

COMPETENCY STANDARDS



BEEKEEPING LEVEL II

**AGRICULTURE, FORESTRY AND FISHERY
SECTOR**

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY

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COMPETENCY STANDARDS

BEEKEEPING LEVEL II

Section 1 BEEKEEPING LEVEL II

The **BEEKEEPING LEVEL II** Qualification consist of competencies required to assemble and maintain hive, produce colony, operate bee smoker, provide pollination services and harvest honey comb.

The units of competency comprising this qualification include the following:

Code	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in team environment
400311212	Solve/address general workplace problems
400311213	Develop career and life decisions
400311214	Contribute to workplace innovation
400311215	Present relevant information
400311216	Practice occupational safety and health policies and procedures
400311217	Exercise efficient and effective sustainable practices in the workplace
400311218	Practice entrepreneurial skills in the workplace
Code	COMMON COMPETENCIES
AGR321201	Apply Safety Measures in Farm Operations
AGR321202	Use Farm Tools and Equipment
AGR321203	Perform Estimation and Basic Calculation
Code	CORE COMPETENCIES
AFFXXXXXX	Assemble and maintain hive
AFFXXXXXX	Produce colony
AFFXXXXXX	Operate bee smoker
AFFXXXXXX	Harvest honey comb
AFFXXXXXX	Provide pollination services

A person who has achieved this Competency Standards is competent to be:

- Beekeeper
- Apiary worker

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **BEEKEEPING LEVEL II**.

BASIC COMPETENCIES

UNIT OF COMPETENCY : PARTICIPATE IN WORKPLACE COMMUNICATION

UNIT CODE : 400311210

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from appropriate sources 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information 1.3 Appropriate medium is used to transfer information and ideas 1.4 Appropriate non-verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace	1.1 Effective verbal and nonverbal communication 1.2 Different modes of communication 1.3 Medium of communication in the workplace 1.4 Organizational policies 1.5 Communication procedures and systems 1.6 Lines of Communication 1.7 Technology relevant to the enterprise and the individual's work responsibilities 1.8 Workplace etiquette	1.1 Following simple spoken language 1.2 Performing routine workplace duties following simple written notices 1.3 Participating in workplace meetings and discussions 1.4 Preparing work-related documents 1.5 Estimating, calculating and recording routine workplace measures 1.6 Relating/ Interacting with people of

	<p>1.7 procedures for the 1.8 location and storage 1.9 of information are used 1.10 Personal interaction is carried out clearly and concisely</p>		<p>various levels in the workplace 1.7 Gathering and providing basic information in response to workplace requirements 1.8 Basic business writing skills 1.9 Interpersonal skills in the workplace 1.10 Active- listening skills</p>
<p>2. Perform duties following workplace instructions</p>	<p>2.1 Written notices and instructions are read and interpreted in accordance with organizational guidelines 2.2 Routine written instruction are followed based on established procedures 2.3 Feedback is given to workplace supervisor based instructions/ information received 2.4 Workplace interactions are conducted in a courteous manner 2.5 Where necessary, clarifications about routine workplace procedures and matters concerning conditions of employment are</p>	<p>2.1 Effective verbal and non-verbal communication 2.2 Different modes of communication 2.3 Medium of communication in the workplace 2.4 Organizational/ Workplace policies 2.5 Communication procedures and systems 2.6 Lines of communication 2.7 Technology relevant to the enterprise and the individual's work responsibilities 2.8 Effective questioning techniques (clarifying and probing) 2.9 Workplace etiquette</p>	<p>2.1 Following simple spoken instructions 2.2 Performing routine workplace duties following simple written notices 2.3 Participating in workplace meetings and discussions 2.4 Completing work- related documents 2.5 Estimating, calculating and recording routine workplace measures 2.6 Relating/ Responding to people of various levels in the workplace 2.7 Gathering and providing information in</p>

	<p>sought and asked from appropriate</p> <p>2.6 sources</p> <p>2.7 Meetings outcomes are interpreted and implemented</p>		<p>response to workplace requirements</p> <p>2.8 Basic questioning/querying</p> <p>2.9 Skills in reading for information</p> <p>2.10 Skills in locating</p>
<p>3. Complete relevant work related documents</p>	<p>3.1 Range of forms relating to conditions of employment are completed accurately and legibly</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents</p> <p>3.3 Errors in recording information on forms/ documents are identified and acted upon</p> <p>3.4 Reporting requirements to supervisor are completed according to organizational guidelines</p>	<p>3.1 Effective verbal and non-verbal communication</p> <p>3.2 Different modes of communication</p> <p>3.3 Workplace forms and documents</p> <p>3.4 Organizational/ Workplace policies</p> <p>3.5 Communication procedures and systems</p> <p>3.6 Technology relevant to the enterprise and the individual's work responsibilities</p>	<p>3.1 Completing work- related documents</p> <p>3.2 Applying operations of addition, subtraction, division and multiplication</p> <p>3.3 Gathering and providing information in response to workplace requirements</p> <p>3.4 Effective record keeping skills</p>

RANGE OF VARIABLES

VARIABLES	RANGE
1. Appropriate sources	May include: 1.1. Team members 1.2. Supervisor/Department Head 1.3. Suppliers 1.4. Trade personnel 1.5. Local government 1.6. Industry bodies
2. Medium	May include: 2.1. Memorandum 2.2. Circular 2.3. Notice 2.4. Information dissemination 2.5. Follow-up or verbal instructions 2.6. Face-to-face communication 2.7. Electronic media (disk files, cyberspace)
3. Storage	May include: 3.1. Manual filing system 3.2. Computer-based filing system
4. Workplace interactions	May include: 4.1. Face-to-face 4.2. Telephone 4.3. Electronic and two-way radio 4.4. Written including electronic means, memos, instruction and forms 4.5. Non-verbal including gestures, signals, signs and diagrams
5. Forms	May include: 5.1. HR/Personnel forms, telephone message forms, safety reports

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Prepared written communication following standard format of the organization 1.2. Accessed information using workplace communication equipment/systems 1.3. Made use of relevant terms as an aid to transfer information effectively 1.4. Conveyed information effectively adopting formal or informal communication
2. Resource Implications	The following resources should be provided: 2.1. Fax machine 2.2. Telephone 2.3. Notebook 2.4. Writing materials 2.5. Computer with Internet connection
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration with oral questioning 3.2. Interview 3.3. Written test 3.4. Third-party report
4. Context for Assessment	4.1. Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN A TEAM ENVIRONMENT

UNIT CODE : 400311211

UNIT DESCRIPTOR : This unit covers the skills, knowledge and attitudes to identify one's roles and responsibilities as a member of a team.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Describe team role and scope	1.1 The role and objective of the team is identified from available sources of information 1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources	1.1 Group structure 1.2 Group development 1.3 Sources of information	1.1 Communicating with others, appropriately consistent with the culture of the workplace 1.2 Developing ways in improving work structure and performing respective roles in the group or organization
2. Identify one's role and responsibility within a team	2.1 Individual roles and responsibilities within the team environment are identified 2.2 Roles and objectives of the team is identified from available sources of information 2.3 Team parameters, reporting relationships and responsibilities are identified based on team discussions	2.1 Team roles and objectives 2.2 Team structure and parameters 2.3 Team development 2.4 Sources of information	2.1 Communicating with others, appropriately consistent with the culture of the workplace 2.2 Developing ways in improving work structure and performing respective roles in the group or organization

	and appropriate external sources		
3. Work as a team member	<p>3.1 Effective and appropriate forms of communications are used and interactions undertaken with team members based on company practices.</p> <p>3.2 Effective and appropriate contributions made to complement team activities and objectives, based on workplace context</p> <p>3.3 Protocols in reporting are observed based on standard company practices.</p> <p>3.4 Contribute to the development of team work plans based on an understanding of team's role and objectives</p>	<p>3.1 Communication Process</p> <p>3.2 Workplace communication protocol</p> <p>3.3 Team planning and decision making</p> <p>3.4 Team thinking</p> <p>3.5 Team roles</p> <p>3.6 Process of team development</p> <p>3.7 Workplace context</p>	<p>3.1 Communicating appropriately, consistent with the culture of the workplace</p> <p>3.2 Interacting effectively with others</p> <p>3.3 Deciding as an individual and as a group using group think strategies and techniques</p> <p>3.4 Contributing to Resolution of issues and concerns</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	May include but not limited to: 1.1. Work activities in a team environment with enterprise or specific sector 1.2. Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	May include but not limited to: 2.1. Standard operating and/or other workplace procedures 2.2. Job procedures 2.3. Machine/equipment manufacturer's specifications and instructions 2.4. Organizational or external personnel 2.5. Client/supplier instructions 2.6. Quality standards 2.7. OHS and environmental standards
3. Workplace context	May include but not limited to: 3.1. Work procedures and practices 3.2. Conditions of work environments 3.3. Legislation and industrial agreements 3.4. Standard work practice including the storage, safe handling and disposal of chemicals 3.5. Safety, environmental, housekeeping and quality guidelines

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 Worked in a team to complete workplace activity 1.2 Worked effectively with others 1.3 Conveyed information in written or oral form 1.4 Selected and used appropriate workplace language 1.5 Followed designated work plan for the job
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Role play involving the participation of individual member to the attainment of organizational goal 3.2 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork 3.3 Socio-drama and socio-metric methods 3.4 Sensitivity techniques 3.5 Written Test
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while task are being undertaken whether individually or in group

