COMPETENCY STANDARDS

COCOON PRODUCTION
LEVEL II

AGRICULTURE, FORESTRY AND FISHERY SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
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AGRICULTURE, FORESTRY AND FISHERY SECTOR

COCOON PRODUCTION LEVEL II

COMPETENCY STANDARDS FOR
COCOON PRODUCTION LEVEL II

Section 1 COCOON PRODUCTION PQF LEVEL II

The **COCOON PRODUCTION LEVEL II** Qualification consists of competencies that a person must achieve to produce Cocoon. The competencies included in this qualification are: Implement Farm System Technologies, Implement Silkworm Rearing Technologies.

The units of competency comprising this qualification include the following:

Code	BASIC COMPETENCIES
400311210	Participate in workplace communication
400311211	Work in team environment
400311212	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
AFF321201	Apply safety measures in farm operations
AFF321202	Use farm tools and equipment
AFF321203	Perform estimation and calculations
AFF321205	Process farm wastes
SOC413206	Perform record keeping

Code	CORE COMPETENCIES
AB-AFF0103300731301	Implement Farm System Technologies
AB-AFF0103300731302	Implement Silkworm Rearing Technologies

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

- **Cocoon Farmer**

SECTION 2 COMPETENCY STANDARDS

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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1. 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 various levels in the workplace 1.7. Gathering and providing basic information in

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	1.6. Defined workplace procedures for the location and ***storage*** of information are used. 1.7. Personal interaction is carried out clearly and concisely		response to workplace requirements 1.8. Basic business writing skills 1.9. Interpersonal skills in the workplace 1.10. Active-listening skills

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Perform duties following workplace instructions	2.1. Written notices and instructions are read and interpreted in accordance with organizational guidelines. 2.2. Routine written instruction is 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 sought and asked from ***appropriate sources***. 2.6. Meetings outcomes are interpreted and implemented.	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. Communicatio n 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	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 response to workplace requirements 2.8. Basic questioning/ querying 2.9. Skills in reading for information 2.10. Skills in locating

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Complete relevant work-related documents	3.1. Range of ***forms*** relating to conditions of employment are completed accurately and legibly. 3.2. Workplace data is recorded on standard workplace forms and documents. 3.3. Errors in recording information on forms/ documents are identified and acted upon. 3.4. Reporting requirements to supervisor are completed according to organizational guidelines.	3.1. Effective verbal and non-verbal communication 3.2. Different modes of communication 3.3. Workplace forms and documents 3.4. Organizational/ Workplace policies 3.5. Communication procedures and systems 3.6. Technology relevant to the enterprise and the individual's work responsibilities	3.1. Completing work- related documents 3.2. Applying operations of addition, subtraction, division and multiplication 3.3. Gathering and providing information in response to workplace requirements 3.4. Effective record keeping skills

RANGE OF VARIABLES

VARIABLE	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 5.2 telephone message forms 5.3 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. Telephone/Cellphone 2.2. Notebook 2.3. Writing materials 2.4. 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	Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY : WORK IN 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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
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 and appropriate external sources	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
3. Work as a team member	3.1. Effective and appropriate forms of communications are used and interactions undertaken with team members based on company practices. 3.2. Effective and appropriate contributions made to complement team activities and objectives, based on ***workplace context***.	3.1. Communication Process 3.2. Workplace communication protocol 3.3. Team planning and decision making 3.4. Team thinking 3.5. Team roles 3.6. Process of team development 3.7. Workplace context	3.1. Communicating appropriately, consistent with the culture of the workplace 3.2. Interacting effectively with others 3.3. Deciding as an individual and as a group using group think strategies and techniques 3.4. Contributing to Resolution of issues and concerns

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.3. Protocols in reporting are observed based on standard company practices. 3.4. Contribute to the development of team work plans based on an understanding of team's role and objectives.		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	May include: 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: 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: 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

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 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
2. Resource Implications	The following resources should be provided: 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
3. Methods of Assessment	Competency in this unit may be assessed through: 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
4. Context for Assessment	4.1. Competency may be assessed in workplace or in a simulated workplace setting 4.2. Assessment shall be observed while task is being undertaken whether individually or in group

UNIT OF COMPETENCY : **ADDRESS GENERAL WORKPLACE PROBLEMS**

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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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

