools and equipment - Animal behaviour - Human senses - Non-conventional aids • Corrective measures for micro-climate variations - Temperature - Humidity - Ventilation - Lighting.	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
4. Maintain brooder hygiene	• Biosafety practices required in brooding • Assessment of Bio-safety conformity o Staff Monitoring o Structures and facilities	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
5. Perform chick vaccination	• Chick vaccination schedule • Handling and storage of	• Written tests • Observation

	vaccines • Equipment and tools required for vaccination. • Vaccination procedures. - Pre- vaccination preparation - Actual vaccination • Chick vaccination records	• Oral questions • Third party report • Interviewing
6. Control poultry vermin	• Identification of vermin - Lice - Mites - Fleas • Vermin control measures - Chemical - Structural related - Cultural practices	• Written tests • Observation • Oral questions • Third party report • Interviewing
7. Control poultry predators	• Types of predators - Man - Cats - Dogs - Mongoose - Hawks - Rats • Predator control measures for brooder house - Chemical - Mechanical - Biological - Structural –related controls	• Written tests • Observation • Oral questions • Third party report • Interviewing
8. Monitor chick performance	• Growth and development pattern in chicks - Feathering - Weight gain • Chick behaviour - Feeding behaviour - Activity • Methods of assessing growth performance of chicks	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing

	- Weighing - Physical appearance • Performance assessment equipment and tools. • Poultry vices -Types - Control measure • Culling of chicks - culling criteria. - Stages of culling	

Suggested Methods of Delivery

- Project
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Case study
- Audio –visual aids

Recommended Resources

Functional Brooder house with the following:		
• Day old chicks • Heat source • Chick feeders • Chick drinkers • Light source	• Brooder guard • Curtains • Brooder thermometer • Hygrometer • Beddings	• Weighing scale • Chick feeds • Water • Vaccines • Vaccination equipment

POULTRY GROWERS MANAGEMENT

UNIT CODE: ……

Relationship to Occupational Standards
This unit addresses the Unit of Competency: Manage Poultry Growers

Duration of Unit: 36 hours

Unit Description

This unit specifies the competencies required to manage poultry growers. it involves sanitization of growers house, managing growers house litter, transferring poultry to growers' house, feeding growing poultry, vaccinating growing poultry, monitoring growing poultry, managing biosafety measures and managing poultry house micro climate.

Summary of Learning Outcomes

1. Sanitize growers house
2. Manage growers house litter
3. Transfer poultry to growers' house
4. Feed growing poultry
5. Vaccinate growing poultry
6. Monitor growing poultry
7. Manage biosafety measures
8. Manage poultry house micro climate

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Sanitize growers house	• Litter removal and disposal • House cleaning - Tools required in cleaning - Cleaning procedure • House disinfection - Tools required in disinfection - Disinfection procedure	• Written tests • Observation • Oral questions • Third party report • Interviewing
2. Manage growers house litter	• Suitable litter materials • Wet litter - Causes of wet litter - Corrective measures for wet litter • Dusty litter - Corrective measures for dusty litter	• Written tests • Observation • Oral questions • Third party report • Interviewing

	• General litter maintenance practices - Adequate ventilation - Turning - Litter addition	• Project and report writing
3. Transfer poultry to growers' house	• Transferring the growers - Method and equipment used in the transfer of growers - Handling precautions • Culling of growers	• Written tests • Observation • Oral questions • Third party report • Interviewing
4. Feed growing poultry	• Feed requirements of growers - Amount - Feeding schedule • Water requirements of growers - Quality - Quantity	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
5. Vaccinate growing poultry	• Grower vaccination schedule • Equipment and tools required for vaccination. • Vaccination procedures - Pre- vaccination preparation - Actual vaccination • Grower vaccination records	• Written tests • Observation • Oral questions • Third party report • Interviewing
6. 6 Monitor growing poultry	• Grower behaviour - Feeding behaviour - Activity - Vices • Grower vices -Types -- Control measures • Methods of assessing growth performance of chicks - Weighing - Physical appearance	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
7. Manage biosafety measures	• Biosafety structures/ facilities in grower house • Biosafety practices required in grower	• Written tests • Observation • Oral questions