UNIT OF COMPETENCY : SOLVE/ADDRESS GENERAL WORKPLACE

UNIT CODE : 400311212

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to apply problem-solving techniques to determine the origin of problems and plan for their resolution. It also includes addressing procedural problems through documentation, and referral.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify routine problems	1.1 Routine problems or procedural problem areas are identified 1.2 Problems to be investigated are defined and determined 1.3 Current conditions of the problem are identified and documented	1.1 Current industry hardware and software products and services 1.2 Industry maintenance, service and helpdesk practices, processes and procedures 1.3 Industry standard diagnostic tools 1.4 Malfunctions and resolutions	1.1 Identifying current industry hardware and software products and services 1.2 Identifying current industry maintenance, services and helpdesk practices, processes and procedures. 1.3 Identifying current industry standard diagnostic tools 1.4 Describing common malfunctions and resolutions. 1.5 Determining the root cause of a routine malfunction

<p>2. Look for solutions to routine problems</p>	<p>2.1 Potential solutions to problem are identified</p> <p>2.2 Recommendations about possible solutions are developed, documented, ranked and presented to appropriate person for decision</p>	<p>2.1 Current industry hardware and software products and services</p> <p>2.2 Industry service and helpdesk practices, processes and procedures</p> <p>2.3 Operating systems</p> <p>2.4 Industry standard diagnostic tools</p> <p>2.5 Malfunctions and resolutions.</p> <p>2.6 Root cause analysis</p>	<p>2.1 Identifying current industry hardware and software products and services</p> <p>2.2 Identifying services and helpdesk practices, processes and procedures.</p> <p>2.3 Identifying operating system</p> <p>2.4 Identifying current industry standard diagnostic tools</p> <p>2.5 Describing common malfunctions and resolutions.</p> <p>2.6 Determining the root cause of a routine malfunction</p>
<p>3. Recommend solutions to problems</p>	<p>3.1 Implementation of solutions are planned</p> <p>3.2 Evaluation of implemented solutions are planned</p> <p>3.3 Recommended solutions are documented and submit to appropriate person for confirmation</p>	<p>3.1 Standard procedures</p> <p>3.2 Documentation produce</p>	<p>3.1 Producing documentation that recommends solutions to problems</p> <p>3.2 Following established procedures</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/Procedural Problem	May include but not limited to: 1.1 Routine/non – routine processes and quality problems 1.2 Equipment selection, availability and failure 1.3 Teamwork and work allocation problem 1.4 Safety and emergency situations and incidents 1.5 Work-related problems outside of own work area
2. Appropriate person	May include but not limited to: 2.1 Supervisor or manager 2.2 Peers/work colleagues 2.3 Other members of the organization
3. Document	May include but not limited to: 3.1 Electronic mail 3.2 Briefing notes 3.3 Written report 3.4 Evaluation report
4. Plan	May include but not limited to: 4.1 Priority requirements 4.2 Co-ordination and feedback requirements 4.3 Safety requirements 4.4 Risk assessment 4.5 Environmental requirements

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Determined the root cause of a routine problem 1.2 Identified solutions to procedural problems. 1.3 Produced documentation that recommends solutions to problems. 1.4 Followed established procedures. 1.5 Referred unresolved problems to support persons.
2. Resource Implications	2.1. Assessment will require access to a workplace over an extended period, or a suitable method of gathering evidence of operating ability over a range of situations.
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Case Formulation 3.2 Life Narrative Inquiry 3.3 Standardized test <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY : DEVELOP CAREER AND LIFE DECISIONS

UNIT CODE : 400311213

UNIT DESCRIPTOR : This unit covers the knowledge, skills, and attitudes in managing one’s emotions, developing reflective practice, and boosting self-confidence and developing self-regulation.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Manage one’s emotion	1.1 Self-management strategies are identified 1.2 Skills to work independently and to show initiative, to be conscientious, and persevering in the face of setbacks and frustrations are developed 1.3 Techniques for effectively handling negative emotions and unpleasant situation in the workplace are examined	1.1 Self-management strategies that assist in regulating behavior and achieving personal and learning goals (e.g. Nine self-management strategies according to Robert Kelley) 1.2 Enablers and barriers in achieving personal and career goals 1.3 Techniques in handling negative emotions and unpleasant situation in the workplace such as frustration, anger, worry, anxiety, etc.	1.1 Managing properly one’s emotions and recognizing situations that cannot be changed and accept them and remain professional 1.2 Developing self-discipline, working independently and showing initiative to achieve personal and career goals 1.3 Showing confidence, and resilience in the face of setbacks and frustrations and other negative emotions and unpleasant situations in the workplace

<p>2. Develop reflective practice</p>	<p>2.1 Personal strengths and achievements, based on self-assessment strategies and teacher feedback are contemplated</p> <p>2.2 Progress when seeking and responding to feedback from teachers to assist them in consolidating strengths, addressing weaknesses and fulfilling their potential are monitored</p> <p>2.3 Outcomes of personal and academic challenges by reflecting on previous problem solving and decision making strategies and feedback from peers and teachers are predicted</p>	<p>2.1 Basic SWOT analysis</p> <p>2.2 Strategies to improve one's attitude in the workplace</p> <p>2.3 Gibbs' Reflective Cycle/Model (Description, Feelings, Evaluation, Analysis, Conclusion, and Action plan)</p>	<p>2.1 Using the basic SWOT analysis as self-assessment strategy</p> <p>2.2 Developing reflective practice through realization of limitations, likes/dislikes; through showing of self-confidence</p> <p>2.3 Demonstrating self-acceptance and being able to accept challenges</p>
<p>3. Boost self-confidence and develop self-regulation</p>	<p>3.1 Efforts for continuous self-improvement are demonstrated</p> <p>3.2 Counter-productive tendencies at work are eliminated</p> <p>3.3 Positive outlook in life are maintained.</p>	<p>3.1 Four components of self-regulation based on Self-Regulation Theory (SRT)</p> <p>3.2 Personality development concepts</p> <p>3.3 Self-help concepts (e. g., 7 Habits by Stephen Covey, transactional</p>	<p>3.1 Performing effective communication skills – reading, writing, conversing skills</p> <p>3.2 Showing affective skills – flexibility, adaptability, etc.</p>

		analysis, psycho-spiritual concepts)	3.3 Self-assessment for determining one's strengths and weaknesses
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-management strategies	<p>May include but not limited to:</p> <p>1.1 Seeking assistance in the form of job coaching or mentoring</p> <p>1.2 Continuing dialogue to tackle workplace grievances</p> <p>1.3 Collective negotiation/bargaining for better working conditions</p> <p>1.4 Share your goals to improve with a trusted co-worker or supervisor</p> <p>1.5 Make a negativity log of every instance when you catch yourself complaining to others</p> <p>1.6 Make lists and schedules for necessary activities</p>
2. Unpleasant situation	<p>May include but not limited to:</p> <p>2.1 Job burn-out</p> <p>2.2 Drug dependence</p> <p>2.3 Sulking</p>

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Express emotions appropriately</p> <p>1.2 Work independently and show initiative</p> <p>1.3 Consistently demonstrate self-confidence and self-discipline</p>
2. Resource Implications	<p>The following resources should be provided:</p> <p>2.1. Access to workplace and resource s</p> <p>2.2. Case studies</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1. Demonstration or simulation with oral questioning</p> <p>3.2. Case problems involving work improvement and sustainability issues</p> <p>3.3. Third-party report</p>
4. Context for Assessment	<p>4.1. Competency assessment may occur in workplace or any appropriately simulated environment</p>

UNIT OF COMPETENCY : CONTRIBUTE TO WORKPLACE INNOVATION

UNIT CODE : 400311214

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to make a pro-active and positive contribution to workplace innovation.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify opportunities to do things better.	1.1 Opportunities for improvement are identified proactively in own area of work. 1.2 Information are gathered and reviewed which may be relevant to ideas and which might assist in gaining support for idea.	1.1 Roles of individuals in suggesting and making improvements. 1.2 Positive impacts and challenges in innovation. 1.3 Types of changes and responsibility. 1.4 Seven habits of highly effective people.	1.1 Identifying opportunities to improve and to do things better. Involvement. 1.2 Identifying the positive impacts and the challenges of change and innovation. 1.3 Identifying examples of the types of changes that are within and outside own scope of responsibility
2. Discuss and develop ideas with others	2.1 People who could provide input to ideas for improvements are identified. 2.2 Ways of approaching people to begin sharing ideas are selected. 2.3 Meeting is set with relevant people. 2.4 Ideas for follow up are review and	2.1 Roles of individuals in suggesting and making improvements. 2.2 Positive impacts and challenges in innovation. 2.3 Types of changes and responsibility. 2.4 Seven habits of highly effective people.	2.1 Identifying opportunities to improve and to do things better. Involvement. 2.2 Identifying the positive impacts and the challenges of change and innovation. 2.3 Providing examples of the types of

