

TRAINING REGULATIONS



AGRICULTURAL CROPS PRODUCTION NC I

**AGRICULTURE AND FISHERY, PROCESSED
FOOD AND BEVERAGES SECTOR**

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Superhighway, Taguig City, Metro Manila

TABLE OF CONTENTS

AGRICULTURE AND FISHERY, PROCESSED FOOD AND BEVERAGES SECTOR

AGRICULTURAL CROPS PRODUCTION NC I

	Page No.
PREFACE	
FOREWORD	
SECTION 1 AGRICULTURAL CROPS PRODUCTION NC I QUALIFICATION	01
SECTION 2 COMPETENCY STANDARDS	
• Basic Competencies	02-15
• Common Competencies	16-31
• Core Competencies	32-50
SECTION 3 TRAINING STANDARDS	
3.1 Curriculum Design	
- Basic Competencies	51
- Common Competencies	52
- Core Competencies	53-54
3.2 Training Delivery	54-55
3.3 Trainee Entry Requirements	55
3.4 List of Tools, Equipment and Materials	56-58
3.5 Training Facilities	59
3.6 Trainers' Qualifications	60
3.7 Institutional Assessment	60
SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS	61
COMPETENCY MAP	62-63
DEFINITION OF TERMS	64-69
ACKNOWLEDGEMENTS	70-71

**TRAINING REGULATIONS FOR
AGRICULTURAL CROPS PRODUCTION NC I**

Section 1 : Agricultural Crops Production National Certificate I

The Agricultural Crops Production NC I consists of competencies that a person must achieve in the production of ***crops such as rice, vegetables, fruits and nuts*** as well as many others. Workers operating at this level and using these competencies would be working ***without previous experience*** in this industry sector. They would be undertaking a ***small range of skills*** and they would be ***under constant supervision*** or working alongside a more competent worker with some supervisory skills. They would be undertaking basic crop husbandry and work orientation skills.

This Qualification is packaged from the competency map of the Agriculture and Fishery, Processed Food and Beverages Sector as shown in Annex A.

This units of competency comprising this qualification include the following:

Code	BASIC COMPETENCIES
500311101	Receive and respond to workplace communication
500311102	Work with others
500311103	Demonstrate work values
500311104	Practice basic housekeeping procedures

Code	COMMON COMPETENCIES
AGR321201	Apply safety measures in farm operations
AGR321202	Use farm tools and equipment
AGR321203	Perform estimation and calculations
AGR321204	Apply basic first aid

Code	CORE COMPETENCIES
AGR611306	Support horticultural crop work
AGR611307	Support nursery work
AGR611308	Support agronomic crop work
AGR611309	Support irrigation work

A person who has achieved this Qualification is competent to be:

- **Farm Laborer**

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in AGRICULTURAL CROPS PRODUCTION NC I.

BASIC COMPETENCIES

UNIT OF COMPETENCY: RECEIVE AND RESPOND TO WORKPLACE COMMUNICATION

UNIT CODE : 500311101

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to receive, respond and act on verbal and written communication.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Follow routine spoken messages	1.1 Required information is gathered by listening attentively and correctly interpreting or understanding information/instructions 1.2 Instructions/information are properly recorded 1.3 Instructions are acted upon immediately in accordance with information received 1.4 Clarification is sought from workplace supervisor on all occasions when any instruction/information is not clear
2. Perform workplace duties following written notices	2.1 Written notices and instructions are read and interpreted correctly in accordance with organizational guidelines 2.2 Routine written instruction are followed in sequence 2.3 Feedback is given to workplace supervisor based on the instructions/information received

RANGE OF VARIABLES

VARIABLE	RANGE
1. Written notices and instructions	It refers to : 1.1. Handwritten and printed material 1.2. Internal memos 1.3. External communications 1.4. Electronic mail 1.5. Briefing notes 1.6. General correspondence 1.7. Marketing materials 1.8. Journal articles
2. Organizational Guidelines	It may include: 2.1. Information documentation procedures 2.2. Company policies and procedures 2.3. Organization manuals 2.4. Service manual

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Demonstrated knowledge of organizational procedures for handling verbal and written communications</p> <p>1.2 Received and acted on verbal messages and instructions</p> <p>1.3 Demonstrated competency in recording instructions/information</p>
<p>2. Underpinning knowledge and attitudes</p>	<p>2.1. Knowledge of organizational policies/guidelines in regard to processing internal/external information</p> <p>2.2. Ethical work practices in handling communications</p> <p>2.3. Communication process</p>
<p>3. Underpinning skills</p>	<p>3.1. Conciseness in receiving and clarifying messages/information/communication</p> <p>3.2. Accuracy in recording messages/information</p>
<p>4. Resource implications</p>	<p>The following resources must be provided:</p> <p>4.1. Pens</p> <p>4.2. Note pads</p>
<p>5. Methods of assessment</p>	<p>Competency must be assessed through:</p> <p>5.1. Direct Observation</p> <p>5.2. Oral interview</p> <p>5.3. Written Evaluation</p> <p>5.4. Third Party Report</p>
<p>6. Context for assessment</p>	<p>6.1. Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions</p>

UNIT OF COMPETENCY : WORK WITH OTHERS

UNIT CODE : 500311102

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes required to develop workplace relationship and contribute in workplace activities.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Develop effective workplace relationship	1.1 <i>Duties and responsibilities</i> are done in a positive manner to promote cooperation and good relationship 1.2 Assistance is sought from <i>workgroup</i> when difficulties arise and addressed through discussions 1.3 <i>Feedback</i> provided by others in the team is encouraged, acknowledged and acted upon 1.4 Differences in personal values and beliefs are respected and acknowledged in the development
2. Contribute to work group activities	2.1 <i>Support is provided to team members</i> to ensure workgroup goals are met 2.2 Constructive contributions to workgroup goals and tasks are made according to <i>organizational requirements</i> 2.3 Information relevant to work is shared with team members to ensure designated goals are met

RANGE OF VARIABLES

VARIABLE	RANGE
1. Duties and responsibilities	1.1 Job description and employment arrangements 1.2 Organization's policy relevant to work role 1.3 Organizational structures 1.4 Supervision and accountability requirements including OHS 1.5 Code of conduct
2. Work group	2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Feedback on performance	3.1 Formal/Informal performance appraisal 3.2 Obtaining feedback from supervisors and colleagues and clients 3.3 Personal, reflective behavior strategies 3.4 Routine organizational methods for monitoring service delivery
4. Providing support to team members	4.1 Explaining/clarifying 4.2 Helping colleagues 4.3 Providing encouragement 4.4 Providing feedback to another team member 4.5 Undertaking extra tasks if necessary
5. Organizational requirements	5.1 Goals, objectives, plans, system and processes 5.2 Legal and organization policy/guidelines 5.3 OHS policies, procedures and programs 5.4 Ethical standards 5.5 Defined resources parameters 5.6 Quality and continuous improvement processes and standards

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1. Provided support to team members to ensure goals are met 1.2. Acted on feedback from clients and colleagues 1.3. Accessed learning opportunities to extend own personal work competencies to enhance team goals and outcomes
<p>2. Underpinning knowledge and attitudes</p>	<ul style="list-style-type: none"> 2.1. The relevant legislation that affects operations, especially with regards to safety 2.2. Reasons why cooperation and good relationships are important 2.3. Knowledge of the organization's policies, plans and procedures 2.4. Understanding how to elicit and interpret feedback 2.5. Knowledge of workgroup member's responsibilities and duties 2.6. Importance of demonstrating respect and empathy in dealings with colleagues 2.7. Understanding of how to identify and prioritize personal development opportunities and options
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1. Ability to read and understand the organization's policies and work procedures 3.2. Write simple instructions for particular routine tasks 3.3. Interpret information gained from correspondence 3.4. Communication skills to request advice, receive feedback and work with a team 3.5. Planning skills to organized work priorities and arrangement 3.6. Technology skills including the ability to select and use technology appropriate to a task 3.7. Ability to relate to people from a range of social, cultural and ethnic backgrounds.

4. Resource implications	<p>The following resources MUST be provided:</p> <p>4.1. Access to relevant workplace or appropriately simulated environment where assessment can take place</p> <p>4.2. Materials relevant to the proposed activity or task</p>
5. Methods of assessment	<p>Competency may be assessed through:</p> <p>5.1. Direct observations of work activities of the individual member in relation to the work activities of the group</p> <p>5.2. Observation of simulation and/or role play involving the participation of individual member to the attainment of organizational goal</p> <p>5.3. Case studies and scenarios as a basis for discussion of issues and strategies</p>
6. Context for assessment	<p>6.1. Competency assessment may occur in workplace or any appropriately simulated environment</p> <p>6.2. Assessment shall be observed while task are being undertaken whether individually or in group</p>

