APPLY BIOCHEMISTRY PRINCIPLES

UNIT CODE: 0512 551 10A

TVET CDACC UNIT CODE: AGR/CU/AP/CC/01/6/MA

UNIT DESCRIPTION

This unit specifies the competencies required by an Animal Production Technologist Level 6 to apply biochemistry principles. It involves measuring enzyme kinetics, analyzing carbohydrates, proteins, lipids, vitamins and minerals.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace functions	**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. Measure Enzyme kinetics	1.1 Enzyme and substrate are prepared as per laboratory procedures. 1.2 Enzyme assay are set up as per laboratory procedures. 1.3 Enzyme reaction rate are measured as per laboratory procedures.
2. Analyse carbohydrates	2.1 Carbohydrates are identified based on chemical composition as per laboratory procedure. 2.2 ***Carbohydrates are classified*** based on chemical composition as per laboratory procedure. 2.3 Carbohydrates are classified based on chemical structure. 2.4 Carbohydrate functions are applied based on chemical structure.
3. Analyse proteins	3.1 Proteins are identified based on chemical composition as per laboratory procedure. 3.2 Proteins classify based on chemical structure. 3.3 Proteins functions are applied based on chemical structure.
4. Analyse lipids	4.1 ***Lipids*** are identified based on chemical composition as per laboratory procedure. 4.2 Lipids classified based on chemical structure. 4.3 Lipids functions are applied based on functional groups.

5. Analyse Minerals and vitamins	5.1 Minerals and vitamins are identified based on chemical composition as per laboratory procedure. 5.2 ***Minerals*** functions areapplied based on chemical structure. 5.3 ***Vitamins*** functions are appliedbased on chemical structure.

RANGE

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

VARIABLE	RANGE
1. Carbohydrates are classified may include but are not limited to:	• Monosaccharide's • Disaccharides • Polysaccharides • Oligosaccharides
2. Fats and lipids classified may include but are not limited to	• Phospholipids • Triglycerides • Sphingolipids • Steroids
3. Minerals are classified may include but are not limited to	• Macro elements • Micro elements
4. Vitamins classified may include but are not limited to	• Water soluble vitamins • Fat soluble vitamins

REQUIRED KNOWLEDGE AND SKILLS

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

Required knowledge

The individual needs to demonstrate knowledge of:

- Hydrocarbons
- Chemical reaction
- Laboratory safety
- Laboratory apparatus
- Laboratory rules and regulation
- Basic cell biology

Required skills

The individual needs to demonstrate the following skills:

- Observation
- Analytical
- Critical thinking
- Writing
- Active listening
- Problem solving
- Numeracy
- Communication

EVIDENCE GUIDE

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

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Measured enzyme reaction rate as per laboratory procedures. 2.1 Applied carbohydrate functions based on chemical structure. 3.1 Applied proteins functions based on chemical structure. 4.1 Applied lipids functions based on functional groups. 5.1 Applied minerals functions based on chemical structure. 6.1 Applied vitamins functions based on chemical structure.
2. Resource implications	The following resources should be provided: 2.1 Appropriately simulated environment where assessment can take place 2.2 Access to relevant work environment 2.3 Resources relevant to the proposed activities or tasks
3. Methods of assessment	Competency in this unit may be assessed through: Observation 3.1 Oral questioning 3.2 Portfolio of evidence 3.3 Interviews 3.4 Third party report

	3.5 Written tests
4. Context of assessment	Competency may be assessed: 4.1 Workplace 4.2 simulated workplace
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.