	<p>selected based on feedback.</p> <p>2.5 Critical inquiry method is used to discuss and develop ideas with others.</p>		<p>changes that are within and outside own scope of responsibility</p> <p>2.4 Communicating ideas for change through small group discussions and meetings.</p>
<p>3. Integrate ideas for change in the workplace.</p>	<p>3.1 Critical inquiry method is used to integrate different ideas for change of key people.</p> <p>3.2 Summarizing, analyzing and generalizing skills are used to extract salient points in the pool of ideas.</p> <p>3.3 Reporting skills are likewise used to communicate results.</p> <p>3.4 Current Issues and concerns on the systems, processes and procedures, as well as the need for simple innovative practices are identified.</p>	<p>3.1 Roles of individuals in suggesting and making improvements.</p> <p>3.2 Positive impacts and challenges in innovation.</p> <p>3.3 Types of changes and responsibility.</p> <p>3.4 Seven habits of highly effective people.</p> <p>3.5 Basic research skills.</p>	<p>3.1 Identifying opportunities to improve and to do things better. Involvement.</p> <p>3.2 Identifying the positive impacts and the challenges of change and innovation.</p> <p>3.3 Providing examples of the types of changes that are within and outside own scope of responsibility.</p> <p>3.4 Communicating ideas for change through small group discussions and meetings.</p> <p>3.5 Demonstrating skills in analysis and interpretation of data.</p>

RANGE OF VARIABLES

VARIABLES	RANGE
1. Opportunities for improvement	May include: 1.1 Systems. 1.2 Processes. 1.3 Procedures. 1.4 Protocols. 1.5 Codes. 1.6 Practices.
2. Information	May include: 2.1 Workplace communication problems. 2.2 Performance evaluation results. 2.3 Team dynamics issues and concerns. 2.4 Challenges on return of investment 2.5 New tools, processes and procedures. 2.6 New people in the organization.
3. People who could provide input	May include: 3.1 Leaders. 3.2 Managers. 3.3 Specialists. 3.4 Associates. 3.5 Researchers. 3.6 Supervisors. 3.7 Staff. 3.8 Consultants (external) 3.9 People outside the organization in the same field or similar expertise/industry. 3.10 Clients

4. Critical inquiry method	<p>May include:</p> <ul style="list-style-type: none"> 4.1 Preparation. 4.2 Discussion. 4.3 Clarification of goals. 4.4 Negotiate towards a Win-Win outcome. 4.5 Agreement. 4.6 Implementation of a course of action. 4.7 Effective verbal communication. See our pages: Verbal Communication and Effective Speaking. 4.8 Listening. 4.9 Reducing misunderstandings is a key part of effective negotiation. 4.10 Rapport Building. 4.11 Problem Solving. 4.12 Decision Making. 4.13 Assertiveness. 4.14 Dealing with Difficult Situations.
5. Reporting skills	<p>May include:</p> <ul style="list-style-type: none"> 5.1 Data management. 5.2 Coding. 5.3 Data analysis and interpretation. 5.4 Coherent writing. 5.5 Speaking.

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Identified opportunities to do things better. 1.2 Discussed and developed ideas with others on how to contribute to workplace innovation. 1.3 Integrated ideas for change in the workplace. 1.4 Analyzed and reported rooms for innovation and learning in the workplace.
2. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Pens, papers and writing implements. 2.2 Cartolina. 2.3 Manila papers.
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Psychological and behavioral Interviews. 3.2 Performance Evaluation. 3.3 Life Narrative Inquiry. 3.4 Review of portfolios of evidence and third-party workplace reports of on-the-job performance. 3.5 Sensitivity analysis. 3.6 Organizational analysis.

	3.7 Standardized assessment of character strengths and virtues applied.
4. Context for Assessment	4.1 Competency may be assessed individually in the actual workplace or simulation environment in TESDA accredited institutions.

UNIT OF COMPETENCY : PRESENT RELEVANT INFORMATION

UNIT CODE : 400311215

UNIT DESCRIPTOR : This unit of covers the knowledge, skills and attitudes required to present data/information appropriately.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather data/information	1.1 Evidence, facts and information are collected 1.2 Evaluation, terms of reference and conditions are reviewed to determine whether data/information falls within project scope	1.1 Organisational protocols 1.2 Confidentiality 1.3 Accuracy 1.4 Business mathematics and statistics 1.5 Data analysis techniques/procedures 1.6 Reporting requirements to a range of audiences 1.7 Legislation, policy and procedures relating to the conduct of evaluations 1.8 Organisational values, ethics and codes of conduct	1.1 Describing organisational protocols relating to client liaison 1.2 Protecting confidentiality 1.3 Describing accuracy 1.4 Computing business mathematics and statistics 1.5 Describing data analysis techniques/procedures 1.6 Reporting requirements to a range of audiences 1.7 Stating legislation, policy and procedures relating to the conduct of evaluations 1.8 Stating organisational values, ethics and codes of conduct

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Assess gathered data/ information	2.1 Validity of data/ information is assessed 2.2 Analysis techniques are applied to assess data/ information. 2.3 Trends and anomalies are identified 2.4 Data analysis techniques and procedures are documented 2.5 Recommendations are made on areas of possible improvement.	2.1 Business mathematics and statistics 2.2 Data analysis techniques/ procedures 2.3 Reporting requirements to a range of audiences 2.4 Legislation, policy and procedures relating to the conduct of evaluations 2.5 Organisational values, ethics and codes of conduct	2.1 Computing business mathematics and statistics 2.2 Describing data analysis techniques/ procedures 2.3 Reporting requirements to a range of audiences 2.4 Stating legislation, policy and procedures relating to the conduct of evaluations 2.5 Stating organisational values, ethics and codes of conduct

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Record and present information	3.1 Studied data/information are recorded. 3.2 Recommendations are analysed for action to ensure they are compatible with the project's scope and terms of reference. 3.3 Interim and final reports are analysed and outcomes are compared to the criteria established at the outset. 3.4 Findings are presented to stakeholders.	3.1 Data analysis techniques/ procedures 3.2 Reporting requirements to a range of audiences 3.3 Legislation, policy and procedures relating to the conduct of evaluations 3.4 Organisational values, ethics and codes of conduct	3.1 Describing data analysis techniques/ procedures 3.2 Reporting requirements to a range of audiences 3.3 Stating legislation, policy and procedures relating to the conduct of evaluations 3.4 Stating organisational values, ethics and codes of conduct practices

RANGE OF VARIABLES

VARIABLES	RANGE
1. Data analysis techniques	May include but not limited to: 1.1. Domain analysis 1.2. Content analysis 1.3. Comparison technique

EVIDENCE GUIDE

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Determine data / information 1.2 Studied and applied gathered data/information 1.3 Recorded and studied data/information</p> <p>These aspects may be best assessed using a range of scenarios what ifs as a stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.</p>
2. Resource Implications	<p>Specific resources for assessment</p> <p>2.1. Evidence of competent performance should be obtained by observing an individual in an information management role within the workplace or operational or simulated environment.</p>
3. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1. Written Test 3.2. Interview 3.3. Portfolio</p> <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
4. Context for Assessment	<p>4.1. In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.</p>

UNIT OF COMPETENCY : PRACTICE OCCUPATIONAL SAFETY AND HEALTH POLICIES AND PROCEDURES

UNIT CODE : 400311216

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to identify OSH compliance requirements, prepare OSH requirements for compliance, perform tasks in accordance with relevant OSH policies and procedures.

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify OSH compliance requirements	1.1 Relevant OSH requirements, regulations, policies and procedures are identified in accordance with workplace policies and procedures 1.2 OSH activity non-conformities are conveyed to appropriate personnel 1.3 OSH preventive and control requirements are identified in accordance with OSH work policies and procedures	.1. OSH preventive and control requirements .2. Hierarchy of Controls .3. Hazard Prevention and Control .4. General OSH principles .5. Work standards and procedures .6. Safe handling procedures of tools, equipment and materials .7. Standard emergency plan and procedures in the workplace	1.1. Communication skills 1.2. Interpersonal skills 1.3. Critical thinking skills 1.4. Observation skills
2. Prepare OSH requirements for compliance	2.1 OSH work activity material, tools and equipment requirements are identified in accordance with workplace policies and procedures	2.1 Resources necessary to execute hierarchy of controls 2.2 General OSH principles 2.3 Work standards and procedures	2.1 Communication skills 2.2 Estimation skills 2.3 Interpersonal skills 2.4 Critical thinking skills

	<p>2.2 Required OSH materials, tools and equipment are acquired in accordance with workplace policies and procedures</p> <p>2.3 Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards</p>	<p>2.4 Safe handling procedures of tools, equipment and materials</p> <p>2.5 Different OSH control measures</p>	<p>2.5 Observation skills</p> <p>2.6 Material, tool and equipment identification skills</p>
<p>3. Perform tasks in accordance with relevant OSH policies and procedures</p>	<p>3.1 Relevant OSH work procedures are identified in accordance with workplace policies and procedures</p> <p>3.2 Work Activities are executed in accordance with OSH work standards</p> <p>3.3 Non-compliance work activities are reported to <i>appropriate personnel</i></p>	<p>3.1 OSH work standards</p> <p>3.2 Industry related work activities</p> <p>3.3 General OSH principles</p> <p>3.4 OSH Violations</p> <p>3.5 Non-compliance work activities</p>	<p>3.1 Communication skills</p> <p>3.2 Interpersonal skills</p> <p>3.3 Troubleshooting skills</p> <p>3.4 Critical thinking skills</p> <p>3.5 Observation skills</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. OSH Requirements, Regulations, Policies and Procedures	May include: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Permit to Operate 1.6 Philippine Occupational Safety and Health Standards 1.7 Department Order No. 13 (Construction Safety and Health) 1.8 ECC regulations
2. Appropriate Personnel	May include: 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself
3. OSH Preventive and Control Requirements	May include: 3.1 Resources needed for removing hazard effectively 3.2 Resources needed for substitution or replacement 3.3 Resources needed to establishing engineering controls 3.4 Resources needed for enforcing administrative controls 3.5 Personal Protective equipment
4. Non OSH-Compliance Work Activities	May include non-compliance or observance of the following safety measures: 4.1 Violations that may lead to serious physical harm or death 4.2 Fall Protection 4.3 Hazard Communication 4.4 Respiratory Protection 4.5 Power Industrial Trucks 4.6 Lockout/Tag-out 4.7 Working at heights (use of ladder, scaffolding) 4.8 Electrical Wiring Methods 4.9 Machine Guarding