UNIT OF COMPETENCY: DEMONSTRATE WORK VALUES

UNIT CODE 500311103

UNIT DESCRIPTOR This unit covers the knowledge, skills, and attitude in demonstrating proper work values.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Define the purpose of work	1.1 One's unique sense of purpose for working and the why's of work are identified, reflected on and clearly defined for one's development as a person and as a member of society. 1.2 Personal mission is in harmony with company's values
2. Apply work values/ethics	2.1 Work values/ethics/concepts are classified and reaffirmed in accordance with the transparent company ethical standards, policies and guidelines. 2.2 Work practices are undertaken in compliance with industry work ethical standards, organizational policy and guidelines 2.3 Personal behavior and relationships with co-workers and/or clients are conducted in accordance with ethical standards, policy and guidelines. 2.4 Company resources are used in accordance with transparent company ethical standard, policies and guidelines.
3. Deal with ethical problems	3.1 Company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct are accessed and applied in accordance with transparent company ethical standard, policies and guidelines. 3.2 Work incidents/situations are reported and/or resolved in accordance with company protocol/guidelines. 3.3 Resolution and/or referral of ethical problems identified are used as learning opportunities.
4. Maintain integrity of conduct in the workplace	4.1 Personal work practices and values are demonstrated consistently with acceptable ethical conduct and company's core values. 4.2 Instructions to co-workers are provided based on ethical, lawful and reasonable directives. 4.3 Company values/practices are shared with co-workers using appropriate behavior and language.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work values/ethics/concepts	May include but are not limited to: 1.1 Commitment/ Dedication 1.2 Sense of urgency 1.3 Sense of purpose 1.4 Love for work 1.5 High motivation 1.6 Orderliness 1.7 Reliability 1.8 Competence 1.9 Dependability 1.10 Goal-oriented 1.11 Sense of responsibility 1.12 Being knowledgeable 1.13 Loyalty to work/company 1.14 Sensitivity to others 1.15 Compassion/Caring attitude 1.16 Balancing between family and work 1.17 Pakikisama 1.18 Bayanihan spirit/teamwork 1.19 Sense of nationalism
2. Work practices	2.1 Quality of work 2.2 Punctuality 2.3 Efficiency 2.4 Effectiveness 2.5 Productivity 2.6 Resourcefulness 2.7 Innovativeness/Creativity 2.8 Cost consciousness 2.9 5S 2.10 Attention to details
3. Incidents/situations	3.1 Violent/intensed dispute or argument 3.2 Gambling 3.3 Use of prohibited substances 3.4 Pilferages 3.5 Damage to person or property 3.6 Vandalism 3.7 Falsification 3.8 Bribery 3.9 Sexual Harassment 3.10 Blackmail

VARIABLE	RANGE
4. Company resources	4.1 Consumable materials 4.2 Equipment/Machineries 4.3 Human 4.4 Time 4.5 Financial resources
5. Instructions	5.1 Verbal 5.2 Written

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Defined one's unique sense of purpose for working 1.2 Clarified and affirmed work values/ethics/concepts consistently in the workplace 1.3 Demonstrated work practices satisfactorily and consistently in compliance with industry work ethical standards, organizational policy and guidelines 1.4 Demonstrated personal behavior and relationships with co-workers and/or clients consistent with ethical standards, policy and guidelines 1.5 Used company resources in accordance with company ethical standard, policies and guidelines. 1.6 Followed company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct/behavior
<p>2. Underpinning knowledge and attitudes</p>	<ul style="list-style-type: none"> 2.1 Occupational health and safety 2.2 Work values and ethics 2.3 Company performance and ethical standards 2.4 Company policies and guidelines 2.5 Fundamental rights at work including gender sensitivity 2.6 Work responsibilities/job functions 2.7 Corporate social responsibilities 2.8 Company code of conduct/values 2.9 Balancing work and family responsibilities
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Interpersonal skills 3.2 Communication skills 3.3 Self awareness, understanding and acceptance 3.4 Application of good manners and right conduct
<p>4. Resource implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace or assessment location 4.2 Case studies/Scenarios
<p>5. Methods of assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> 5.1 Portfolio Assessment 5.2 Interview 5.3 Third Party Reports
<p>6. Context for assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY: PRACTICE BASIC HOUSEKEEPING PROCEDURES

UNIT CODE : 500311104

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to apply the basic housekeeping procedures.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
1. Sort and remove unnecessary items	1.1 Reusable, recyclable materials are sorted in accordance with company/office procedures 1.2 Unnecessary items are removed and disposed of in accordance with company or office procedures
2. Arrange items	2.1 Items are arranged in accordance with company/office housekeeping procedures 2.2 Work area is arranged according to job requirements 2.3 Activities are prioritized based on instructions. 2.4 Items are provided with clear and visible identification marks based on procedure 2.5 Safety equipment and evacuation passages are kept clear and accessible based on instructions
3. Maintain work area, tools and equipment	3.1 Cleanliness and orderliness of work area is maintained in accordance with company/office procedures 3.2 Tools and equipment are cleaned in accordance with manufacturer's instructions/manual 3.3 Minor repairs are performed on tools and equipment in accordance with manufacturer's instruction/manual 3.4 Defective tools and equipment are reported to immediate supervisor
4. Follow standardized work process and procedures	4.1 Materials for common use are maintained in designated area based on procedures 4.2 Work is performed according to standard work procedures 4.3 Abnormal incidents are reported to immediate supervisor
5. Perform work spontaneously	5.1 Work is performed as per instruction 5.2 Company and office decorum are followed and complied with 5.3 Work is performed in accordance with occupational health and safety (OHS) requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Unnecessary items	May include but are not limited to: 1.1 Non-recyclable materials 1.2 Unserviceable tools and equipment 1.3 Pictures, posters and other materials not related to work activity 1.4 Waste materials
2. Identification marks	2.1 Labels 2.2 Tags 2.3 Color coding
3. Decorum	3.1 Company/ office rules and regulations 3.2 Company/ office uniform 3.3 Behavior
4. Minor repair	Minor repair include but not limited to: 4.1 Replacement of parts 4.2 Application of lubricants 4.3 Sharpening of tools 4.4 Tightening of nuts, bolts and screws

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Practiced the basic procedures of 5S
2. Underpinning knowledge and attitudes	2.1 Principles of 5S 2.2 Work process and procedures 2.3 Safety signs and symbols 2.4 General OH&S principles and legislation 2.5 Environmental requirements relative to work safety 2.6 Accident/Hazard reporting procedures
3. Underpinning skills	3.1 Basic communication skills 3.2 Interpersonal skills 3.3 Reading skills required to interpret instructions 3.4 Reporting/recording accidents and potential hazards
4. Resource implications	The following resources MUST be provided: 4.1 Facilities, materials tools and equipment necessary for the activity
5. Methods of assessment	Competency must be assessed through: 5.1 Third party report 5.2 Interview 5.3 Demonstration with questioning
6. Context for assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

COMMON COMPETENCIES

UNIT TITLE : Apply Safety Measures in farm operations

UNIT CODE : AGR321201

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitudes required to perform safety measures effectively and efficiently. It includes identifying areas, tools, materials, time and place in performing safety measures.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>
1. Determine areas of concern for safety measures	1.1 Work tasks are identified in line with farm operations 1.2 Place for safety measures are determined in line with farm operations 1.3 Time for safety measures are determined in line with farm operations 1.4 Appropriate tools, materials and outfits are prepared in line with job requirements
2. Apply appropriate safety measures	2.1 Tools and materials are used according to specifications and procedures 2.2 Outfits are worn according to farm requirements 2.3 Effectivity/shelf life/expiration of materials are strictly observed 2.4 Emergency procedures are known and followed to ensure a safework requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines
3. Safekeep/dispose tools, materials and outfit	3.1 Used tools and outfit are cleaned after use and stored in designated areas 3.2 Unused materials are properly labeled and stored according to manufacturers recommendation and farm requirements 3.3 Waste materials are disposed according to manufacturers, government and farm requirements

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the following sectors: 1.1 Aquaculture 1.2 Animal Production 1.3 Crop Production 1.4 Post-harvest 1.5 Agri-marketing 1.6 Farm Equipment
2. Place	2.1 Animal pens, cages, barns 2.2 Fish ponds, cages 2.3 Stock room/storage areas/warehouse 2.4 Field/farm/orchard
3. Time	3.1 Vaccination and medication period 3.2 Fertilizer and pesticides application 3.3 Feed mixing and feeding 3.4 Harvesting and hauling 3.5 Cleaning, sanitizing and disinfecting 3.6 Dressing, butchering and castration
4. Tools, materials and outfits	4.1 Tools 4.1.1 Wrenches 4.1.2 Screw driver 4.1.3 Pliers 4.2 Materials 4.2.1 Bottles 4.2.2 Plastic 4.2.3 Bags 4.2.4 Syringe 4.3 Outfit 4.3.1 Masks 4.3.2 Gloves 4.3.3 Boots 4.3.4 Overall coats 4.3.5 Hat 4.3.6 Eye goggles

5. Emergency procedures	5.1 Location of first aid kit 5.2 Evacuation 5.3 Agencies contract 5.4 Farm emergency procedures
6. Waste materials	6.1 Animal manure 6.2 Waste water 6.3 Syringes 6.4 Unused farm chemicals e.g. pesticides, chemicals, fertilizers 6.5 Expired reagents 6.6 Dead animals
7. Hazards	7.1 Chemical 7.2 Electrical 7.3 Falls

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined areas of concern for safety measures 1.2 Applied appropriate safety measures according to industry requirements 1.3 Prepared tools, materials and outfit needed 1.4 Performed proper disposal of used materials 1.5 Safekeep/cleaned tools, materials and outfit in designated facilities
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Safety Practices <ul style="list-style-type: none"> 2.1.1 Implementation of regulatory controls and policies relative to treatment of area and application of chemicals 2.1.2 Proper disposal of waste materials 2.2 Codes and Regulations <ul style="list-style-type: none"> 2.2.1 Compliance to health program of DOH and DENR 2.2.2 Hazard identification 2.2.3 Emergency procedures 2.3 Tools & Equipment: Uses and Specification <ul style="list-style-type: none"> 2.3.1 Masks, gloves, boots, overall coats for health protection 2.4 Maintenance <ul style="list-style-type: none"> 2.4.1 Regular check-up and repair of tools, materials and outfit before and after use
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Ability to recognize effective tools, materials and outfit 3.2 Ready skills required to read labels, manuals and other basic safety information
<p>4. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 4.1 Practical demonstration 4.2 Third Party Report
<p>5. Resource Implications</p>	<ul style="list-style-type: none"> 5.1 Farm location 5.2 Tools, equipment and outfits appropriate in applying safety measures
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY : Use Farm Tools and Equipment