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

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/Procedural Problem	May include: 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. Document	May include: 2.1. Electronic mail 2.2. Briefing notes 2.3. Written report 2.4. Evaluation report
3. Appropriate person	May include: 3.1. Supervisor or manager 3.2. Peers/work colleagues 3.3. Other members of the organization
4. Plan	May include: 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	Assessment requires evidence that the candidate: 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	Competency in this unit may be assessed through: 3.1. Case Formulation 3.2. Life Narrative Inquiry 3.3. Standardized test 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.
4. Context for Assessment	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 *Italicized terms* 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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Develop reflective practice	2.1. Personal strengths and achievements, based on self-assessment strategies and teacher feedback are contemplated 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. 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.	2.1. Basic SWOT analysis 2.2. Strategies to improve one's attitude in the workplace 2.3. Gibbs' Reflective Cycle/Model (Description, Feelings, Evaluation, Analysis, Conclusion, and Action plan)	2.1. Using the basic SWOT analysis as self-assessment strategy 2.2. Developing reflective practice through realization of limitations, likes/ dislikes; through showing of self-confidence 2.3. Demonstrating self-acceptance and being able to accept challenges
3. Boost self-confidence and develop self-regulation	3.1. Efforts for continuous self-improvement are demonstrated. 3.2. Counter-productive tendencies at work are eliminated. 3.3. Positive outlook in life is	3.1. Four components of self-regulation based on Self-Regulation Theory (SRT) 3.2. Personality development concepts 3.3. Self-help concepts (e. g., 7 Habits by	3.1. Performing effective communication skills – reading, writing, conversing skills 3.2. Showing affective skills – flexibility, adaptability, etc.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	maintained.	Stephen Covey, transactional analysis, psycho-spiritual concepts)	3.3. Self-assessment for determining one's strengths and weaknesses

RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-management strategies	May include: 1.1. Seeking assistance in the form of job coaching or mentoring 1.2. Continuing dialogue to tackle workplace grievances 1.3. Collective negotiation/bargaining for better working conditions 1.4. Share your goals to improve with a trusted co- worker or supervisor 1.5. Make a negativity log of every instance when you catch yourself complaining to others 1.6. Make lists and schedules for necessary activities
2. Unpleasant situation	May include: 2.1. Job burn-out 2.2. Drug dependence 2.3. Sulking

EVIDENCE GUIDE

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

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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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*** is 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 improvement 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 selected based on feedback. 2.5. ***Critical inquiry method*** is used to	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 changes that are within and outside own

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

RANGE OF VARIABLES

VARIABLE	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	May include: 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	May include: 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	Assessment requires evidence that the candidate: 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	The following resources should be provided: 2.1. Pens, papers and writing implements 2.2. Cartolina 2.3. Manila papers
3. Methods of Assessment	Competency in this unit may be assessed through: 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	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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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. Organizational 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. Organizational values, ethics and codes of conduct	1.1. Describing organizational 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 organizational values, ethics and codes of conduct
2. Assess gathered data/ information	2.1. Validity of data/ information is assessed. 2.2. Analysis techniques are applied to assess data/	2.1. Business mathematics and statistics 2.2. Data analysis techniques/ procedures 2.3. Reporting	2.1. Computing business mathematics and statistics 2.2. Describing data analysis techniques/

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	requirements to a range of audiences 2.4. Legislation, policy and procedures relating to the conduct of evaluations 2.5. Organizational values, ethics and codes of conduct	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 organizational values, ethics and codes of conduct
3. Record and present information	3.1. Studied data/information are recorded. 3.2. Recommendations is analyzed for action to ensure they are compatible with the project's scope and terms of reference. 3.3. Interim and final reports are analyzed 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. Organizational 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 organizational values, ethics and codes of conduct practices

RANGE OF VARIABLES

VARIABLE	RANGE
1. Data analysis techniques	May include: 1.1. Domain analysis 1.2. Content analysis 1.3. Comparison technique

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1. Determine data / information 1.2. Studied and applied gathered data/information 1.3. Recorded and studied data/information 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.
2. Resource Implications	Specific resources for assessment 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.
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Written Test 3.2. Interview 3.3. Portfolio 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.
4. Context for Assessment	In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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.	1.1. OSH preventive and control requirements 1.2. Hierarchy of Controls 1.3. Hazard Prevention and Control 1.4. General OSH principles 1.5. Work standards and procedures 1.6. Safe handling procedures of tools, equipment and materials 1.7. 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. 2.2. Required OSH	2.1. Resources necessary to execute hierarchy of controls 2.2. General OSH principles 2.3. Work standards and procedures 2.4. Safe handling	2.1. Communication skills 2.2. Estimation skills 2.3. Interpersonal skills 2.4. Critical thinking skills 2.5. Observation skills 2.6. Material, tool