	4.10 Electrical General Requirements 4.11 Asbestos work requirements 4.12 Excavations work requirements
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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. Convey OSH work non-conformities to appropriate personnel 1.2. Identify OSH preventive and control requirements in accordance with OSH work policies and procedures 1.3. Identify OSH work activity material, tools and equipment requirements in accordance with workplace policies and procedures 1.4. Arrange/Place required OSH materials, tools and equipment in accordance with OSH work standards 1.5. Execute work activities in accordance with OSH work standards 1.6. Report OSH activity non-compliance work activities to appropriate personnel
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ol style="list-style-type: none"> 2.1 Facilities, materials tools and equipment necessary for the activity
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ol style="list-style-type: none"> 3.1 Observation/Demonstration with oral questioning 3.2 Third party report
<p>4. Context for Assessment</p>	<ol style="list-style-type: none"> 4.1 Competency may be assessed in the work place or in a simulated work place setting

UNIT OF COMPETENCY : EXERCISE EFFICIENT AND EFFECTIVE SUSTAINABLE PRACTICES IN THE WORKPLACE

UNIT CODE : 400311217

UNIT DESCRIPTOR : This unit covers knowledge, skills and attitude to identify the efficiency and effectiveness of resource utilization, determine causes of inefficiency and/or ineffectiveness of resource utilization and convey inefficient and ineffective environmental practices

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify the efficiency and effectiveness of resource utilization	1.1 Required resource utilization in the workplace is measured using appropriate techniques 1.2 Data are recorded in accordance with workplace protocol 1.3 Recorded data are compared to determine the efficiency and effectiveness of resource utilization according to established <i>environmental work procedures</i>	1.1 Importance of Environmental Literacy 1.2 Environmental Work Procedures 1.3 Waste Minimization 1.4 Efficient Energy Consumptions	1.1 Recording Skills 1.2 Writing Skills 1.3 Innovation Skills
2. Determine causes of inefficiency and/or ineffectiveness	2.1 Potential causes of inefficiency and/or ineffectiveness are listed	2.1 Causes of environmental inefficiencies and ineffectiveness	2.1 Deductive Reasoning Skills 2.2 Critical thinking 2.3 Problem Solving 2.4 Observation Skills

<p>of resource utilization</p>	<p>2.2 Causes of inefficiency and/or ineffectiveness are identified through deductive reasoning</p> <p>2.3 Identified causes of inefficiency and/or ineffectiveness are validated through established environmental procedures</p>		
<p>3. Convey inefficient and ineffective environmental practices</p>	<p>3.1 Efficiency and effectiveness of resource utilization are reported to <i>appropriate personnel</i></p> <p>3.2 Concerns related resource utilization are discussed with appropriate personnel</p> <p>3.3 Feedback on information/concerns raised are clarified with appropriate personnel</p>	<p>3.1 Appropriate Personnel to address the environmental hazards</p> <p>3.2 Environmental corrective actions</p>	<p>3.1 Written and Oral Communication Skills</p> <p>3.2 Critical thinking</p> <p>3.3 Problem Solving</p> <p>3.4 Observation Skills</p> <p>3.5 Practice Environmental Awareness</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Environmental Work Procedures	May include: 1.1 Utilization of Energy, Water, Fuel Procedures 1.2 Waster Segregation Procedures 1.3 Waste Disposal and Reuse Procedures 1.4 Waste Collection Procedures 1.5 Usage of Hazardous Materials Procedures 1.6 Chemical Application Procedures 1.7 Labeling Procedures
2. Appropriate Personnel	May include: 2.1 Manager 2.2 Safety Officer 2.3 EHS Offices 2.4 Supervisors 2.5 Team Leaders 2.6 Administrators 2.7 Stakeholders 2.8 Government Official 2.9 Key Personnel 2.10 Specialists 2.11 Himself

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. Measured required resource utilization in the workplace using appropriate techniques 1.2. Recorded data in accordance with workplace protocol 1.3. Identified causes of inefficiency and/or ineffectiveness through deductive reasoning 1.4. Validate the identified causes of inefficiency and/or ineffectiveness thru established environmental procedures 1.5. Report efficiency and effectiveness of resource utilization to appropriate personnel 1.6. Clarify feedback on information/concerns raised with appropriate personnel
<p>2. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 2.1 Workplace 2.2 Tools, materials and equipment relevant to the tasks 2.3 PPE 2.4 Manuals and references
<p>3. Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <ul style="list-style-type: none"> 3.1 Demonstration 3.2 Oral questioning 3.3 Written examination
<p>4. Context for Assessment</p>	<ul style="list-style-type: none"> 4.1 Competency assessment may occur in workplace or any appropriately simulated environment 4.2 Assessment shall be observed while task are being undertaken whether individually or in-group

UNIT OF COMPETENCY : PRACTICE ENTREPRENEURIAL SKILLS IN THE WORKPLACE

UNIT CODE : 400311218

UNIT DESCRIPTOR : This unit covers the outcomes required to apply entrepreneurial workplace best practices and implement cost-effective operations

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
Apply entrepreneurial workplace best practices	1.1 Good practices relating to workplace operations are observed and selected following workplace policy. 1.2 Quality procedures and practices are complied with according to workplace requirements. 1.3 Cost-conscious habits in resource utilization are applied based on industry standards.	1.1 Workplace best practices, policies and criteria 1.2 Resource utilization 1.3 Ways in fostering entrepreneurial attitudes: 1.3.1 Patience 1.3.2 Honesty 1.3.3 Quality-consciousness 1.3.4 Safety-consciousness 1.3.5 Resourcefulness	1.1 Communication skills 1.2 Complying with quality procedures
2. Communicate entrepreneurial workplace best practices	2.1 Observed good practices relating to workplace operations are communicated to appropriate person . 2.2 Observed quality procedures and practices are	2.1 Workplace best practices, policies and criteria 2.2 Resource utilization 2.3 Ways in fostering entrepreneurial attitudes: 2.3.1 Patience 2.3.2 Honesty	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

	<p>communicated to appropriate person</p> <p>2.3 Cost-conscious habits in resource utilization are communicated based on industry standards.</p>	<p>2.3.3 Quality-consciousness</p> <p>2.3.4 Safety-consciousness</p> <p>2.3.5 Resourcefulness</p>	
3. Implement cost-effective operations	<p>3.1 Preservation and optimization of workplace resources is implemented in accordance with enterprise policy</p> <p>3.2 Judicious use of workplace tools, equipment and materials are observed according to manual and work requirements.</p> <p>3.3 Constructive contributions to office operations are made according to enterprise requirements.</p> <p>3.4 Ability to work within one's allotted time and finances is sustained.</p>	<p>3.1 Optimization of workplace resources</p> <p>3.2 5S procedures and concepts</p> <p>3.3 Criteria for cost-effectiveness</p> <p>3.4 Workplace productivity</p> <p>3.5 Impact of entrepreneurial mindset to workplace productivity</p> <p>3.6 Ways in fostering entrepreneurial attitudes:</p> <p>3.7 Quality-consciousness</p> <p>3.8 Safety-consciousness</p>	<p>3.1 Implementing preservation and optimizing workplace resources</p> <p>3.2 Observing judicious use of workplace tools, equipment and materials</p> <p>3.3 Making constructive contributions to office operations</p> <p>3.4 Sustaining ability to work within allotted time and finances</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Good practices	May include: 1.1 Economy in use of resources 1.2 Documentation of quality practices
2. Resources utilization	May include: 2.1 Consumption/ use of consumables 2.2 Use/Maintenance of assigned equipment and furniture 2.3 Optimum use of allotted /available time

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrated ability to identify and sustain cost-effective activities in the workplace 1.2 Demonstrated ability to practice entrepreneurial knowledge, skills and attitudes in the workplace.
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.3.1 Enterprise procedures manuals 2.3.2 Company quality policy
3. Methods of Assessment	Competency in this unit should be assessed through: 3.1 Interview 3.2 Third-party report
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

COMMON COMPETENCY

UNIT OF COMPETENCY : APPLY SAFETY MEASURES IN FARM OPERATIONS

UNIT CODE : AGR 321201

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</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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	<ul style="list-style-type: none"> • Different work tasks in farm operations • Place and time for implementation of safety measures • Different hazards in the workplace • Types of tools, materials and outfits • Preparation of tools, materials and outfits 	<ul style="list-style-type: none"> • Identifying work tasks in farm operations • Determining place and time for implementation of safety measures • Reading labels, manuals and other basic safety information • Identifying effective/functional tools, materials and outfit • Preparing tools, materials and outfits • Discarding defective tools, and materials