UNIT CODE : AGR321202

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitudes required to use farm tools and equipment. It includes selection, operation and preventive maintenance of farm tools and equipment.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>
1. Select and use farm tools	1.1 Identified appropriate farm tools according to requirement/use 1.2 Farm tools are checked for faults and defective tools reported in accordance with farm procedures 1.3 Appropriate tools and equipment are safely used according to job requirements and manufacturers conditions
2. Select and operate farm equipment	2.1 Identify appropriate farm equipment 2.2 Instructional manual of the farm tools and equipment are carefully read prior to operation 2.3 Pre-operation check-up is conducted in line with manufacturers manual 2.4 Faults in farm equipment are identified and reported in line with farm procedures 2.5 Farm equipment used according to its function 2.6 Followed safety procedures
3. Perform preventive maintenance	3.1 Tools and equipment are cleaned immediately after use in line with farm procedures 3.2 Routine check-up and maintenance are performed 3.3 Tools and equipment are stored in designated areas in line with farm procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	1.1 Engine 1.2 Pumps 1.3 Generators 1.4 Sprayers
2. Farm tools	2.1 Sickle 2.2 Cutters 2.3 Weighing scales 2.4 Hand tools 2.5 Measuring tools 2.6 Garden tools
3. Pre-operation check-up	3.1 Tires 3.2 Brake fluid 3.3 Fuel 3.4 Water 3.5 Oil 3.6 Lubricants 3.7 Battery

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Correctly identified appropriate farm tools and equipment</p> <p>1.2 Operated farm equipment according to manual specification</p> <p>1.3 Performed preventive maintenance</p>
<p>2. Underpinning Knowledge and Attitudes</p>	<p>2.1 Safety Practices</p> <p>2.1.1 Ideal good work habits to demonstrate to workers easy and safety standards during operation of farm equipment</p> <p>2.2 Codes and Regulations</p> <p>2.2.1 Environmental Compliance Certificate (ECG)</p> <p>2.2.2 Effective work supervision in the operations of farm equipment</p> <p>2.3 Tools & Equipment: Uses and Specification</p> <p>2.3.1 Knowledge in calibrating and use of equipment</p> <p>2.3.2 Safety keeping of equipments every after use</p> <p>2.4 Maintenance</p> <p>2.4.1 Regular upkeep of equipments</p> <p>2.4.2 Preventive maintenance skills</p> <p>2.5 Values</p> <p>2.5.1 Positive outlook towards work</p> <p>2.5.2 Possesses pre-emptive/anticipatory skills</p>
<p>3. Underpinning Skills</p>	<p>3.1 Ability to recognized defective farm equipment</p> <p>3.2 Perform proper management practices of safety measures</p>
<p>4. Method of Assessment</p>	<p>Competency in this unit must be assessed through:</p> <p>4.1 Direct observation</p> <p>4.2 Practical demonstration</p> <p>4.3 Third Party Report</p>
<p>5. Resource Implications</p>	<p>5.1 Service/operational manual of farm tools and equipment</p> <p>5.2 Tools and equipment</p> <p>5.3 Farm implements</p>
<p>6. Context of Assessment</p>	<p>6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision</p>

UNIT OF COMPETENCY : Perform Estimation and Basic Calculation

UNIT CODE : AGR321203

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitudes required to perform basic workplace calculations.

ELEMENT	PERFORMANCE CRITERIA Italicized terms are elaborated in the Range of Variables
1. Perform estimation	1.1 Job requirements are identified from written or oral communications 1.2 Quantities of materials and resources required to complete a work task are estimated 1.3 The time needed to complete a work activity is estimated 1.4 Accurate estimate for work completion are made 1.5 Estimate of materials and resources are reported to appropriate person
2. Perform basic workplace calculation	2.1 Calculations to be made are identified according to job requirements 2.2 Correct method of calculation identified 2.3 System and units of measurement to be followed are ascertained 2.4 Calculation needed to complete work tasks are performed using the four basic process of addition, division, multiplication and subtraction 2.5 Calculate whole fraction, percentage and mixed when are used to complete the instructions 2.6 Number computed in self checked and completed for alignment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Calculation	1.1 Quantity of feeds 1.2 Amount of fertilizer 1.3 Amount of medicines
2. Method of calculation	2.1 Addition 2.2 Subtraction 2.3 Multiplication 2.4 Division 2.5 Ratio and proportion
3. System of measurement	3.1 English 3.2 Metric
4. Units of measurement	4.1 Area 4.2 Volume 4.3 Weight

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Performed estimation 1.2 Performed basic workplace calculation 1.3 Applied corrective measures as maybe necessary
2. Underpinning Knowledge and Attitudes	2.1 Mathematics 2.1.1 Basic mathematical operations 2.1.2 Percentage and ratios 2.1.3 Unit Conversion 2.1.4 Basic accounting principles and procedures 2.1.4.1 Production cost 2.1.4.2 Sales 2.1.4.3 Accounts receivables/payables 2.2 Systems, Processes and Operations 2.2.1 Knowledge in different management practices and operational procedures 2.3 Values 2.3.1 Safety consciousness 2.3.2 Time consciousness and management 2.3.3 Cost consciousness 2.3.4 Precision
3. Underpinning Skills	3.1 Ability to perform basic calculation 3.2 Communicate effectively
4. Method of Assessment	Competency in this unit must be assessed through: 4.1 Practical demonstration 4.2 Written examination
5. Resource Implications	5.1 Relevant tools and equipment for basic calculation 5.2 Recommended data
6. Context of Assessment	6.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

UNIT OF COMPETENCY: Apply Basic First Aid

UNIT CODE: AGR321204

UNIT DESCRIPTOR : This unit of competency deals with the provision of essential First Aid in recognising and responding to an emergency using basic life support measures. The First Aider is not expected to deal with complex casualties or incidents, but to provide an initial response where First Aid is required. In this unit it is assumed the First Aider is working under supervision and/or according to established workplace First Aid procedures and policies.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized Bold</i> terms are elaborated in the Range of Variables
1. Assess the situation	1.1 Physical hazards to own and others' health and safety are identified 1.2 Immediate risk to self and health and safety of the casualty/OHS are minimised by controlling the hazard in accordance with OHS requirements 1.3 Casualty's vital signs and physical condition are assessed in accordance with workplace procedures
2. Apply basic First Aid techniques	2.1 First Aid management is provided in accordance with established First Aid procedures 2.2 Casualty is reassured in a caring and calm manner and made comfortable using available resources 2.3 First Aid assistance is sought from others in a timely manner and as appropriate 2.4 Casualty's condition is monitored and responded to in accordance with effective First Aid principles and workplace procedures 2.5 Details of casualty's physical condition, changes in conditions, management and response to management are accurately recorded in line with organisational procedures 2.6 Casualty management is finalised according to casualty's needs and First Aid principles

<p>3. Communicate details of the incident</p>	<p>3.1 Appropriate medical assistance is requested using relevant communication media and equipment</p> <p>3.2 Details of casualty's condition and management activities are accurately conveyed to emergency services/relieving personnel</p> <p>3.3 Reports to supervisors are prepared in a timely manner, presenting all relevant facts according to established company procedures</p>
---	---

RANGE OF VARIABLES

VARIABLE	RANGE
1. Physical hazards may include:	1.1 Workplace hazards 1.2 Environmental hazards 1.3 Proximity of other people 1.4 Hazards associated with the casualty management processes
2. Risks may include:	2.1 Worksite equipment, machinery and substances 2.2 Environmental risks 2.3 Bodily fluids 2.4 Risk of further injury to the casualty 2.5 Risks associated with the proximity of other workers and bystanders
3. Vital signs include:	3.1 Breathing 3.2 Circulation 3.3 Consciousness
4. Established First Aid principles include:	4.1 Checking the site for danger to self, casualty and others and minimising the danger 4.2 Checking and maintaining the casualty's airway, breathing and circulation
5. Casualty's condition is managed for:	5.1 Abdominal injuries 5.2 Allergic reactions 5.3 Bleeding 5.4 Burns - thermal, chemical, friction, electrical 5.5 Cardiac conditions 5.6 Chemical contamination 5.7 Cold injuries 5.8 Crush injuries 5.9 Dislocations 5.10 Drowning 5.11 Envenomation - snake, spider, insect and marine bites 5.12 Environmental conditions such as hypothermia, dehydration, heat stroke 5.13 Epilepsy, diabetes, asthma and other medical conditions 5.14 Eye injuries 5.15 Fractures 5.16 Head injuries 5.17 Minor skin injuries 5.18 Neck and spinal injuries

	<ul style="list-style-type: none"> 5.19 Needle stick injuries 5.20 Poisoning and toxic substances 5.21 Respiratory management of asthma and/or choking 5.22 Shock 5.23 Smoke inhalation 5.24 Soft tissue injuries including sprains, strains, dislocations 5.25 Substance abuse - including drugs 5.26 Unconsciousness including not breathing and no pulse
6. First Aid management will need to account for:	<ul style="list-style-type: none"> 6.1 Location and nature of the workplace 6.2 Environmental conditions eg electricity, biological risks, weather, motor vehicle accidents 6.3 Location of emergency services personnel 6.4 Use and availability of First Aid equipment and resources 6.5 Infection control
7. Medications may include:	<ul style="list-style-type: none"> 7.1 Asthma—aerosol bronchodilators casualty’s own or from First Aid kit in accordance with state and territory legislation 7.2 Severe allergic reactions—adrenaline—subject to casualty’s own regime
8. Resources and equipment are used appropriate to the risk and may include:	<ul style="list-style-type: none"> 8.1 Defibrillation units 8.2 Pressure bandages 8.3 Thermometers 8.4 First Aid kit 8.5 Eyewash 8.6 Thermal blankets 8.7 Pocket face masks 8.8 Rubber gloves 8.9 Dressing 8.10 Spacer device 8.11 Cervical collars
9. Communication systems may include but are not be limited to:	<ul style="list-style-type: none"> 9.1 Mobile phone 9.2 Satellite phones 9.3 HF/VHF radio 9.4 Flags 9.5 Flares 9.6 Two-way radio 9.7 Email 9.8 Electronic equipment

