MANAGE ARTIFICIAL INCUBATION

UNIT CODE: 0811 241 04A

TVETCDACC UNIT CODE: POL/OS/KE/CR/02/4/MA

UNIT DESCRIPTION:

This unit specifies the competencies required to manage artificial incubation. It involves operating egg incubators, managing egg hatching, managing hatchery biosecurity measures and maintaining hatchery records.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	**PERFORMANCE CRITERIA** These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the range.***
1. Operate egg incubators	1.1 ***Incubation chamber parameters*** are set according to incubator manufacturers guidelines, ***Poultry Production Manual (PPM)*** regulations and hatchery SOPs 1.2 Eggs are fumigated as per poultry production guidelines 1.3 Hatching eggs are transferred into setting trays with broad ends facing up according to recommended ***hatching egg handling regulations*** 1.4 Setting trays with hatching eggs are loaded onto setting trolleys as per the recommended hatching egg handling regulations 1.5 Loaded trolleys are driven/pushed into incubation chamber and locked in for incubation.
2. Manage egg hatching	2.1 Eggs are removed from the incubation chamber on the 18th day post setting as per the recommended hatching egg handling regulations 2.2 Eggs are candled to remove non fertile ones and those with dead embryos in accordance with procedures in the PPM 2.3 Fertile eggs with developing embryos are transferred in a flat position into hatching baskets

	2.4 Loaded hatching baskets are transferred into hatching chamber/machine 2.5 Hatching process is monitored from the 20th day onwards for about 33 hours in accordance with procedures in the PPM 2.6 Hatching baskets with chicks, un-hatched eggs and hatching debris are pulled from the hatching chamber / machine on the 21st day 2.7 Hatched chicks are evaluated for health and freedom from deformities 2.8 The ***sex of hatched chicks is assessed*** per PPM 2.9 Hatched, dry and healthy chicks are removed from the hatching baskets and transferred to chick cartons / crates
3. Manage hatchery biosecurity measures	3.1 ***Biosecurity structures and equipment areorganized*** in accordance with the PPM 3.2 Standard operational procedures are posted at strategic points in the hatchery unit according to GMP 3.3 Occupational safety and health procedures are adhered to according to work place procedures 3.4 Environmental protection measures are observed according to ***environment protection regulations*** and work place procedures 3.5 Hatchery buildings and equipment are cleaned, disinfected and fumigated according to GMP regulations and work place policy 3.6 ***Hatchery waste*** is disposed into waste pits after passing through maceration tanks or rendering units according to GMP regulations and work place policy.
4. Maintain hatchery records	4.1 Data is entered and monitored daily, weekly or monthly as per the chart 4.2 Poultry hatchery records are kept as per PPM and work place procedures

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Incubation chamber parameters may include but not limited to:	• Temperature • Humidity • Air quality and flow • Egg inclination
2. Poultry production manuals (PPM) may include but not limited to:	• National Poultry Development Program Manual • Breeder's manuals by breeders like Cobb and Issa Brown
3. Hatching egg handling regulations may include but not limited to:	• Sanitize their hands or wear gloves whenever handling eggs • Be free from communicable diseases • Handle eggs with care • Avoid wetting the eggs
4. Sex of hatched chicks is assessed may include but not limited to:	• Color observation • Vent observation • Feather length observation • DNA sequence
5. Biosecurity structures and equipment are organized may include but not limited to:	• Placing disinfectants in foot baths and spray jet tanks • Placing fumigants in fumigation chamber tanks
6. Environment protection regulations may include but not limited to:	• National Environmental Management Authority • Ministry of Health
7. Hatchery waste may include but not limited to:	• Fluff • Contaminated eggs • Hatched egg shell debris • Pipped chicks (dead in shell) • Unhatched eggs • Dead chicks • Meconium droppings

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required skills

The individual needs to demonstrate the following skills:

- Analytical
- Chick handling
- Cleaning
- Color sexing
- Communication
- Egg handling
- Feather length sexing
- Hatching machine operation
- Negotiation
- Observation
- Operation of incubation and hatching machines
- Record keeping
- Vaccination
- Vent sexing

Required knowledge

The individual needs to demonstrate knowledge of:

- Back-up power supply
- Chick development
- Chick environmental physiology
- Chick transportation
- Chick weighing
- Chick welfare
- Cleaning, sanitization and disinfection procedures
- Early chick feeding
- Egg candling techniques
- Egg fumigation
- Egg handling and transportation
- Egg turning
- Hatchery biosecurity measures
- Hatchery record keeping
- Hatchery waste disposal methods
- Hatching egg sorting
- Hatching egg storage
- Humane killing
- Incubator environment

- Methods of chick sexing
- Occupational safety and health
- Personal hygiene and public health
- Types of cleaning agents, sanitizers and disinfectants
- Types of early chick vaccines
- Types of hatchery records
- Vaccine care and handling

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Implemented hatchery biosecurity measures according to standard operating procedures (SOP) 1.2 Handled egg according to hatching egg handling regulations 1.3 Set and monitored the correct incubator parameters according to the PPM and manufacturer's guidelines 1.4 Identified sex of chicks using appropriate method of sexing 1.5 Implemented chick vaccination program 1.6 Handled chicks safely in accordance with PPM guidelines 1.7 Disposed hatchery waste following recommended environmental protection regulations 1.8 Kept recommended hatchery records according to work place procedures
2. Resource Implications	The following resources must be provided: 2.1 Assessment location / *Kienyeji chicken* production farm 2.2 Personal Protective Equipment and Apparel
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation 3.2 Written tests 3.3 Oral questioning 3.4 Third party report
4. Context of Assessment	Competency may be assessed on the job, off the job or during industrial attachment. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance	Holistic assessment with other units relevant to the industry sector,

information for assessment	workplace and job roles is recommended.