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 safe work requirement 2.5 Hazards in the workplace are identified and reported in line with farm guidelines	<ul style="list-style-type: none"> • Uses and functions of tools • Outfits and how to wear it. • Expiration/shelf life of materials • Proper disposal of expired materials • Environmental rules and regulations • Emergency procedures • Hazards identification and reporting • Communication skills • OSHS 	<ul style="list-style-type: none"> • Using tools and materials in the workplace • Wearing of outfits • Observing expiration/shelf life of materials • Disposing of expired materials • Following emergency procedures • Identifying and reporting of hazards in workplace area.
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 manufacturer's recommendation and farm requirements. 3.3 Waste materials are disposed according to manufacturers, government and farm requirements.	<ul style="list-style-type: none"> • Procedures of cleaning used tools and outfits • Label and storage unused materials • Disposal of wastes materials • Manufacturers' recommendation on keeping materials • Environmental rules and regulations 	<ul style="list-style-type: none"> • Cleaning used tools and outfit • Labelling and storing unused materials • Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	Work task may be selected from any of the subsectors: 1.1 Assemble and maintain hive 1.2 Produce colony 1.3 Operate pollination service 1.4 Harvest honey comb
2. Time	2.1 Assembling and maintaining hive 2.2 Producing colony 2.3 Operating pollination service 2.4 Harvesting honey comb 2.5 Operating bee smoker
3. Tools, materials and equipment	Tools 3.1 Multi scraper (hive tool- can be fabricated) 3.2 Bee brush 3.3 Hive brush 3.4 Hive tool 3.5 Airtight fire proof box Materials 3.6 Wire 3.7 Nails 3.8 Box of matches or lighter 3.9 Smoker fuel 3.10 Bucket water 3.11 Soap 3.12 Towel 3.13 Bee container 3.14 Hive box Equipment: 3.15 Bee smoker 3.16 Bee blower 3.17 PPE <ul style="list-style-type: none"> ▪ Bee veil ▪ Bee suit
4. Emergency procedures	4.1 Location of first aid kit 4.2 Evacuation 4.3 Agencies contract 4.4 Farm emergency procedures
5. Hazards	5.1 Chemical 5.2 Electrical 5.3 Falls

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 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 Cleaned and stored tools, materials and outfit in designated facilities
2. Method of Assessment	Competency in this unit must be assessed through: 2.1 Practical demonstration 2.2 Third Party Report
3. Resource Implications	3.1 Farm location 3.2 Tools, equipment and outfits appropriate in applying safety measures
4. Context of Assessment	4.1 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</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Select and use farm tools	1.1 Appropriate farm tools are identified 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 are safely used according to job requirements and manufacturers conditions	<ul style="list-style-type: none"> • Types and uses of farm tools • Characteristics of functional tools • Checking tools for defects/faults • Segregation and reporting defective tools • Uses of tools 	<ul style="list-style-type: none"> • Identifying farm tools for the work • Checking the conditions of tools • Reporting defective tools • Using tools
2. Select and operate farm equipment	2.1 Identify appropriate tools and equipment 2.2 Instructional manual of the 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 equipment are identified and reported in line with farm procedures 2.5 Farm equipment used according to its function	<ul style="list-style-type: none"> • Types and operations of farm equipment • Standards operating procedures of farm equipment • Instructional manual of equipment • Pre-operation check-up • Equipment Specification • Procedures in calibrating and use of equipment • Equipment faults identification and reporting 	<ul style="list-style-type: none"> • Identifying appropriate farm equipment for the work • Reading instructional manual. • Conducting pre-operation check-up • Identifying faults/defects of farm equipment • Reporting on defective farm equipment • Operating farm equipment • Following safety procedures.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.6 Safety procedures are followed.	<ul style="list-style-type: none"> • Operation of equipment • Codes and Regulations on environmental protection • Safety and keeping of equipment every after use • Safety measures 	
3. Perform preventive maintenance	<p>3.1 Tools and equipment are cleaned immediately after use in line with farm procedures</p> <p>3.2 Routine check-up and maintenance are performed</p> <p>3.3 Tools and equipment are stored in designated areas in line with farm procedures</p>	<ul style="list-style-type: none"> • Cleaning procedures of tools and equipment • Maintenance procedures of farm equipment • Storage of tools and equipment • Designated storage areas 	<ul style="list-style-type: none"> • Cleaning tools and equipment • Performing routinely check-up of tools and equipment • Maintaining farm equipment • Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm equipment	1.1 Bee smoker 1.2 Bee blower 1.3 PPEs
2. Farm tools	2.1 Multi scraper (hive tool- can be fabricated) 2.2 Bee brush 2.3 Hive brush 2.4 Hive tool 2.5 Airtight fire proof box
3. Pre-operation check-up	Bellows Smoker lid Inside of the smoker Heat guard on the smoker PPEs

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Correctly identified appropriate farm tools and equipment 1.2 Operated farm equipment according to manual specification 1.3 Performed preventive maintenance
2. Method of Assessment	Competency in this unit must be assessed through: 2.1 Direct observation 2.2 Practical demonstration 2.3 Third Party Report
3. Resource Implications	3.1 Service/operational manual of farm tools and equipment 3.2 Tools and equipment 3.3 Farm implements
4. Context of Assessment	4.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

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 <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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	1.1 Job requirements/labor needs 1.2 Calculation of quantities of materials and resources required 1.3 Calculation of time for job completion 1.4 Preparation of estimate report 1.5 Basic mathematical operations 1.6 Percentage and ratios 1.7 Unit Conversion	1.1 Identifying job requirements/labor 1.2 Estimating quantities of materials and resources required 1.3 Estimating time for job completion 1.4 Performing basic calculation 1.5 Compute percentage 1.6 Convert English to metric systems of measurement 1.7 Preparing estimate report
2. Perform basic workplace calculation	2.1 System and units of measurement to be followed are ascertained 2.2 Calculation needed to complete work tasks are performed using the four basic	2.1 Four basic mathematical operation 2.2 System and units of measurement 2.3 Fraction, percentage and ratio 2.4 Material takeoff	2.1 Compute bill of materials 2.2 Compute project cost

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	<p><i>mathematical operation</i></p> <p>2.3 Calculate whole fraction, percentage and mixed when are used to complete the instructions</p> <p>2.4 Number computed is checked following work requirements</p>	2.5 Materials costing	

RANGE OF VARIABLES

VARIABLE	RANGE
1. Four basic mathematical operation	1.1 Addition 1.2 Subtraction 1.3 Multiplication 1.4 Division
2. System of measurement	2.1 English 2.2 Metric
3. Units of measurement	3.1 Area 3.2 Volume 3.3 Weight 3.4 Length

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. Method of Assessment	Competency in this unit must be assessed through: 2.1 Practical demonstration 2.2 Written examination
3. Resource Implications	3.1 Relevant tools and equipment for basic calculation 3.2 Recommended data
4. Context of Assessment	4.1 Assessment may occur in the workplace or in a simulated workplace or as part of a team under limited supervision

CORE COMPETENCIES

UNIT OF COMPETENCY : ASSEMBLE AND MAINTAIN HIVE

UNIT CODE : AFFXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to prepare to assemble and repair hive components, assemble hive components, repair hive components and clean up to work completion.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
1. Prepare to assemble and repair hive components	1.1 Construction plans, hive components , other materials and equipment required for hive assembly, repair and treatment are confirmed according to industry standards 1.2 Stored hive components are inspected for availability and suitability for use 1.3 Faulty components are segregated and repaired according to workplace procedures 1.4 Faulty components beyond repair are discarded following workplace procedure 1.5 Wiring of frames is conducted following industry procedure 1.6 Health and safety hazards are identified and taken	1.1 Species of bees 1.2 Types of hive 1.3 Assembly of hive 1.4 Hive components 1.5 Construction plans 1.6 Materials and equipment for assembly of hive 1.7 Repair and treatment procedure 1.8 Repair and treatment materials and tools 1.9 Inspection of hive components 1.10 Faulty components 1.11 Wiring of frames 1.12 Foundation sheets 1.13 PNS-Code of Good Beekeeping Practices 1.14 Health and safety hazards in the workplace 1.15 Communication skills 1.16 OSHS 1.17 PPEs 1.18 Waste management	1.1 Confirming construction plans, hive components, other materials and equipment 1.2 Communication skills <ul style="list-style-type: none"> • Interpreting construction plan • Inspecting stored hive components 1.3 Segregating and repairing faulty components 1.4 Using repair tools 1.5 Discarding faulty components beyond repair 1.6 Wiring of frames 1.7 Identifying health and safety hazards in the workplace 1.8 Applying safety practices 1.9 Using PPES