EVIDENCE GUIDE

<p>1 Critical Aspects of Competency</p>	<p>Assessment requires evidences that the candidate:</p> <ul style="list-style-type: none"> 1.1 Applied Resuscitation 1.2 Demonstrated First Aid casualty management principles assessing and minimising danger, maintaining the casualty's airway, breathing and circulation 1.3 Performed safe manual handling of casualty 1.4 Considered the welfare of the casualty 1.5 Reported preparation 1.6 Communicated effectively 1.7 Ability to interpret and use listed documents <p>Assessment should confirm the knowledge of:</p> <ul style="list-style-type: none"> 1.8 Basic anatomy and physiology 1.9 Company standard operating procedures (sops) 1.10 Dealing with confidentiality 1.11 Knowledge of the First Aiders' skills and limitations 1.12 OHS legislation and regulations 1.13 How to gain access to and interpret material safety data sheets (MSDS)
<p>2 Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Basic anatomy and physiology 2.2 Duty of care 2.3 Resuscitation 2.4 Bleeding control 2.5 Care of unconscious 2.6 State and territory regulatory requirements relating to currency of skill and knowledge 2.7 Decision making 2.8 Infection control 2.9 Legal requirements 2.10 Airway management 2.11 Assertiveness skills 2.12 Communication skills

3 Underpinning Skills	3.1 Resuscitation 3.2 First Aid casualty management principles assessing and minimising danger, maintaining the casualty's airway, breathing and circulation 3.3 Safe manual handling of casualty 3.4 Consideration of the welfare of the casualty 3.5 Report preparation 3.6 Communication skills 3.7 Ability to interpret and use listed documents
4. Resource Implication	4.1 First Aid equipment and materials 4.2 Communication equipment appropriate to the workplace 4.3 Workplace documentation 4.4 Enterprise procedures
5. Methods of Assessment	5.1 Competency should be assessed: 5.2 Through direct observation and oral interview.
6. Context of Assessment	6.1 Competence may be demonstrated working individually, under supervision or as part of a First Aid team. 6.2 Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible. Consistency of performance should be maintained over the required range of workplace situations until renewal of competence /license is required by the industry/organisation.

CORE COMPETENCIES

UNIT OF COMPETENCY: Support horticultural crop work

UNIT CODE: AGR611306

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to support horticultural production under supervision. It requires the ability to prepare materials, tools and equipment for horticultural production work, undertake routine production assistance work, handle materials and equipment, and clean up on completion of work. Supporting horticultural production work requires knowledge of safe work practices relating to basic crop handling techniques including planting, maintaining, picking and packing, loading and unloading, and using associated farm tools and equipment.

ELEMENT	PERFORMANCE CRITERIA
	<i>Italicized</i> terms are elaborated in the Range of Variables
1 Prepare materials, tools and equipment for horticultural production work	<p>1.1 The required materials, tools and equipment are identified according to lists provided and/or supervisor's instructions.</p> <p>1.2 Checks are conducted on all materials, tools and equipment with insufficient or faulty items reported to the supervisor.</p> <p>1.3 Techniques used when loading and unloading materials demonstrate correct manual handling and minimise damage to the load and the vehicle.</p> <p>1.4 Suitable personal protective equipment (PPE) is selected and checked prior to use.</p> <p>1.5 Work support is provided according to OHS requirements and according to workplace information.</p> <p>1.6 OHS hazards are identified and reported to the supervisor.</p>

<p>2 Undertake horticultural production work as directed</p>	<p>2.1 Instructions and directions provided by supervisor are followed and clarification sought when necessary.</p> <p>2.2 Work is undertaken in a safe and environmentally appropriate manner according to enterprise guidelines.</p> <p>2.3 Interactions with other staff and customers is carried out in a positive and professional manner.</p> <p>2.4 Enterprise policy and procedures in relation to workplace practices, handling and disposal of materials is observed.</p> <p>2.5 Problems or difficulties in completing work to required standards or timelines are reported to supervisor.</p>
<p>3 Handle materials and equipment</p>	<p>3.1 Waste material produced during work is stored in a designated area according to supervisor's instructions.</p> <p>3.2 Materials, equipment and machinery are handled and transported according to supervisor's instructions and enterprise guidelines.</p> <p>3.3 A clean and safe work site is maintained while working.</p>
<p>4 Clean up on completion of work</p>	<p>4.1 Materials are returned to store or disposed of according to supervisor's instructions.</p> <p>4.2 Tools and equipment are cleaned, maintained and stored according to manufacturers specifications and supervisors instructions.</p> <p>4.3 Work outcomes are reported to the supervisor.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. horticultural production	1.1. Crops may include fruit, vegetables, herbs, flowers, foliage, bulbs, tubers, nuts, mushrooms, wild harvest plants and oils.
2. horticultural crop work	2.1 Assistance with all activities associated with horticultural production such as land preparation, seeding/planting, maintaining, loading and unloading, harvesting/picking, sorting, and packing. 2.2 Assisting with routine maintenance or cleaning of sheds and other buildings, fences, fixtures and fitting.
3. instructions	3.1 Instructions may include Standard Operating Procedures (SOPs), enterprise policy and procedures, specifications, work notes, Material Safety Data Sheets (MSDSs), manufacturers instructions, or verbal directions from manager or supervisor.
4. tools and equipment	4.1 Tools and equipment may include knives, secateurs, spades, forks, ladders, hoes, packing equipment, boxes, bins and buckets, hoses and hose fittings.
5. workplace information	5.1 Workplace information may include procedures for disposing of waste materials, work instructions or verbal instructions from the supervisor.
6. OHS hazards	6.1 Hazards may include, solar radiation, dust, noise, air- and soil-borne micro-organisms, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, holes, and slippery and uneven surfaces.
7. Personal protective clothing and equipment	7.1 Personal protective clothing and equipment may include steel capped boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, face mask and ear protectors.
8. Waste materials	8.1 Plant debris, litter and broken components, plastic, metal, paper-based materials. These may be recycled, re-used, returned to the manufacturer or disposed of according to enterprise work procedures.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1. Demonstrated competence in supporting horticultural production work which have been carried out according to instructions and within the required timeliness.</p> <p>1.2. The skills and knowledge that are required to support horticultural production work must be transferable to different work environments. For example, this could include different tasks, crops and types of orchards/plantations/farms.</p>
<p>2. Underpinning Knowledge and Attitudes</p>	<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below.</p> <p>2.1 safe work practices</p> <p>2.2 planting, picking, packing, loading and transporting techniques appropriate to this level</p> <p>2.3 use of horticultural tools and equipment.</p>
<p>3. Underpinning Skills</p>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:</p> <p>3.1 prepare materials, tools and equipment for work</p> <p>3.2 undertake work as directed</p> <p>3.3 handle materials and equipment</p> <p>3.4 clean up on completion of work.</p>
<p>4. Resource Implication</p>	<p>The following resources should be provided:</p> <p>4.1 workplace with nursery facilities</p> <p>4.2 tools, equipment and materials required for nursery operations</p> <p>4.3 enterprise procedures.</p>
<p>5. Methods of Assessment</p>	<p>Competency should be assessed:</p> <p>5.1 through direct observation /demonstration</p> <p>5.2 portfolio</p>
<p>6. Context of Assessment</p>	<p>6.1 Assessment should be in a workplace.</p> <p>6.2 Demonstration of competency over time and on a number of occasions.</p>

UNIT OF COMPETENCY: SUPPORT NURSERY WORK

UNIT CODE: AGR611307

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to carry out work in wholesale or retail nurseries while under supervision. It requires the ability to prepare materials, tools and equipment for nursery work, undertake nursery work activities, store and stockpile materials, and clean up on completion of work. Supporting nursery work requires knowledge of safe work practices, nursery hygiene and quality control, nursery plant maintenance activities, basic stock control procedures, and propagation techniques.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1 Prepare materials, tools and equipment for nursery work	1.1 The required materials, tools and equipment are identified according to lists provided and/or supervisor's instructions . 1.2 Checks are conducted on all materials, tools and equipment, with insufficient or faulty items reported to the supervisor. 1.3 Techniques used when loading and unloading materials demonstrate correct manual handling, and minimise damage to the load and the vehicle. 1.4 Suitable personal protective equipment (PPE) is selected and checked prior to use. 1.5 Nursery support is provided according to OHS requirements and workplace information . 1.6 OHS hazards are identified and reported to the supervisor.