	house	• Third party report • Interviewing • Project and report writing
8. Manage poultry house micro climate	• Methods of assessing micro-climatic variations in grower house - Use of tools and equipment - Human senses - Non-conventional aids • Corrective measures for micro-climate variations - Temperature - Humidity - Ventilation - Lighting. • Lighting regime for growers	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing

Suggested Methods of Delivery

- Project
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Case study
- Audio –visual aids

Recommended Resources

Functional poultry unit with the following:		
• Shovel • Broom • Wheel burrow • Sanitizing agents • Brush • Detergents	• Timber • Nails • Saw • Catching hook • Weighing scale • Jerry can	• Grit • Water • Feed • Vaccine • Multivitamins • Syringe

• Knapsack sprayer • Litter • Rake • Hammer	• Crates • Feeders • Drinkers • Grit container	• Needles • Cool box • Freezer • Disinfectant

LAYING POULTRY MANAGEMENT

UNIT CODE: ……

Relationship to Occupational Standards
This unit addresses the Unit of Competency: Manage laying poultry

Duration of Unit: 72 hours

Unit Description
This unit specifies the competencies required to manage laying poultry. It involves feeding laying birds, cleaning, feeding and watering equipment, maintaining suitable litter condition, managing poultry house micro climate, vaccinating laying poultry, monitoring poultry performance, handling poultry eggs and maintaining poultry records.

Summary of Learning Outcomes

1. Feeding laying birds
2. Cleaning feeding and watering equipment
3. Maintaining suitable litter condition
4. Managing poultry house micro climate
5. Vaccinating laying poultry
6. Monitoring poultry performance
7. Handling poultry eggs
8. Maintain poultry records

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Feeding laying birds	• Feed requirements of layers - Amount - Feeding schedule - Feeding with green feedstuffs - Grit • Water requirements of layers - quality - quantity • Feeders and waterers	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing

	- Number and pattern of installation - Improvised feeders and waterers	
2. Cleaning of feeding and watering equipment	• Cleaning procedures for feeders and waterers • Sanitising procedures for feeders and waterers.	• Written tests • Observation • Oral questions • Third party report • Interviewing

3. Maintaining suitable litter condition	• Wet litter
	  ○ Causes of wet litter
	  ○ Corrective measures for wet litter
	• Dusty litter
	  ○ Corrective measures for dusty litter
	• General litter maintenance practices
	  ○ Adequate ventilation
	  ○ Turning
	  ○ litter addition
		• Written tests
		• Observation
		• Oral questions
		• Third party report
		• Interviewing
		• Project and report writing

4. Managing poultry house micro climate	• Methods of assessing micro-climatic variations in layer house - Use of tools and equipment - Human senses - Non-conventional aids • Corrective measures for micro-climate variations - Temperature - Humidity - Ventilation - Lighting. • Lighting regime for layers	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
5. Vaccinating laying poultry	• Layer vaccination schedule • Equipment and tools required for vaccination. • Vaccination procedures - Pre- vaccination preparation	• Written tests • Observation • Oral questions • Third party report • Interviewing

	- Actual vaccination • layer vaccination records	
6. Monitoring poultry performance	• Growth and development pattern in layers - Feathering - Combs and wattles - Physical behaviour • Layer behaviour - Feeding behaviour - Activity - Vices • Layer vices -Types - Control measures • Culling of non-layers - criteria/ indicators used in culling • Broodiness in layers - Control for broodiness • Moulting - Force moulting	• Written tests • Observation • Oral questions • Third party report • Interviewing • Project and report writing
7. Handling poultry eggs	• Recommendations regarding egg collection - Intervals - Equipment - precautions • Sorting and grading of eggs - Equipment - Labelling • Cleaning of eggs - cleaning material - cleaning methods and precautions • Packaging of eggs - Packaging material - Packaging precautions. • Branding of Poultry - Methods of labelling	• Written tests • Observation • Oral questions • Third party report • Interviewing