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	materials, tools and equipment are acquired in accordance with workplace policies and procedures. 2.3. Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards.	procedures of tools, equipment and materials 2.5. Different OSH control measures	and equipment identification skills
3. Perform tasks in accordance with relevant OSH policies and procedures	3.1. Relevant OSH work procedures are identified in accordance with workplace policies and procedures. 3.2. Work Activities are executed in accordance with OSH work standards. 3.3. ***Non-OSH compliance work activities*** are reported to appropriate personnel.	3.1. OSH work standards 3.2. Industry related work activities 3.3. General OSH principles 3.4. OSH Violations Non-compliance work activities	3.1. Communication skills 3.2. Interpersonal skills 3.3. Troubleshooting skills 3.4. Critical thinking skills 3.5. Observation skills

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: 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

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 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
2. Resource Implications	The following resources should be provided: 2.1. Facilities 2.2. materials tools and equipment necessary for the activity
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Observation/Demonstration with oral questioning 3.2. Third party report
4. Context for Assessment	Competency may be assessed in the workplace 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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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 ***environmental work procedures***.	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 of resource utilization	2.1. Potential causes of inefficiency and/or ineffectiveness are listed. 2.2. Causes of inefficiency and/or ineffectiveness are identified	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

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	through deductive reasoning. 2.3. Identified causes of inefficiency and/or ineffectiveness are validated thru established environmental procedures.		
3. Convey inefficient and ineffective environmental practices	3.1. Efficiency and effectiveness of resource utilization are reported to ***appropriate personnel***. 3.2. Concerns related resource utilization are discussed with appropriate personnel. 3.3. Feedback on information/ concerns raised are clarified with appropriate personnel.	3.1. Appropriate Personnel to address the environmental hazards 3.2. Environmental corrective actions	3.1. Written and Oral Communication Skills 3.2. Critical thinking 3.3. Problem Solving 3.4. Observation Skills 3.5. Practice Environmental Awareness

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

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 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 effectives of resource utilization to appropriate personnel 1.6. Clarify feedback on information/concerns raised with appropriate personnel
2. Resource Implications	The following resources should be provided: 2.1. Workplace 2.2. Tools, materials and equipment relevant to the tasks 2.3. PPE 2.4. Manuals and references
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration 3.2. Oral questioning 3.3. Written examination
4. Context for Assessment	4.1. Competency assessment may occur in workplace or any appropriately simulated environment 4.2. Assessment shall be observed while task is 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.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. 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 entrepreneuri al attitudes: 1.3.1. Patience 1.3.2. Honesty 1.3.3. Quality-conscious ness 1.3.4. Safety-conscious ness 1.3.5. Resource fulness	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 communicated to appropriate person	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 2.3.3. Quality-conscious	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Following workplace communication protocol

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3. Cost-conscious habits in resource utilization are communicated based on industry standards.	ness 2.3.4. Safety-conscious ness 2.3.5. Resource fulness	
3. Implement cost-effective operations	3.1. Preservation and optimization of workplace resources is implemented in accordance with enterprise policy 3.2. Judicious use of workplace tools, equipment and materials are observed according to manual and work requirements. 3.3. Constructive contributions to office operations are made according to enterprise requirements. 3.4. Ability to work within one's allotted time and finances is sustained.	3.1. Optimization of workplace resources 3.2. 5S procedures and concepts 3.3. Criteria for cost-effectiveness 3.4. Workplace productivity 3.5. Impact of entrepreneuria l mindset to workplace productivity 3.6. Ways in fostering entrepreneuria l attitudes: 3.6.1. Quality-consciou sness 3.6.2. Safety-consciou sness	3.1. Implementing preservation and optimizing workplace resources 3.2. Observing judicious use of workplace tools, equipment and materials 3.3. Making Constructive contributions to office operations 3.4. Sustaining ability to work within allotted time and finances

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
3. Appropriate Personnel	May include: 3.1. Manager 3.2. Safety Officer 3.3. EHS Offices 3.4. Supervisors 3.5. Team Leaders 3.6. Administrators 3.7. Stakeholders 3.8. Government Official 3.9. Key Personnel 3.10. Specialists 3.11. Himself

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 COMPETENCIES

UNIT OF COMPETENCY : **APPLY SAFETY MEASURES IN FARM OPERATIONS**

UNIT CODE : **AFF321201**

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 ***Italicized terms*** 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 is determined in line with farm operations 1.3. ***Time*** for safety measures is determined in line with farm operations 1.4. Appropriate ***tools, materials and outfits*** are prepared in line with job requirements	1.1. Different work tasks in farm operations 1.2. Place and time for implementation of safety measures 1.3. Different hazards in the workplace 1.4. Types of tools, materials and outfits	1.1. Identifying work tasks in farm operations 1.2. Determining place and time for implementation of safety measures 1.3. Reading labels, manuals and other basic safety information 1.4. Identifying effective/ functional tools, materials and outfit 1.5. Preparing tools, materials and outfits 1.6. Discarding defective tools, and materials