<p>2 Undertake nursery work as directed</p>	<p>2.1 Instructions and directions provided by supervisor are followed, and clarification sought when necessary.</p> <p>2.2 Nursery work is undertaken in a safe and environmentally appropriate manner according to nursery guidelines.</p> <p>2.3 Interactions with other staff and customers is carried out in a positive and professional manner.</p> <p>2.4 Nursery policy, procedures and OHS requirements in relation to workplace hygiene practices, handling and disposal of materials is observed.</p> <p>2.5 Problems or difficulties in completing work to required standards or timelines are reported to supervisor.</p>
<p>3 Store and stockpile materials</p>	<p>3.1 Plant debris and waste material produced during nursery activities are stored according to supervisors instructions.</p> <p>3.2 Plant debris and waste materials are prepared and processed in an appropriate and safe manner according to supervisor's instructions.</p> <p>3.3 Surplus materials are stockpiled for removal according to supervisor's instructions.</p> <p>3.4 A clean and safe work site is maintained while completing nursery activities.</p>
<p>4 Clean up on completion of nursery work</p>	<p>4.1 Plants and materials are stored according to supervisor's instructions and OHS requirements.</p> <p>4.2 Tools and equipment are cleaned, maintained and stored according to manufacturers specifications and supervisors instructions.</p> <p>4.3 Work outcomes are reported to the supervisor.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. nursery work	<p>1.1 Assisting with the display of nursery products (e.g., plant, goods and supplies) including unpacking, placing where directed, replenishing as required, preparing and placing price tickets, labels and other display materials.</p> <p>1.2 Provide nursery plant care including watering, weeding, removing dead materials, staking, trimming, and potting on of plants as directed.</p> <p>1.3 Load and unload nursery stock including preparing stock for dispatch, and checking stock on receipt or at dispatch against documentation.</p> <p>1.4 Supporting propagation activities including assisting with preparing planting media, collecting propagating materials, and blocking up plants in correct patterns and spacing.</p>
2. instructions	<p>2.1 Instructions may include Standard Operating Procedures (SOPs), company policy and procedures in regard to product merchandising and displays, specifications, work notes, Material Safety Data Sheets (MSDSs), manufacturers instructions, product labels, or verbal directions from manager, supervisor, or senior operator.</p>
3. tools and equipment	<p>3.1 Tools and equipment may include manual or electronic ticketing/labelling equipment, wheelbarrows, trolleys, motorised trolleys, scissors, cleaning equipment, secateurs, knives, media trays, water spray container, dibblers, and rubbish bins.</p>
4. workplace information	<p>4.1 Workplace information may include procedures for disposing of waste materials, work instructions or verbal instructions from the supervisor, OHS legislative requirements and relevant Codes of Practice.</p>
5. OHS hazards	<p>5.1 Hazards may include heavy materials and equipment, slippery or uneven surfaces, moving machinery and vehicles, solar radiation, and potential dangers from handling potting media, fertilisers, watering systems, and spider and insect bites.</p>

6. personal protective clothing and equipment	6.1 Personal protective clothing and equipment may include steel capped boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, face mask and ear protectors.
7. hygiene practices	7.1 Hygiene practices which may be applied include disinfestation and storage of planting media, disinfestation of contaminated plants and materials, hand washing, footbaths, sanitising/sterilising tools, equipment and benching, access restrictions, and handling practices which minimise cross contamination.
8. waste	8.1 Environmental considerations for waste disposal may include prompt removal and/or disinfestation of organic waste, use of mixing site, neutralising pits for disposal of chemicals and cleaning products, recycling seed trays, poly trays, bags, and recycling waste water or disposing using approved discharge system.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Demonstrate competence in supporting nursery work requires evidence that nursery–related work which been carried out according to instructions and within the required timelines.</p> <p>1.2 The skills and knowledge that are required to support nursery work must be transferable to a different work environment. For example, this could include different work tasks, types of nurseries and supervisors.</p>
<p>2. Underpinning Knowledge and Attitudes</p>	<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts and to deal with unplanned events. The knowledge requirements for this competency standard are listed below.</p> <p>2.1 Safe work practices.</p> <p>2.2 Nursery hygiene and quality control.</p> <p>2.3 Nursery plant maintenance activities.</p> <p>2.4 Basic stock control procedures.</p> <p>2.5 Propagation techniques.</p> <p>2.6 OHS legislative requirements and Codes of Practice.</p>
<p>3. Underpinning Skills</p>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:</p> <p>3.1 Prepare materials, tools and equipment for nursery work.</p> <p>3.2 Undertake nursery work as directed.</p> <p>3.3 Store and stockpile materials.</p> <p>3.4 Clean up on completion of nursery work.</p>
<p>4. Resource Implication</p>	<p>The following resources should be provided:</p> <p>4.1 workplace with nursery facilities</p> <p>4.2 tools, equipment and materials required for nursery operations</p> <p>4.3 enterprise procedures.</p>
<p>5. Methods of Assessment</p>	<p>Competency should be assessed:</p> <p>5.1 through direct observation / demonstration</p> <p>5.2 portfolio .</p>
<p>6. Context of Assessment</p>	<p>6.1 Assessment should be in a workplace.</p>

	6.2 Demonstration of competency over time and on a number of occasions.
--	---

UNIT OF COMPETENCY: SUPPORT AGRONOMIC CROP WORK

UNIT CODE: AGR611308

UNIT DESCRIPTOR : This unit covers the skills and knowledge required to support agronomic cropping work under supervision. It requires the ability to prepare materials; tools and equipment for cropping work, undertake cropping activities, handle materials and equipment, and clean up on completion of work. Supporting agronomic cropping work requires knowledge of safe work practices, cropping practices and related tools and equipment.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1 Prepare materials, tools and equipment for agronomic crop work	<p>1.1 The required materials, tools and equipment are identified according to lists provided and/or supervisor's instructions.</p> <p>1.2 Checks are conducted on all materials, tools and equipment with insufficient or faulty items reported to the supervisor.</p> <p>1.3 Techniques used when loading and unloading materials demonstrate correct manual handling and minimise damage to the load and the vehicle.</p> <p>1.4 Suitable personal protective equipment (PPE) is selected and checked prior to use.</p> <p>1.5 Cropping support is provided according to OHS requirements and according to workplace information.</p> <p>1.6 OHS hazards are identified and reported to the supervisor.</p>

<p>2 Undertake agronomic crop work as directed</p>	<p>2.1 Instructions and directions provided by supervisor are followed and clarification sought when necessary.</p> <p>2.2 Cropping work is undertaken in a safe and environmentally appropriate manner according to enterprise guidelines.</p> <p>2.3 Interactions with other staff and customers are carried out in a positive and professional manner.</p> <p>2.4 Enterprise policy and procedures in relation to workplace practices, handling and disposal of materials is observed.</p> <p>2.5 Problems or difficulties in completing work to required standards or timelines are reported to supervisor.</p>
<p>3 Handle materials and equipment</p>	<p>3.1 Waste material produced during cropping work is stored in a designated area according to supervisor's instructions.</p> <p>3.2 Materials, equipment and machinery are handled and transported according to supervisor's instructions and enterprise guidelines.</p> <p>3.3 A clean and safe work site is maintained while completing cropping activities.</p>
<p>4 Clean up on completion of cropping work</p>	<p>4.1 Materials are returned to store or disposed of according to supervisor's instructions.</p> <p>4.2 Tools and equipment are cleaned, maintained and stored according to manufacturers specifications and supervisors instructions.</p> <p>4.3 Work outcomes are reported to the supervisor.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Agronomic crop	1.1 Agronomic crops covered by this unit include coarse grains, grain legumes, coffee, coconuts, cotton, soya beans, peanuts and sugar cane.
2. Agronomic crop work	2.1 Assistance with all activities associated with cropping such as land preparation, seeding, fertilising, harvesting, baling, raking, loading and unloading or other relevant duties. 2.2 Removing weeds (rouging) or rocks from crops or fields, and routine maintenance of sheds and other workplaces.
3. Instructions	3.1 Instructions may include Standard Operating Procedures (SOPs), enterprise policy and procedures, specifications, work notes, Material Safety Data Sheets (MSDSs), manufacturers instructions, or verbal directions from manager or supervisor.
4. Tools and equipment	4.1 Tools and equipment may include knives, hand tools, rope, sack trucks, fencing tools, augers, and brooms.
5. workplace information	5.1 Workplace information may include procedures for disposing of waste materials, work instructions or verbal instructions from the supervisor.
6. OHS hazards	6.1 Hazards may include, solar radiation, dust, noise, air- and soil-borne micro organisms, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, holes, and slippery and uneven surfaces.
7. Personal protective clothing and equipment	7.1 Personal protective clothing and equipment may include steel capped boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, face mask and ear protectors.
8. Waste materials	8.1 Plant debris, litter and broken components, plastic, metal, or paper-based materials. These may be recycled, re-used, returned to the manufacturer or disposed of according to enterprise work procedures.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1. Demonstrated competence in supporting cropping work which is carried out according to instructions and within the required timelines. 1.2. The skills and knowledge that are required to support cropping work must be transferable to different work environments. For example, this could include different tasks, enterprises, and types of crops.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below.</p> <ol style="list-style-type: none"> 2.1 safe work practices 2.2 farm tools and equipment 2.3 repair and maintenance of structures.
<p>3. Underpinning Skills</p>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:</p> <ol style="list-style-type: none"> 3.1 prepare materials, tools and equipment for cropping work 3.2 undertake work as directed 3.3 handle materials and equipment 3.4 clean up on completion of work.
<p>4. Resource Implication</p>	<p>The following resources should be provided:</p> <ol style="list-style-type: none"> 4.1 workplace with commercial cropping 4.2 tools, equipment and materials required for supporting cropping activities 4.3 enterprise procedures cropping activities
<p>5. Methods of Assessment</p>	<p>Competency should be assessed:</p> <ol style="list-style-type: none"> 5.1 through direct observation / demonstration 5.2 portfolio
<p>6. Context of Assessment</p>	<ol style="list-style-type: none"> 6.1 Assessment should be in a workplace. 6.2 Demonstration of competency over time and on a number of occasions.