	- branding equipment	
8. Maintain poultry records	• Types of poultry records • Storage of poultry records	• Written tests • Observation • Oral questions • Third party report • Interviewing

Suggested Methods of Delivery

- Project
- Demonstration by trainer
- Practice by the trainee
- Discussions
- Direct instruction
- Case study
- Audio –visual aids
- Direct instruction

Recommended Resources

Functional poultry unit with the following:		
• Shovel • Broom • Wheel burrow • Sanitizing agents • Brush • Detergents • Knapsack sprayer • Litter • Rake • Hammer • Timber • Nails • Computer • Printer	• Saw • Catching hook • Weighing scale • Jerry can • Crates • Feeders • Drinkers • Grit container • Grit • Water • Feed • Vaccine • Stationery	• Multivitamins • Syringe • Needles • Cool box • Freezer • Disinfectant • Candles • Torch • Egg crates • Egg trays • Cloth • Labels • Branding machine

POULTRY HEALTH AND WELFARE MANAGEMENT

UNIT CODE: ……

Relationship to Occupational Standards
This unit addresses the Unit of Competency: Manage Poultry Health

Duration of Unit: 84 hours

Unit Description
This unit specifies the competencies required to manage poultry health. It involves farm biosecurity, parasite control, vaccination, control of diseases and vices

Summary of Learning Outcomes

1. Manage poultry biosecurity
2. Manage poultry vaccination
3. Control poultry parasites
4. Manage poultry diseases and vices

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Manage poultry biosecurity	• Biosecurity measures in a poultry farm • Occupational safety and health procedures in poultry farm • Poultry waste management o Litter (droppings, feathers, spilt feed, dead birds) o Other wastes (plastics, glass, paper, metals and fluids)	• Written tests • Observation • Oral questions • Third party report • Interviewing • Case study reports
2. Manage poultry vaccination	• Vaccination schedule • Vaccine handling • Vaccination sites and routes • Poultry handling • Animal welfare	• Observation • Written tests • Oral questions • Interviewing • Third party report
3. Control poultry parasites, pests and predators	• External and internal poultry parasites o Types - Internal - External(mites, soft ticks, fleas) o Prevention and control measures	• Observation • Written tests • Oral questions • Interviewing

	• Poultry pests and predators
	  ○ Types
	  ○ Control measures
		• Third party report

4. Manage poultry diseases and vices	• General signs of ill health in poultry
	• General disease prevention and control measures
	• Poultry vices
	  ○ Types of vices
	  ○ Prevention and control measures
		• Observation
		• Written tests
		• Oral questions
		• Interviewing
		• Third party report

Suggested Methods of Delivery

- Project
- Demonstration by trainer
- Practice by the trainee
- Field trips
- Discussions
- Direct instruction
- Electronic audio-visual presentations
- Simulations

Recommended Resources

Functional poultry farm with the following:		
• Stationery (pen and sketching books) • Poultry shackles • Scapels • Cleaning materials and equipment • Disinfectants • Sanitizers • Disposal pits • Weighing scales • Debeaking machine • Wing stab needles • Strategic poultry drugs – preventative and emergency	• Automatic vaccination syringes • Syringes and needles • Vaccines • Poultry dewormers • Coccicidals • Poultry acaricides • Poultry dusts • Footbaths • Spayers • Waste management equipment and material • Litter rakes • Litter bins • Rodenticides • Rodent control traps	• Flock health records • Water • PPEs • Standard work place procedures • Animal diseases act Cap 365, legal notice 47 of 1985 • NEMA regulations and audits • Livestock Production Manual