	<p>action according to workplace procedures</p> <p>1.7 Personal protective equipment(PPEs) is checked for serviceability following industry standards</p> <p>1.8 Personal protective equipment(PPEs) is worn following industry standards</p>		1.10 Managing waste
2. Assemble hive components	<p>2.1 Hive components are installed following construction plan</p> <p>2.2 Packaged bees are placed inside the hive following industry procedure</p> <p>2.3 Lid cover is placed following construction plan.</p> <p>2.4 Installation issues relating to completing work to required standards and timelines are reported to immediate superior based on workplace procedure.</p> <p>2.5 Clean and safe work site are maintained while working</p>	<p>2.1 Apiary/Bee yard</p> <p>2.2 Installation of hive components</p> <p>2.3 Installation procedures</p> <p>2.4 Packaged bees</p> <p>2.5 Lid covering</p> <p>2.6 Application of safety practices</p> <p>2.7 Problems and difficulty during installation</p> <p>2.8 Reporting procedure</p> <p>2.9 Clean and safe work site</p> <p>2.10 PPEs</p> <p>2.11 OSHS</p> <p>2.12 Communication skills</p> <p>2.13 Record keeping</p>	<p>2.1 Installing hive components</p> <p>2.2 Following construction plan</p> <p>2.3 Placing packaged bees</p> <p>2.4 Placing lid cover</p> <p>2.5 Reporting problems and difficulties</p> <p>2.6 Maintaining clean and safe work site</p> <p>2.7 Applying safety practices</p> <p>2.8 Using PPEs</p> <p>2.9 Communication skills</p> <p>2.10 Conducting record keeping</p>

<p>3. Repair hive components</p>	<p>3.1 Hives are inspected to identify necessary repairs, scope of job, materials and tools required following industry practice.</p> <p>3.2 Treatment is conducted to pest - infested hive following biosecurity procedure</p> <p>3.3 Defects and damages are addressed following industry procedures</p> <p>3.4 Safety practices is applied following OSHS.</p>	<p>3.1 Inspection of hives</p> <p>3.2 Biosecurity procedures</p> <p>3.3 Record keeping</p> <p>3.4 Defects and damages of hives</p> <p>3.5 Pests and disease infestation</p> <p>3.6 Treatment procedures</p> <p>3.7 Basic carpentry</p> <p>3.8 Communication</p> <p>3.9 Mensuration and calculation</p> <p>3.10 OSHS</p> <p>3.11 Waste management</p>	<p>3.1 Inspecting of hives</p> <p>3.2 Conducting record keeping</p> <p>3.3 Conducting treatment</p> <p>3.4 Addressing defects and damages</p> <p>3.5 Applying safety practices</p> <p>3.6 Basic carpentry skills</p> <p>3.7 Communication skills</p>
<p>4. Clean up to work completion</p>	<p>4.1 Tools and materials are cleaned according to workplace procedures</p> <p>4.2 Waste materials are disposed following biosecurity measures and waste management</p> <p>4.3 Tools and materials are stored following workplace procedure</p> <p>4.4 Work outcomes are reported according to workplace procedures</p> <p>4.5 Safety practices are applied following OSHS</p>	<p>4.1 Biosecurity measures</p> <p>4.2 Cleaning and storing of tools and materials</p> <p>4.3 Disposing of waste materials</p> <p>4.4 Reporting work outcomes</p> <p>4.5 PPEs</p> <p>4.6 OSHS</p> <p>4.7 Waste management</p> <p>4.8 Communication</p> <p>4.9 Record keeping</p>	<p>4.1 Cleaning tools and materials</p> <p>4.2 Disposing waste materials</p> <p>4.3 Storing tools and materials</p> <p>4.4 Following biosecurity procedures</p> <p>4.5 Reporting work outcomes</p> <p>4.6 Communication skills</p> <p>4.7 Applying safety practices</p> <p>4.8 Managing waste</p>

RANGE OF VARIABLES

VARIABLES	RANGE
1. Hive components	May include: 1.1 Bee box 1.2 Frames 1.3 Hive stand 1.4 Top cover 1.5 Bottom board 1.6 Feeder box 1.7 Foundation sheet
2. Materials	May include: 2.1 Wire 2.2 Nails
3. Treatment of hive components	May include: 3.1 Heating 3.2 Cleaning 3.3 Use of repellent 3.4 Chemical sterilization 3.5 Boiling 3.6 Paint for wood protection

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared to assemble and repair hive components 1.2 Assembled hive components 1.3 Repaired hive components 1.4 Cleaned up to work completion
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.4 First aid kit
3. Methods of Assessment	Competency in this unit should be assessed through: 3.1 Demonstration/ direct observation with oral questioning 3.2 Written exam
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

UNIT OF COMPETENCY : PRODUCE COLONY

UNIT CODE : AFFXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct pre-manipulation activities, manipulate colony, manipulate colony, and update and maintain apiary records

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
1. Conduct pre-manipulation activities	1.1 Tools and equipment are prepared following work requirement 1.2 PPEs are worn following OSHS 1.3 Appropriate actions and sequence are planned following workplace procedure 1.4 Biosecurity procedures are observed according to workplace requirement 1.5 Colony is checked following industry standard and biosecurity procedures	1.1 Preparation of tools and equipment 1.2 Wearing of PPEs 1.3 Planning of appropriate actions and sequence 1.4 Biosecurity procedures 1.5 Checking colony 1.6 Safety practices 1.7 Industry standards (Philippine National Standards on Beekeeping)	1.1 Preparing tools and equipment 1.2 Wearing of PPEs 1.3 Planning appropriate actions and sequence 1.4 Observing biosecurity procedures 1.5 Checking colony 1.6 Applying safety practices
2. Manipulate colony	2.1 Hive is opened following industry procedure 2.2 Frames are removed according to planned sequence 2.3 Frames in hive are replaced and positioned according to planned manipulation 2.4 Hive manipulation is monitored	2.1 Bee colony 2.2 Signs and prevention of swarming 2.3 Replacing and positioning of frames 2.4 Feeding management 2.5 Health management 2.6 Splitting colony 2.7 Compressing colony 2.8 Adjustment on the number of frames	2.1 Opening hive 2.2 Removing frames 2.3 Replacing and positioning frames 2.4 Monitoring hive manipulation 2.5 Conducting record keeping 2.6 Applying required actions 2.7 Cleaning work area

	<p>following industry standards</p> <p>2.5 Required actions are applied based on the monitoring result to minimize disturbance of colony</p> <p>2.6 Work area is cleaned following biosecurity procedures</p> <p>2.7 Waste materials are disposed following biosecurity procedures</p>	<p>based on bee population</p> <p>2.9 Temperature regulation of hive</p> <p>2.10 Cleaning of work area</p> <p>2.11 Disposing waste materials</p> <p>2.12 Waste management</p> <p>2.13 Monitoring procedure</p> <p>2.14 Biosecurity measures</p> <p>2.15 Safety practices</p>	<p>2.8 Disposing waste materials</p> <p>2.9 Applying biosecurity measures</p> <p>2.10 Applying safety practices</p> <p>2.11 Communication skills</p>
<p>3. Update and maintain apiary records</p>	<p>3.1 Tagging of hive is practiced following workplace requirement.</p> <p>3.2 Apiary records are updated for hive manipulations according to workplace procedures</p> <p>3.3 Mandatory records are maintained for hive manipulations according to biosecurity reporting requirements</p>	<p>3.1 Record keeping</p> <p>3.2 Communication</p> <p>3.3 Tagging of hive</p> <p>3.4 Apiary records</p> <p>3.5 Maintenance of mandatory records</p>	<p>3.1 Tagging hive</p> <p>3.2 Updating apiary records</p> <p>3.3 Maintaining mandatory records</p> <p>3.4 Communication skills</p> <p>3.5 Conducting record keeping</p>

RANGE OF VARIABLES

RANGE	VARIABLES
1. Tools	Tools may include: 1.1 Multi scraper (hive tool- can be fabricated) 1.2 Bee brush
2. Personal Protective Equipment (PPEs)	Personal Protective Equipment may include: 2.1 Bee veil 2.2 Bee suit
3. Plan	May include: 3.1 Colony production 3.2 Honey production 3.3 Pollination service 3.4 Queen production 3.5 Drone production
4. Checking of colony	May include: 4.1 Checking health condition of colony 4.2 Checking of foods status 4.3 Checking of queen presence and performance 4.4 Checking population rate 4.5 Checking performance of colony
5. Manipulation	May include: 5.1. Feeding management 5.2. Health management 5.3. Splitting colony 5.4. Compressing colony 5.5. Rehiving /reboxing colony 5.6. Transporting and migration of colony
6. Colony	Includes: 6.1. One queen bee 6.2. Thousands of Worker bee 6.3. Hundreds of drone

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Conducted pre-manipulation activities 1.2 Manipulated colony 1.3 Updated and maintained apiary records
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.4 First aid kit
3. Methods of Assessment	Competency in this unit should be assessed through: 3.1 Demonstration/ direct observation with oral questioning 3.2 Written exam
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