UNIT OF COMPETENCY: SUPPORT IRRIGATION WORK

UNIT CODE: AGR611309

UNIT DESCRIPTOR

This unit covers the skills and knowledge required to support the installation, operation and maintenance of watering and drainage systems under direct supervision. It requires the ability to prepare materials, tools and equipment for irrigation work, undertake irrigation activities, handle materials and equipment, and clean up on completion of work. Supporting irrigation work requires knowledge of safe work practices, irrigation work techniques, irrigation tools and equipment, and repair and maintenance of irrigation components and systems.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variables
1 Prepare materials, tools and equipment for irrigation work	1.1 The required materials, tools and equipment are identified according to lists provided and/or supervisor's instructions . 1.2 Checks are conducted on all materials, tools and equipment with insufficient or faulty items reported to the supervisor. 1.3 Techniques used when loading and unloading materials demonstrate correct manual handling and minimise damage to the load and the vehicle. 1.4 Suitable personal protective equipment (PPE) is selected and checked prior to use. 1.5 Irrigation support is provided according to OHS requirements and according to workplace information . 1.6 OHS hazards are identified and reported to the supervisor.

<p>2 Undertake irrigation work as directed</p>	<p>2.1 Instructions and directions provided by supervisor are followed, and clarification sought when necessary.</p> <p>2.2 Irrigation work is undertaken in a safe and environmentally appropriate manner according to enterprise guidelines.</p> <p>2.3 Interactions with other staff and customers is carried out in a positive and professional manner.</p> <p>2.4 Enterprise policy and procedures in relation to workplace practices, handling and disposal of materials is observed.</p> <p>2.5 Problems or difficulties in completing work to required standards or timelines are reported to supervisor.</p>
<p>3 Handle materials and equipment</p>	<p>3.1 Waste material and debris produced during irrigation work is stored in a designated area according to supervisor's instructions.</p> <p>3.2 Materials, equipment and machinery are handled and transported according to supervisor's instructions and enterprise guidelines.</p> <p>3.3 A clean and safe work site is maintained while undertaking irrigation activities.</p>
<p>4 Clean up on completion of irrigation activities</p>	<p>4.1 Materials are returned to store or disposed of according to supervisor's instructions.</p> <p>4.2 Tools and equipment are cleaned, maintained and stored according to manufacturers specifications and supervisor's instructions.</p> <p>4.3 Site is made good according to supervisor's instructions and good environmental practices.</p> <p>4.4 Work outcomes are reported to the supervisor.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. irrigation work	<p>1.1 Assisting with installation of irrigation and/or drainage pipes and components for gravity fed or pressurised systems, including digging trenches, back filling of trenches and completing other basic tasks as instructed.</p> <p>1.2 Assisting with maintenance of irrigation and/or drainage systems including clearing blockages, and completing other basic tasks as instructed.</p> <p>1.3 Work with a range of materials including plastic and metal pipes and components using hand tools commonly used in irrigation work.</p> <p>1.4 Associated irrigation activities including assisting in establishing work base, clearing site, erecting barriers and signs, unloading and loading of materials, setting out of works, cleaning up site and disposal of debris and materials.</p>
2. instructions	<p>2.1 Instructions may include Standard Operating Procedures (SOPs), enterprise policy and procedures, specifications, work notes, Material Safety Data Sheets (MSDSs), manufacturers instructions, or verbal directions from manager or supervisor.</p>
3. tools and equipment	<p>3.1 Tools and equipment may include levelling equipment, wheelbarrow, string lines, tape measures, marking gauges, spades, shovels, crow bars, rakes, brooms, sanding blocks and hacksaws.</p>
4. workplace information	<p>4.1 Workplace information may include procedures for disposing of waste materials, work instructions or verbal instructions from the supervisor.</p>
5. OHS hazards	<p>5.1 Hazards may include, solar radiation, dust, noise, air- and soil-borne micro-organisms, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, holes, and slippery and uneven surfaces.</p>
6. personal protective clothing and equipment	<p>6.1 Personal protective clothing and equipment may include steel capped boots/shoes, overalls, gloves, sun hat, sunscreen lotion, safety goggles, face mask and ear protectors.</p>

7. waste materials	7.1 Plant debris, litter and broken components, mulches, compost, plastic, metal, and paper-based materials. These may be recycled, re-used, returned to the manufacturer, or disposed of according to enterprise work procedures.
8. made good	8.1 Paths are swept and cleaned, work area is left in a good state, disturbed areas are repaired, all materials, debris, tools and equipment are removed from site, and other signs of disturbance or damage are corrected.

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1. Demonstrated competence in supporting irrigation work which have been carried out according to instructions and within the required timelines. 1.2. The skills and knowledge that are required to support irrigation work must be transferable to different work environments. For example, this could include different irrigation systems and components, work locations and enterprise policies and procedures.
<p>2. Underpinning Knowledge and Attitudes</p>	<p>Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below.</p> <ol style="list-style-type: none"> 2.1 safe work practices 2.2 preparing for irrigation work and cleaning up on completion 2.3 basic construction techniques 2.4 irrigation tools and equipment 2.5 maintenance practices for planted areas 2.6 basic repair and maintenance of irrigation components and systems.
<p>3. Underpinning Skills</p>	<p>To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:</p> <ol style="list-style-type: none"> 3.1 prepare materials, tools and equipment for irrigation work 3.2 undertake irrigation work as directed 3.3 handle materials and equipment 3.4 clean up on completion of work.

4. Resource Implication	<p>The following resources should be provided:</p> <p>4.1 workplace with irrigation (any type) and/or drainage system</p> <p>4.2 tools, equipment and materials used maintaining and operating irrigation and/or drainage system</p> <p>4.3 enterprise procedures relating to irrigation and drainage operation and maintenance including maintenance schedules.</p>
5. Methods of Assessment	<p>Competency should be assessed:</p> <p>5.1 through direct observation / demonstration</p> <p>5.2 portfolio</p>
6. Context of Assessment	<p>6.1 Assessment should be in a workplace.</p> <p>6.2 Demonstration of competency over time and on a number of occasions.</p>

SECTION 3 TRAINING STANDARDS

These guidelines are set to provide the Technical and Vocational Education and Training (TVET) providers with information and other important requirements to consider when designing training programs for AGRICULTURAL CROPS PRODUCTION NC I.

3.1 CURRICULUM DESIGN

Course Title: AGRICULTURAL CROPS PRODUCTION Level: NC I

Nominal Training Duration : 302 Hours

Course Description:

This course is designed to enhance the knowledge, desirable skills and attitudes of Agricultural Crops Production NC I in accordance with industry standards. It covers Basic, Common and Core Competencies such as:

BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Receive and respond to workplace communication	1.1 Explain routinary speaking & messages in a workplace. 1.2 Follow routinary speaking & message 1.3 Perform work duties following written notices.	Group discussion Interaction	Interviews/ questioning Observation
2. Work with others	2.1 Develop effective workplace relationship. 2.2 Contribute to work group activities.	Group discussion Interaction	Interviews/ questioning Demonstration Observation
3. Demonstrate work values	3.1 Define the purpose of work 3.2 Apply work values/ethics 3.3 Deal with ethical problems 3.4 Maintain integrity of conduct in the workplace	Group discussion Interaction	Demonstration Observation Interviews/ questioning

4.Practice housekeeping procedures	4.1 Sort and remove unnecessary items 4.2 Arrange items 4.3 Maintain work areas, tools and equipment 4.4 Follow standardize work process and procedures 4.5 Perform work spontaneously	Group discussion Interaction	Demonstration Observation Interviews/ questioning
------------------------------------	--	---------------------------------	--

COMMON COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Apply safety measures	1.1 Determine areas of concern for safety measures 1.2 Apply appropriate safety measures 1.3 Safekeep and maintain materials, tools and equipment. 1.4 Dispose waste materials and outfit	Self-paced/ modular Lecture /Discussion Practical demonstration Visit/tour Visual aids	Oral/written examination Interviews Direct observation Practical demonstration
2. Use of farm tools and equipment	2.1 Prepare and use farm tools 2.2 Prepare and operate farm equipment 2.3 Observe safety precautions in handling farm tools and equipment. 2.4 Carry out routine maintenance and storage of tools and equipment	Self-paced/ modular Lecture /Discussion Practical demonstration Visit/tour Visual aids	Oral/written examination Interviews Direct observation Practical demonstration
3. Perform estimation and basic calculation	3.1 Perform estimation activities 3.2 Perform basic workplace calculation 3.3 Apply corrective measures as necessary	Self-paced/ modular Lecture /Discussion Practical demonstration Interaction Practical exercise Visual aids	Oral/written examination Interviews Direct observation Practical demonstration Practical exercise

4. Apply basic first aid	4.1 Assess casualty's condition 4.2 Safe handling of casualty 4.2 Apply basic first aid techniques 4.3 Monitor casualty 4.4 Record and report casualty's condition 4.5 Communicate details of the incident 4.6 Prepare report of work outcomes	Demonstration Dual training Self-Paced Learning Lecture	Interview Written Practical Application (demo) Direct Observation
--------------------------	--	--	---

CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Support horticultural crop work	1.1 Prepare materials, tools and equipment 1.2 Observe safety precautions in horticultural operation 1.3 Assist with preparing land for sowing/planting 1.4 Assist in sowing/planting crop 1.5 Assist in maintaining crop 1.6 Assist in fertilizing crop 1.7 Assist in loading and unloading 1.8 Assist in harvesting/picking, sorting and packing 1.9 Carry out routine maintenance and storage of materials, tools and equipment 1.10 Carry out routine maintenance of workplace 1.11 Prepare report of work outcomes	Demonstration Dual training Individual Self-paced Learning Lecture	Interview Written Practical Application (Demo) Direct Observation

