ANIMAL PRODUCTION

ISCED UNIT CODE: 0811 551 11A

TVETCDACC UNIT CODE: AQ/CU/PN/CR/04/6/MA

Relationship to Occupational Standards
This unit addresses the Unit of Competency: **Apply principles of animal production**

Duration of Unit: 320 hours

Unit Description
This unit specifies the competencies required by Agripreneurship technologist to apply principles of ruminant production, non-ruminant production, emerging livestock bee keeping and fish farming

Summary of learning outcomes

By the end of this unit of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Produce ruminant animals	80
2.	Produce non- ruminant animals	80
3.	Produce emerging- livestock	60
4.	Conduct fish farming	50
5.	Conduct bee keeping	50
Total		**320**

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Produce ruminant animals	1.1 Introduction to ruminant animals 1.1.1 Cattle 1.1.2 Goats 1.1.3 Camel 1.1.4 Sheep 1.1.5 Donkey 1.2 Ruminant animal breeding stock selection methods	• Practical • Project • Third party report • Portfolio of evidence • Written tests

	1.2.1 Tandem method 1.2.2 Progeny testing 1.2.3 Random selection 1.2.4 Contemporary comparison 1.3 Breeding methods and systems 1.3.1 Natural mating 1.3.2 Artificial insemination 1.3.3 Embryo transplant 1.4 Animals feeding practices 1.4.1 Steaming up 1.4.2 Creep feeding 1.4.3 Flushing 1.5 Animals' routine management practices 1.5.1 Closed castration 1.5.2 Docking 1.5.3 Hoof trimming 1.5.4 Shearing 1.5.5 Disbudding 1.5.6 Identification 1.5.7 Cleaning animal houses 1.5.8 Vaccination 1.6 Classification and identification of Animal parasites 1.6.1 External parasites – keds, tsetse fly, fleas, lice, tick 1.6.2 Internal parasites- roundworm, tapeworm, liver fluke, hookworm 1.7 Identify disease and parasite Control methods 1.7.1 Quarantine 1.7.2 Vaccination 1.7.3 Isolation 1.7.4 Proper breeding and selection 1.7.5 Proper feeding and nutrition 1.7.6 Proper hygiene 1.7.7 Use of prophylactic drugs 1.7.8 Use of antiseptics	• Oral questioning
2. Produce non-	2.1 Introduction to non-ruminant animals 2.1.1 Poultry	• Practical • Project

ruminant animals	2.1.2 Rabbit 2.1.3 Pigs 2.2 Non -Ruminant animal breeding stock selection 2.3 Breeding methods -traditional breeding - inbreeding - crossbreeding - controlled breeding - biotechnology &assisted reproductive technique - genetic selection and genomics -conservation breeding 2.4 Animals feeding 2.5 Animals' routine management practices 2.6 Animal parasites control methods - Physical - Biological - chemical 2.7 Animal disease control methods - Biological/cultural - Physical - chemical	• Third party report • Portfolio of evidence • Written tests • Oral questioning
3. Produce emerging-livestock	3.1 Introduction to emerging- livestock 3.1.1 Crocodiles 3.1.2 Ostrich 3.1.3 Snakes 3.1.4 Maggots 3.1.5 Earthworms 3.2 Importance of emerging livestock 3.3 Breeding methods 3.4 Animal feeding practices 3.5 Animal routine management practices 3.6 Animal parasite control methods 3.7 Animal disease control method	• Practical • Project • Third party report • Portfolio of evidence • Written tests • Oral questioning
4. Conduct fish farming	4.1 Fish species identification 4.2.1 Marine fish 4.2.2 Fresh water fish 4.2 Fish farm site selection 4.3.1 Security	• Practical • Project • Third party report • Portfolio of evidence • Written tests

	4.3.2 Species of fish to be reared 4.3.3 Type of soil 4.3.4 Availability of water 4.3.5 Market availability 4.3.6 Source of reputable fingerlings 4.3.7 Management skills 4.3 Construction of fish pond -fish pond construction procedures 4.4 Fish and fish Pond maintenance and management practice 4.1.1 Aeration 4.1.2 Water flow rate control 4.1.3 Water quality monitoring 4.1.4 Predator control 4.1.5 Sludge removal 4.1.6 Declogging of drainage system 4.1.7 Cleaning of filters 4.1.8 Fingerling/fry grading 4.1.9 Marketing of hatchery products 4.1.10 Fish health monitoring 4.1.11 Fish propagation 4.1.12 Fish stocking 4.1.13 Fingerling packaging and transport 4.1.14 De-siltation 4.1.15 Fertilization 4.1.16 Harvesting 4.5 Control of fish pond waste and predators 4.6 Causes of fish disease 4.6.1 Environmental/water quality causes 4.6.2 Hereditary/genetic causes 4.6.3 Microbial/pathogenic causes 4.6.4 Nutritional causes 4.6.5 Physical injury 4.7 Fish pond stocking	• Oral questioning instruction
5. Conduct bee keeping	5.1 Apiary site identification 5.2 Types and Construction of bee hives 5.2.1 Langstroth	• Practical • Project • Third party report

	5.2.2 Kenya top bar hive 5.2.3 Box hive 5.3 Bee hives installation 5.4 Bee hive stocking procedure 5.5 Bee products harvesting 5.5.1 Honey 5.5.2 Propolis 5.5.3 Bee venom 5.5.4 Creamed honey 5.5.5 Manuka honey 5.5.6 Comb honey 5.5.7 Honeycomb 5.5.8 Beeswax 5.5.9 Bee pollen 5.5.10 Royal jelly	• Portfolio of evidence • Written tests • Oral questioning

Suggested methods of delivery for 25 trainees

- Project
- Demonstration
- Practicals
- Discussions
- Direct instruction

Recommended Resource for 25 trainees

S/No	Item/Category	Description/Specification	Quantity	Recommended Ratio (Item: Trainee)
A	**Learning Materials**			
	Text books	Livestock production books	5	1:5
B	**Learning Facilities & infrastructure**			
	classroom		1	1:25
C	**Consumable materials**			
	notebooks	A4 SIZE	25	1:1

	Flip chart		1	1:25
D	**Tools and Equipment**			
	Projectors	EPSON 2788 LUMEN or any brand	1	1:25
	Computers	Any brand-5th generation and above Core i5	5	1:5
	internet	Reliable and fast		
	GPS device		5	1:5
E	**Biological assets**			
	Non ruminant livestock	rabbit	2	1:5
	Ruminant animals	cow	2	1:5
	Emerging livestock	ostrich	1	1:25
	Bees	Honey bee	1	1:25
	Fish pond	Tilapia fish	10	1:3