COMPETENCY : OPERATE BEE SMOKER

UNIT CODE : AFFXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to prepare bee smoker, use bee smoker, conduct post smoking activities. Included also are competencies on application of safety measures and practice of fire safety.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
1. Prepare bee smoker	1.1 Job requirements are identified following industry procedure 1.2 Climatic and other conditions that permit the use of smoker are assessed according to industry practice 1.3 Planned activities are adjusted according to workplace procedure 1.4 Serviceability of bee smoker is checked and faults are rectified following operating manual 1.5 Hazard and risks associated with the use of bee smoker are identified according to OSHS 1.6 PPEs are used following OSHS 1.7 Adequate water supply and availability of tools are ensured for fire control according industry standards 1.8 Defensive behavior of bees is assessed	1.1 Principles and practices of using smoke on bees to pacify behavior 1.2 Types of bee smokers and their use and advantages/disadvantages, including: 1.2.1 Bellows (traditional) 1.2.2 Electric fan operated 1.2.3 Electric ignition 1.3 Types of smoke and the effect on bees and hive products 1.4 Suitable bee safe fuel and ignition procedures 1.5 Operation of bee smokers and the effect of weather and environmental conditions on the safe use of smoker including fire prevention activities	1.1 Identifying job requirements 1.2 Assessing climatic and other conditions that permit the use of smoker 1.3 Adjusting planned activities 1.4 Checking bee smoker 1.5 Checking serviceability of bee smoker and rectifying faults 1.6 Identifying hazards and risks associated with the use of bee smoker 1.7 Using PPEs 1.8 Ensuring adequate water supply and availability of tools for fire control 1.9 Assessing defensive behavior of bees 1.10 Using suitable fuel

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
	<p>according to industry procedure</p> <p>1.9 Suitable fuel is used following industry standards</p>	<p>1.6 Fire restrictions and regulations that impact on use of bee smokers, including:</p> <p>1.6.1 Permits and exemptions</p> <p>1.6.2 Applications for exemptions</p> <p>1.7 Health and safety hazards and risks and their controls when using smokers.</p> <p>1.8 Use of PPEs</p>	
2. Use bee smoker	<p>2.1 Bee smoker bellows is operated to produce smoke following work requirement</p> <p>2.2 Smoke is maintained according to work requirement.</p> <p>2.3 Smoke is directed into hive using bellows according to workplace requirements</p> <p>2.4 Sufficient time in smoking is ensured for its effectivity following to workplace requirements</p> <p>2.5 Smoking is monitored following industry procedure</p> <p>2.6 Bee smoker is extinguished following operating instructions</p>	<p>2.1 Principles and practices of using smoke on bees to pacify behavior</p> <p>2.2 Types of smoke and the effect on bees and hive products</p> <p>2.3 Suitable bee safe fuel and ignition procedures</p> <p>2.4 Operation of bee smokers and the effect of weather and environmental conditions on the safe use of smoker including fire prevention activities</p> <p>2.5 Health and safety hazards and risks and their controls when using smokers.</p> <p>2.6 Use of PPEs</p>	<p>2.1 Operating bee smoker bellows</p> <p>2.2 Maintaining smoke</p> <p>2.3 Smoking hive</p> <p>2.4 Using bee smoker</p> <p>2.5 Ensuring sufficient time in smoking</p> <p>2.6 Extinguishing bee smoker</p> <p>2.7 Applying safety practices</p> <p>2.8 Using of PPEs</p> <p>2.9 Apply fire safety practices</p>

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
	2.7 Safety practices is applied following OSHS		
3. Conduct post smoking activities	3.1 Bee smoker is cleaned and stored following instructional manual procedure 3.2 <i>Tools and materials</i> are maintained according to workplace protocol. 3.3 Job done are recorded following workplace procedures 3.4 Waste management is employed based on environmental regulations. 3.5 Safety practices are applied following OSHS	3.1 Cleaning and storage of bee smoker and tools 3.2 Job done 3.3 Waste management 3.4 Environmental regulations 3.5 OSHS 3.6 PPEs	3.1 Cleaning and storing bee smoker 3.2 Cleaning and storing tools 3.3 Recording of job done 3.4 Employing waste management 3.5 Applying safety practices 3.6 Practice fire safety measures

RANGE OF VARIABLES

RANGE	VARIABLES
1. Assessment of climatic and other conditions	<p>May include:</p> <p>1.1 Confirm climatic conditions through checking weather details and warning from radio, web and weather bureaus</p> <p>1.2. In the presence of strong windy conditions, bee smoker should not be used for it might start a serious fire</p> <p>1.3 Secure permits from local government as required by local ordinances</p>
2. Checking serviceability of smokers	<p>May include:</p> <p>2.1 Bellows produce plenty of air when puffed</p> <p>2.2 Smoker lid must fit correctly</p> <p>2.3 Inside of the smoker is clean</p> <p>2.4 Heat guard on the smoker is fitting correctly</p>
3. Suitable fuels	<p>May include:</p> <p>3.1 Should not be rags</p> <p>3.2 Free from oils or chemicals</p> <p>3.3 Free from hairs</p> <p>3.4 Free from paper</p> <p>3.5 Free from feathers</p>
4. Extinguishing bee smoker	<p>May include:</p> <p>4.1 Fill the smoker with water</p> <p>4.2 Empty the smoker into an airtight fire proof box with water in it</p> <p>4.3 Block the nozzle and put the smoker into an airtight fire proof box</p> <p>4.4 Empty the smoker fuel into a dug small hole, then fill hole with water and soil.</p>
5. Tools and materials	<p>May include:</p> <p>Tools</p> <p>5.1 Hive brush</p> <p>5.2 Hive tool</p> <p>5.3 Airtight fire proof box</p> <p>Materials</p>

	5.4 Box of matches or lighter 5.5 Smoker fuel 5.6 Bucket water 5.7 Soap 5.8 Towel 5.9 PPEs
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EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared bee smoker 1.2 Used bee smoker 1.3 Conducted post smoking activities 1.4 Applied safety practices 1.5 Used PPEs
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.4 First aid kit
3. Methods of Assessment	Competency in this unit should be assessed through: 3.1 Demonstration/ direct observation with oral questioning 3.2 Written exam
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

UNIT OF COMPETENCY : HARVEST HONEY COMB

UNIT CODE : AFFXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to conduct pre-harvesting activities, collect ripe honey comb from hive, prepare unprocessed honey comb and work on apiary harvest records.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
1. Conduct pre-harvesting activities	1.1 Required tools, materials and equipment are selected based on industry standards 1.2 Workplace hazards and risks are identified and assessed following industry standards 1.3 Control measures are implemented following industry standards. 1.4 Personal Protective Equipment (PPEs) are worn in accordance with occupational safety and health standards 1.5 Food safety risk are identified and controlled according to industry standards 1.6 Biosecurity procedures are followed in accordance with work requirement 1.7 Ripeness of honey comb is determined following industry criteria. 1.8 Treatment records are checked to	1.1 PNS – Code of Good Beekeeping Practices 1.2 Required tools and equipment for removing honey crop 1.3 Serviceability of tools and equipment 1.4 Cleaning and sanitation of tools and equipment 1.5 Workplace hazards and risks 1.6 Implementation of control measures 1.7 Wearing of PPEs 1.8 OSHS 1.9 Food safety risks 1.10 Biosecurity procedures 1.11 Ripeness and maturity of honey comb 1.12 Principles of artificial feeding 1.12.1 When to conduct artificial feeding 1.12.2 Effect of artificial feeding 1.13 Criteria on evaluation of honey comb 1.14 Medications and treatments 1.15 Treatment records	1.1 Following Code of Good Beekeeping Practices 1.2 Selecting required tools and equipment 1.3 Identifying and assessing workplace hazards and risks 1.4 Implementing control measures 1.5 Using PPEs 1.6 Identifying and controlling food safety risk 1.7 Following site quarantine and biosecurity measures 1.8 Determining ripeness of honey comb 1.9 Checking treatment records 1.10 Determining factors affecting the quantity and quality of honey 1.11 Planning time and location of honey harvest

	<p>ensure withholding periods</p> <p>1.9 Factors affecting the quantity and quality of honey are determined following industry standards</p> <p>1.10 Time and location of honey harvest is planned following workplace harvesting procedure and industry standards</p>	<p>1.16 Factors affecting the quantity and quality of honey</p> <p>1.17 Harvesting procedures</p> <p>1.18 Time and location of honey harvest</p>	
<p>2. Collect ripe honey comb from the hive</p>	<p>2.1 Methods on driving away bees from ripe honey comb are selected following industry standards</p> <p>2.2 Bees are drove away based on the selected methods from industry standard.</p> <p>2.3 Ripe honey comb is detached from hive following industry standards.</p> <p>2.4 Harvested honey comb are handled following industry standards and biosecurity procedures</p> <p>2.5 Ripe honey comb is loaded and secured for processing according to industry standards.</p> <p>2.6 Ripe honey comb is transported following industry standards.</p>	<p>2.1 Codes of Good Beekeeping Practices</p> <p>2.2 Methods of removing bees</p> <p>2.3 Removal of ripe honey comb</p> <p>2.4 Prevention of contamination of honey comb</p> <p>2.5 Worker's Hygiene</p> <p>2.6 Workplace sanitation</p> <p>2.7 Biosecurity standards</p> <p>2.8 Loading and transporting of honey comb</p> <p>2.9 Practice of hygiene and food safety</p> <p>2.10 Safe handling and transport requirements</p> <p>2.11 Storage of honey comb</p> <p>3.11.1 Prevent from robbing, damage and contamination</p>	<p>2.1 Selecting methods for removing bees from ripe honey comb</p> <p>2.2 Removing bees</p> <p>2.3 Removing ripe honey comb</p> <p>2.4 Preventing contamination of honey comb</p> <p>2.5 Maintaining desired quality</p> <p>2.6 Loading and securing of ripe honey comb</p> <p>2.7 Applying Code of Good Beekeeping Practices and biosecurity procedures</p> <p>2.8 Applying food safety measures</p> <p>2.9 Transporting ripe honey comb</p> <p>2.10 Following safe handling requirements</p> <p>2.11 Storing ripe honey comb</p> <p>2.12 Identifying pest and bee</p>