<p>2. Support nursery work</p>	<p>2.1 Prepare materials, tools and equipment 2.2 Observe safety precautions in nursery operation 2.3 Use materials, tools and equipment 2.4 Assisting with the display of nursery products 2.5 Load and unload nursery stock 2.6 Provide nursery plant care 2.7 Assist in propagation activities 2.8 Carry out routine maintenance and storage of materials, tools and equipment 2.9 Carry out routine maintenance of workplace 2.10 Prepare report on work outcomes</p>	<p>Demonstration Dual training Individual Self-paced Learning Lecture</p>	<p>Interview Written Practical Direct Observation</p>
<p>3. Support agronomic crop work</p>	<p>3.1 Prepare materials, tools and equipment 3.2 Observe safety precautions in agronomic operation 3.3 Assist with preparing land for sowing/planting 3.4 Assist in sowing/planting crop 3.5 Assist in maintaining crop 3.6 Assist in fertilizing crop 3.7 Assist in harvesting crop 3.8 Carry out routine maintenance and storage of materials, tools and equipment 3.9 Carry out routine maintenance of workplace 3.10 Prepare report on work outcomes</p>	<p>Demonstration Dual training Individual Self-paced learning Lecture</p>	<p>Written examination Demonstration of practical skills Direct observation Interview Check workplace record</p>

<p>4. Support irrigation work</p>	<p>4.1 Prepare materials, tools and equipment 4.2 Observe safety precautions in irrigation operation 4.3 Use materials, tools and equipment 4.4 Assist in the installation of irrigation and/or drainage pipes 4.5 Assist in the maintenance of irrigation and/or drainage systems 4.6 Interpret plans and manuals 4.7 Assist in the maintenance of irrigation components and systems. 4.8 Carry out routine maintenance and storage of materials, tools and equipment 4.9 Carry out routine maintenance of workplace 4.10 Prepare report on work outcomes</p>	<p>Demonstration Dual training Individual Self-paced Learning Lecture</p>	<p>Written examination Demonstration of practical skills Direct observation Interview</p>
-----------------------------------	---	--	--

3.2. TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is individualized and self-paced;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Allows for recognition of prior learning (RPL) or current competencies;

- Training allows for multiple entry and exit; and
- Approved training programs are nationally accredited.

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

3.3. TRAINEE ENTRY REQUIREMENTS

Trainees or students wishing to enroll in this course should possess the following requirements.

- Able to read and write;
- With good moral character;
- Ability to communicate, both oral and written
- Physically fit and mentally healthy as certified by a Public Health Officer

3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS

AGRICULTURAL CROPS PRODUCTION NC I

Recommended list of tools, equipment and materials for the training of 25 trainees for Agricultural Crops Production NC I

TOOLS		EQUIPMENT		MATERIALS	
QTY	Description	QTY	Description	QTY	Description
25 pcs	Bolos	2	Booth/temporary shed	250 pcs.	Agri bags, plastic
10 pcs	Broomstick	5	Cart (Kariton & paragus)	500 pcs.	Bamboo stick
5 pcs	Calculator	2	Comb-tooth harrow	5 pcs.	Basket
5 pcs	Container	1	Computer	5 rims	Bond paper
5 sets	Cutting tools	5	Crates	5 pcs.	Catching nets
5 sets	Digging tools	1	Drying oven	3 dozen	Clips
2 pcs	Drying meter	1	Farm/ field	5 sacks	Coconut dust
10 pcs	Dulos	1	Greenhouse/nursery	5 sacks	Compost
5 pcs	Fruit crate	1	Harvesting equipment	1 sack	Fertilizers
5 sets	Harvesting tools	1	Irrigation system (sprinkler, mist/drip irrigation)	1 kit	First aide supplies/medicine
25 pcs	Hat	1	Mower (grass cutter)	5 bottles	Flower inducer
5 pcs	Knapsack sprayer	1	Over head projector (OHP)	5 bottles	Fungicides
5 sets	Knife	1	Portable chain saw	25 pairs	Gloves
5 pcs	Light hoe	1	Post-Harvest treatment equipment	5 sacks	Growing media (garden soil, sewed sand, compost, soil, manure and sawdust/rice
2 pcs	Moisture meter	1	Power sprayer	5 pcs.	Killing bottles
2 pcs	Petri-dish	1	Rotavator		
3 pcs	pH meter	1	Service vehicle	5 pcs.	Marking pens
5 pcs	Pick mattock	1	Sorting equipment	25 pcs.	Masks

5 pcs	Picking knife	2 2	Spike tooth harrow	5 sacks	Mulching material
1	Plow	1	Storage room	25 m	Hair nets
2 sets	Plumbing tools	1	Surface irrigation system		Packaging materials, assorted
5 sets	Post-Harvest treatment tools	1 1	Tractor/Carabao	5	Pail
25 pcs	Protective coat	1	Typewriter	5 rims	Paper/bond
25 pcs	Protective gadgets			25	Pencil
5 pcs	Pruning sheers		TRAINING MATERIALS	25	Pens
5 pcs	Rake	25	Brochures	5 bottles	Pesticides/Insecticides
10 pcs	Scissors	2	Instructional supplies & materials	5 pieces	Pieces of cloth
5	Seed bed	2	Visual aids	100	Plastic bag
5	Seedling tray	5	Reference materials/Books (Kinds of Tropical Fruits)	1 set	Plumbing supplies
10	Shovel	5 2	Reference manuals (first aide kit with reference manual)	250	Pots
15	Sprinklers	5	Data (Data on result of soil analysis)	5 sacks	Propagating media (garden soil, sawdust, sand, composed, coconut coir)
2	Step ladder	5	Procedural manuals	3 sacks	Rice hull
2	Storage tools/cabinet	5	Soil samples analysis	3 rolls	Rope, (small, med. Large)
25 pcs	Transplanting tools			3 boxes	Rubber band
25 pcs	Trowel			25 pairs	Rubber boots
					Rubber knots
				25 sacks	Sacks

				Sample of matured vegetable crops
			5 boxes	Seed box
				Seedlings, assorted
			2 packs per crop	Seeds
			5	Soil auger
			5 rolls	String
			5 bottles	Tetrazolium chemical
				Transplanting supplies
			5 pcs.	Detergent, liquid and powder soap
			5 pcs.	Brush

3.5 TRAINING FACILITIES

AGRICULTURAL CROP PRODUCTION NC I

Based on a class size of 25 students/trainees.

SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS
A. Building (permanent)			170.30
Student/Trainee Working Space	2.00 x 2.00 per student/trainee	4.00 per student	100.00
Learning Resource Center	3.00 x 5.00	15.00	15.00
Facilities/Equipment/Circulation (30% of teaching accommodation)			39.30
Store Room	4.00 x 4.00	16.00	16.00
B. Experimental Land Area	5 sq m /trainee	125.00	125.00

Note: Experimental area will change according to availability of land.

3.6 TRAINER'S QUALIFICATIONS FOR AGRI-FISHERY SECTOR

AGRICULTURAL CROPS PRODUCTION NC I

TRAINER QUALIFICATION (TQ I)

- Must be a holder of Agricultural Crops Production NC II or its equivalent
- Must have undergone training on Training Methodology I (TM I)
- Must be computer literate
- Must be physically and mentally fit
- *Must have at least 2 years job/industry experience
- Must be a civil service eligible (for government position or appropriate professional license issued by the Professional Regulatory Commission)

* Optional. Only when required by the hiring institution.

Reference: TESDA Board Resolution No. 2004 03

3.7 INSTITUTIONAL ASSESSMENT

Institutional Assessment is to be undertaken by the learner who enrolled in a structured learning program to determine the achievement of competencies. It is administered by the trainer/assessor at end of each learning module.

The result of the institutional assessment may be considered as an evidence for national assessment.

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1. To attain the National Qualification of **Agricultural Crops Production NC I**, the candidate must demonstrate competence through project type assessment covering all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2. The qualification of Agricultural Crops Production NC I may be attained through:
 - 4.2.1. Accumulation of Certificates of Competency (COCs) in the following areas:
 - 4.2.1.1 Support horticultural crop work
 - 4.2.1.2 Support nursery work
 - 4.2.1.3 Support agronomic crop work
 - 4.2.1.4 Support irrigation work

Successful candidates shall be awarded Certificates of Competency (COCs)
- 4.3. Accumulation and submission of all COCs acquired for the relevant units of competency comprising a qualification, an individual shall be issued the corresponding National Certificate.
- 4.4. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.5. The following are qualified to apply for assessment and certification:
 - 4.5.1 Graduates of formal, non-formal and informal including enterprise-based training programs.
 - 4.5.2. Experienced workers (wage employed or self-employed)
- 4.6. The guidelines on assessment and certification are discussed in detail in the Procedures manual on Assessment and Certification and Guidelines on the implementation of the Philippine TVET Qualification and Certification System (PTQCS).

COMPETENCY MAP FOR AGRI-FISHERY SECTOR
AGRICULTURAL CROPS PRODUCTION SUB-SECTOR

CORE UNITS OF COMPETENCY				
Supervise agronomic crop maintenance	Produce fruit bearing crops	Monitor and operate water treatment processes	Implement vertebrate pest control program	Coordinate horticultural crop harvesting
Maintain the workplace	Perform post harvest operations of major tropical fruits	Implement a plant establishment program	Establish agronomic crops	Transport, handle and store chemicals
Support agronomic crop work	Perform post harvest operation of major lowland and semi-temperate vegetable crops	Control weeds	Collect samples for a rural production of horticulture monitoring program	Supervise agricultural crop establishment
Support horticultural crop work	Undertake preparation of land for agricultural crop production	Undertake agronomic crop harvesting activities	Save, prepare and store agricultural seed	Implement and monitor quality assurance procedures
Support irrigation work	Operate pertigation equipment	Keep records for a farm business	Implement a propagation plan	Support and review business structures and relationships
Support nursery work	Implement a plant nutrition program	Establish horticultural crops	Coordinate machinery and equipment maintenance and repair for agricultural crops	Promote plant health
Conduct pre-horticultural farm operations	Coordinate a horticultural maintenance program	Comply with industry quality assurance requirements	Prepare and apply chemicals	Implement and monitor a property improvement plan
Produce vegetables	Undertake agronomic crop maintenance activities	Transport farm produce or bulk materials	Implement a post-harvest program	Supervise maintenance of machinery and equipment
Plan & implement a chemical use program	Develop a plant nutrition program	Supervise horticultural crop harvesting	Plan a propagation program	Develop a horticultural crop maintenance program
Apply basic first aid	Operate within a budget framework	Control weeds, pests and /or diseases in crops	Supervise agronomic crop harvesting	Analyze and interpret production data

Continuation Competency Map for Agri Fishery Sector (Agricultural Crops Sub-Sector)

COMMON UNITS OF COMPETENCY

Apply safety measures	Use farm tools and equipment	Perform estimation and calculation	Apply basic first aid
-----------------------	------------------------------	------------------------------------	-----------------------

TOOL UNITS OF COMPETENCY

Receive and Respond to Workplace Communication	Participate in Workplace Communication	Lead Workplace Communication	Utilize specialist communication	Develop Team and Individual
Work With Others	Work in a Team Environment	Lead Small Team	Solve Workplace Problems Related to Work Activities	Apply Problem Solving Techniques in the Workplace
Practice basic housekeeping procedures	Demonstrate work values			Plan and Organize Work

Agricultural Crops Production NC I

DEFINITION OF TERMS

For the purpose of this standard, the word

Aflatoxin – the toxin produced by some strains of the fungi *ASPERGILUS FLAVUS* and *ASPERGILUS PARASTICUS*; the most potent carcinogen yet discovered.

Ambient condition– ordinary room temperature and relative humidity.

Ambient air – the surrounding air (atmospheric).

Ambient storage – any treatment or practice extending post harvest life of harvested commodity beyond that of similar commodity held under ambient conditions without treatment.

Airflow rate – the amount of air passing through an obstruction per unit of time.

ACIAR – Australian Center for International Agricultural Research

AFHB – ASEAN Food Handling Bureau

BPRE – Bureau of Post harvest Research & Extension

Curing – process of toughening and self-healing of bruises and skinned areas in root and tuber crops or the rapid closing of the neck of bulb crops under favourable conditions

Driller – a machine for sowing in furrows

Drip Irrigation – application of water through small tubes and orifices or emitters which discharge small quantity of water to the base of the plant

Dry-bulb temperature – the temperature of air indicated by a standard temperature

Equilibrium moisture content – the moisture content at which moisture in a product is in equilibrium with the surrounding air. The product does not gain or loss moisture.

Fogging – to cover or envelope with fog

Foliar Fertilizer – fertilizer formulation containing nitrogen, phosphorous and potassium plus selected micronutrient element such as (Ca, Mg, Mn, Fe, Zn, Cl, B, Cu, S) applied by spraying on the leaves

Fumigant – a chemical compound which acts in the gaseous state to destroy insects and their larvae.

Fumigation – the process of treating stored products with insecticides/pesticides and the like in fumes or vapor form.

Furrow Irrigation – a method of supplying water through a canal system wherein water flows down or across the slope of the field

Furrowing – final step in land preparation by making furrows or beds for planting

GATT – General Agreement on Tariff and Trade

Grading – the process of classifying into groups according to a set of recognized criteria of quality and size, each group bearing an accepted name and size grouping.

Growing Medium – mixture of different materials such as soil, sand, compost, coir dust, rice hull, perlite, peat, etc. for growing seedlings

HACCP – Hazard Analysis Critical Control Points

Hardening – the process of gradually withholding water and exposing to direct sunlight to prevent seedlings from transplanting stress/shock

Harrowing – breaking of large soil clods that are caused by plowing

Hilling-Up – the process of covering the applied fertilizer material by raising the soil towards the base of the plant to further stabilize its stand for better plant growth.

Hygrometer – an instrument that measures humidity.

Insect pest – a destructive or harmful insect.

Irrigation - any method of supplying water to sustain plant growth

Off-Baring- process of cultivating the soil away from the base of the plants

Pricking-Off- methods of transferring of seedling to avoid overcrowding

Larvae – the first stage of the life cycle of insects after leaving the egg.

Manometer – an instrument that measures air pressure.

Maturity – the quality or state of ripeness, or of being fully developed grain.

Maturity index – signs or indications that a commodity is mature and is ready to be harvested.

Moisture content – the conventional index used to determine whether the seed is dry enough for safe storage or for milling usually expressed in percent (% M.C.).

Molds – superficial often woolly growth produced on various forms of organic matter, especially when damp or decaying.

NFA – National Food Authority

Packaging – technology or process to ensure adequate protection and safe delivery of a product from the producer to the ultimate consumer.

Packing – act of putting commodities in a container.

Packinghouse – place where the preparatory steps for storage or marketing are done.

Pallet – low portable platform made of wood or metal or in combination to facilitate handling, storage or transport of materials as a unit load using forklift.

Perishables – food crops for which value and/or quality is maintained over a short period of time after harvest. These include fruits, vegetables, flowers, young coconut, nursery stocks and some staple root crops such as sweet potato, cassava and yam.

Postharvest disease – disease observed after harvest regardless of when or where initial infestation took place.

Post harvest handling – specific term used for the movement of commodities and operations through which a commodity undergoes from harvest to possession of the fixed consumer, includes the technological aspects of marketing and distribution.

Post harvest infection – infection that takes place after harvest.

Post harvest life – period of time during which a commodity is still acceptable for its intended purpose.

Pre cooling – strictly, it means the rapid cooling (48 hours or less) of a commodity to a desired transit or storage temperature soon after harvest before it is stored or moved in transit.

Pupa – an intermediate stage of an insect that preys on one or more plants and animals that man wishes to preserve for his own use.

Refrigeration – process of removing heat from a compartment or substance so that temperature is lowered and then maintained at a desirable level, usually refers to refrigeration by mechanical means.

Relative humidity – the actual vapor pressure of the air relative to saturation.

Respiration – biological process by which organic materials are broken down to simpler forms accompanied by the release of energy and heat.

Ripening – the state of development of a fruit when it becomes soft and edible applies strictly to climacteric type fruit.

Rodents – refer to rats and mice which destroy grains and other stored products.

Senescence – final phase in the life of an organ in which a series of normally irreversible events are initiated leading to cellular breakdown or death of the organ.

Side-Dress Fertilizer – additional amount of any fertilizer materials applied at the onset of flowering to complete the nutritional requirement of the crop

Sprinkler Irrigation – a mechanical method of supplying water over the standing crop by means of a nozzle which is rotated by water pressure

Synthetic Mulch – mulching materials made either of polyethylene or non-woven fabric

Sorting – the process of classifying into groups designated by the person classifying crops or commodities the produce either according to a set criteria.

Standard – the set of criteria and specifications of quality determining the grades, described as product characteristics such as maturity, color, cleanliness, shape, free from decay and blemishes and uniformity of size.

Storage – process of keeping horticultural crops in a structure designed to protect the stored products from inclement weather and pests for a short or long period of time to await processing or movement to other location.

Storage life – the longest time produce can be kept in a sound marketable condition.

Tachometer – an instrument that measures revolutions per minute

Tillage – the mechanical manipulation of the soil

Transplants – vegetable seedlings produced for transplanting

Trellis – a support structure for viny crops and can either be T, I, Y, A shaped

Velometer – an instrument that measures velocity of air flow

Waxing – application of a thin film of surface coating to fruits and vegetables.

Wet-bulb temperature – temperature of moist air indicated by a thermometer whose bulb is covered with a moist wick which the air flow passing over has a velocity of 15 ft per second.

ACKNOWLEDGEMENTS

The Technical Education and Skills Development Authority (TESDA) wishes to extend gratitude and appreciation to the many representatives of business, industry, academe and government agencies who donated their time and expertise to the development and validation of these Training Regulations.

THE TECHNICAL ADVISORY PANEL (TAP)

Dr. RODOLFO P. ESTIGOY

Chief
Bureau of Post Harvest Research and Extension
Central Luzon State University, Science City of Muñoz, Nueva Ecija

Mr. ALEJANDRO T. ESCANO

President
Philippine Chamber of Agriculture and Food (PCAFI)
MFI Bldg. Otigas Avenue Extension, Pasig City

Mr. EDWIN ANDOT

President
Chamber of Agriculture, Fisheries and Food in Northern Mindanao
2nd floor, United Way Bldg.
Capitol Cmpd., Cagayan de Oro City

Dr. ALMA M. DELA CRUZ

Professor
Central Luzon State University
Muñoz, Nueva Ecija

THE TECHNICAL EXPERT PANEL (TEP)

Mr. ROLANDO SIANGHIO

President
Lacto Asia Pacific Corporation

Ms. PILIPINAS BALANTAC

Instructor
Rizal Experimental Station and Pilot School Cottage Industries (RESPSCI)
Pasig City

Ms. MIRIAM A. ACDA

Chief
Bureau of Post Harvest Research and Extension
CLSU Compound
Muñoz, Nueva Ecija

Mr. JAIME R. RACHO SR.

Assistant Professor
Quezon National Agricultural School (QNAS)
Malicboy, Pagbilao, Quezon

Mr. EDUARDO T. CAYABYAB

Chief
Bureau of Post Harvest Research and Extension
CLSU Compound
Muñoz, Nueva Ecija

Mr. LITO BULAONG

Chief
Bureau of Post Harvest Research and Extension
CLSU Compound
Muñoz, Nueva Ecija

Mr. LORENZO A. BELINO

Benguet Farmers Multipurpose Cooperative

The Participants in the national validation of this Training Regulation

Region 1
Region 2
Region 3
Region 5

Region 8
Region 11
Region 12
Cordillera Autonomy Region

The Management and Staff of the TESDA Secretariat

SSCO
NITVET