			protected environment
3.Prepare unprocessed honey comb	<p>3.1 Frames of section for unprocessed honey comb are selected and reserved according to product and customer requirements</p> <p>3.2 Sections are separated and cleaned according to product requirements</p> <p>3.3 Raw honeycomb are packaged and labeled according to industry standards</p> <p>3.4 Packaged raw honeycomb is stored following industry standards</p>	<p>3.1 PNS – Code of Good Beekeeping practices</p> <p>3.2 Unprocessed honey comb</p> <p>3.3 Selection and reservation of frame of unprocessed honey comb</p> <p>3.4 Cleaning of sections or divide combs</p> <p>3.5 Packaging and labeling of honeycomb</p> <p>3.5.1 Quality assurance</p> <p>3.5.2 Food safety</p> <p>3.6 Storage procedure</p>	<p>3.1 Selecting frames of section for unprocessed honey comb</p> <p>3.2 Separating and cleaning sections or dividing comb</p> <p>3.3 Packaging and labelling raw honey comb</p> <p>3.4 Storing packaged raw honey comb</p>
4.Work on apiary harvest records	<p>4.1 Job done on apiary harvesting are recorded according to workplace requirements.</p> <p>4.2 Honey harvest are totalled following workplace procedures.</p> <p>4.3 Apiary records are updated for honey harvest according to workplace procedure</p> <p>4.4 Mandatory records for honey harvest are maintained according to biosecurity requirements</p>	<p>4.1 Job done</p> <p>4.2 Calculation of harvested honey</p> <p>4.3 Record keeping</p> <p>4.4 Apiary records of honey harvest</p> <p>4.5 Mandatory records for honey harvest</p> <p>4.6 Maintenance of records</p> <p>4.7 Legislative and biosecurity requirements</p> <p>4.8 Communication skills</p>	<p>4.1 Recording job done</p> <p>4.2 Calculating total honey harvest</p> <p>4.3 Updating apiary records</p> <p>4.4 Maintaining mandatory records for honey harvest</p>

RANGE OF VARIABLES

RANGE	VARIABLES
1. Tools, materials and equipment	May include: Tools: 1.1 Bee brush 1.2 Hive tool (multi scraper) Equipment: 1.1 Bee smoker 1.2 Bee blower Materials: 1.1 Bee container 1.2 Bee suit 1.3 Bee veil 1.4 Hive box
2. Ripeness of honey comb	May include: 2.1 At least 75% of honey comb is capped 2.2 Color of cappings 2.3 Low moisture content
3. Factors affecting the quantity and quality	May include: Quantity: 3.1 Weather 3.2 Vegetation 3.3 Population of colony 3.4 Performance of colony Quality: 3.1 Vegetation 3.2 Handling of colony 3.3 Farming practices 3.4 Contamination 3.5 Honey containers
4. Handling of harvested honey comb	May include: 4.1 Prevention from contamination 4.2 Maintenance of desired quality 4.3 Storing in a pest and bee protected environment
5. Industry standards on loading	May include: 5.1 Employing workplace procedures for food safety 5.2 Following safe handling requirements 5.3 Applying transport regulations

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared to remove honey comb 1.2 Collected ripe honey comb from the hive 1.3 Prepared unprocessed honey comb 1.4 Worked on apiary harvest records
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.4 First aid kit
3. Methods of Assessment	Competency in this unit should be assessed through: 5.1 Demonstration/ direct observation with oral questioning 5.2 Written exam
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

UNIT OF COMPETENCY : PROVIDE BEE POLLINATION SERVICES

UNIT CODE : AFFXXXXXX

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to assess pollination service requirement, prepare apiary sites and deliver hives to client, monitor pollination performance of bee colonies and complete pollination services.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range Statement</i>	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILL
1. Assess pollination service requirement	1.1 Pollination services are confirmed with clients according to industry practice. 1.2 Number, location and types of colonies are determined according to crop requirement. 1.3 Factors affecting pollination is confirmed according to industry requirement. 1.4 Strength, condition and health of bee colonies are assessed according to industry procedure 1.5 Risk of pollination problems with client are assessed following industry procedure 1.6 Risk is monitored following industry procedure 1.7 Technical information is provided to client following workplace procedure 1.8 Certificates and permits for transport are obtained	1.1 Pollination services 1.2 Types of colonies 1.3 Number and location of colonies 1.4 Territory and local government legislatives, regulatory and requirements 1.5 Biosecurity affecting pollination services 1.6 Strength, condition and health of bee colonies 1.7 Risk of pollination problems 1.8 Provision of technical information to clients 1.9 Bee performance and health 1.10 Appropriate certificate and permits for transport of colonies	1.1 Confirming pollination services 1.2 Determining number, location and types of colonies 1.3 Confirming factors affecting pollination 1.4 Assessing strength condition and health of bee colonies 1.5 Assessing risk of pollination problems 1.6 Monitoring risk 1.7 Providing technical information to client 1.8 Obtaining certificates and permits for transport

	following industry procedure.		
2. Prepare apiary sites and deliver hives to client	<p>2.1 Sites for hives are prepared according to client's requirements</p> <p>2.2 Hives are delivered and set up according to industry procedure</p> <p>2.3 Strength and condition of hives are demonstrated to clients based in the agreed terms and condition.</p>	<p>2.1 Preparation of apiary sites</p> <p>2.2 Delivery of hives to sites and set up of apiary</p> <p>2.3 Biosecurity code of practice</p> <p>2.4 Strength and condition of hives</p> <p>2.5 Communication</p>	<p>2.1 Preparing sites for hives</p> <p>2.2 Delivering hives</p> <p>2.3 Demonstrating strength and condition of hives</p> <p>2.4 Communication skills</p>
3. Monitor pollination performance of bee colonies	<p>3.1 Spraying programme is discussed with the clients to minimize damage to bees</p> <p>3.2 Crop is monitored to ensure bee foraging and pollination efficiency following standard timeframe</p> <p>3.3 Bee husbandry is carried out to ensure apiary performance following industry procedure</p>	<p>3.1 Spraying programs</p> <p>3.2 Monitor crop</p> <p>3.3 Timeframe of monitoring crop</p> <p>3.4 Bee foraging and pollination efficiency</p> <p>3.5 Bee husbandry practices</p> <p>3.6 Apiary performance</p> <p>3.7 Communication</p> <p>3.8 Safety practices</p>	<p>3.1 Discussing spraying program to client</p> <p>3.2 Monitoring crop</p> <p>3.3 Carrying out bee husbandry</p> <p>3.4 Communication skills</p> <p>3.5 Applying safety practices</p>
4. Complete pollination services	<p>4.1 Records on pollination services are summarized following industry procedures.</p> <p>4.2 Improvement on services are recorded for future operation according to workplace requirements.</p> <p>4.3 Transaction is completed based on the agreed contract.</p>	<p>4.1 Record keeping</p> <p>4.2 Summarizing record</p> <p>4.3 Report preparation</p> <p>4.4 Improvement on services</p> <p>4.5 Completion of transaction</p> <p>4.6 Communication skills</p> <p>4.7 Mathematical skills</p>	<p>4.1 Summarizing records of pollination services</p> <p>4.2 Recording improvement</p> <p>4.3 Completing transaction</p> <p>4.4 Applying communication and mathematical skills</p>

RANGE OF VARIABLES

RANGE	VARIABLES
1. Factors	May include: 1.1 State 1.2 Territory 1.3 Local government legislative 1.4 Regulatory 1.5 Requirements 1.6 Biosecurity
2. Technical information	May include: 2.1 Bee performance 2.2 Health of colony
3. Industry procedure in delivery of hives	May include: 3.1 Workplace procedures 3.2 Legislative requirements 3.3 Biosecurity code of practice

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Assessed pollination service requirement 1.2 Prepared apiary sites and deliver hives to client 1.3 Monitored pollination performance of bee colonies 1.4 Completed pollination services 1.4 Applied safety practices
2. Resource Implications	The following resources should be provided: 2.1 Simulated or actual workplace 2.2 Tools, materials and supplies needed to demonstrate the required tasks 2.3 References and manuals 2.4 First aid kit
3. Methods of Assessment	Competency in this unit should be assessed through: 3.1 Demonstration/ direct observation with oral questioning 3.2 Written exam
4. Context of Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2 Assessment shall be observed while tasks are being undertaken whether individually or in-group

SECTION 3. TRAINING ARRANGEMENTS

TRAINEE ENTRY REQUIREMENTS

Trainees or students wishing to gain entry into this course must possess the following requirements:

- Communication skills
- Basic mathematic skills
- Preferably non - allergic to bee sting

TRAINER'S QUALIFICATIONS FOR AGRICULTURE, FORESTRY AND FISHERY SECTOR

Trainers who will deliver the training on **BEEKEEPING LEVEL II** should have the following:

- Must be a holder of Certificate of Training of Trainers (TOT) or a practicing trainer for at least two (2) years within the last five (5) years
- Must have at least two (2) years industry experience relevant in Beekeeping within the last five (5) years

GLOSSARY OF TERMS

1. Repair	Refers to adjustment, replacement and treatment of hives and hive components
2. Sections	Also referred to as divide comb
3. Treatment	Refers to disinfection of hive components through cleaning, heating and using of repellent

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