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* 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	2.1. Uses and functions of tools 2.2. Outfits and how to wear it. 2.3. Expiration/shelf life of materials 2.4. Proper disposal of expired materials 2.5. Environmental rules and regulation 2.6. Emergency procedures 2.7. Hazards Identification and reporting 2.8. Communication skills 2.9. OSHS	2.1. Using tools and materials in the workplace 2.2. Wearing of outfits 2.3. Observing expiration/ shelf life of materials 2.4. Disposing of expired materials 2.5. Following emergency procedures 2.6. Identifying and reporting of hazards in workplace area.
3. Safe keep of tools, materials and outfit and disposal of wastes	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	3.1. Procedures of cleaning used tools and outfits 3.2. Label and storage unused materials 3.3. Disposal of wastes materials 3.4. Manufacturers recommendation on keeping materials 3.5. Environmental rules and regulations	3.1. Cleaning used tools and outfit 3.2. Labelling and storing unused materials 3.3. Disposing waste materials

RANGE OF VARIABLES

VARIABLE	RANGE
1. Work tasks	May include: 1.1. Crop Production 1.2. Post-harvest 1.3. Agri-marketing 1.4. Farm Equipment
2. Place	May include: 2.1. Stock room/storage areas/warehouse 2.2. Field/farm/orchard
3. Time	May include: 3.1. Fertilizer and pesticides application 3.2. Feed mixing and feeding 3.3. Harvesting and hauling
4. Tools, materials and outfits	May include: 4.1. Tools 4.1.1. Wrenches 4.1.2. Screw driver 4.1.3. Pliers 4.2. Outfit 4.2.1. Masks 4.2.2. Gloves 4.2.3. Boots 4.2.4. Overall coats 4.2.5. Hat 4.2.6. Eye goggles
5. Emergency procedures	May include: 5.1. Location of first aid kit 5.2. Evacuation 5.3. Agencies contract 5.4. Farm emergency procedures
6. Hazards	May include: 6.1. Chemical 6.2. Electrical 6.3. 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. Performed proper safe keep of tools, materials and outfit used 1.4. Performed proper disposal of used materials
2. Resource Implications	The following resources should be provided: 2.1. Farm location 2.2. Tools, equipment and outfits appropriate in applying safety measures
3. Method of Assessment	Competency in this unit must be assessed through: 3.1. Practical demonstration 3.2. Third Party Report
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : USE FARM TOOLS AND EQUIPMENT

UNIT CODE : AFF321202

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 ***Italicized terms*** 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	1.1. Types and uses of farm tools 1.2. Characteristics of functional tools 1.3. Check tools for defects/fault 1.4. Segregate and report defective tools 1.5. Uses of tools and equipment	1.1. Identifying farm tools for the work 1.2. Checking the conditions of tools 1.3. Reporting defective tools 1.4. Using tools
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	2.1. Types and operations of farm equipment 2.2. Standard operating procedures of farm equipment 2.3. Instructional manual of equipment 2.4. Pre-operation check-up 2.5. Equipment Specification 2.6. Procedures in calibrating and use of equipment 2.7. Equipment faults identification	2.1. Identifying appropriate farm equipment for the work 2.2. Reading instructional manual. 2.3. Conducting pre-operation check-up 2.4. Identifying faults/defects of farm equipment 2.5. Reporting on defective farm equipment 2.6. Operating farm equipment

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.6. Safety procedures are followed.	and reporting 2.8. Operation of equipment 2.9. Codes and Regulations on environmental protection 2.10. Safety and keeping of equipment every after use 2.11. Safety measures	2.7. Following 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	3.1. Cleaning procedures of tools and equipment 3.2. Maintenance procedures of farm equipment 3.3. Storage of tools and equipment 3.4. Designated storage areas	3.1. Cleaning tools and equipment 3.2. Performing routinary check-up of tools and equipment 3.3. Maintaining farm equipment 3.4. Storing tools and equipment

RANGE OF VARIABLES

VARIABLE	RANGE
1. Farm tools	May include: 1.1. Sickle 1.2. Cutters 1.3. Weighing scales 1.4. Hand tools 1.5. Measuring tools 1.6. Garden tools
2. Farm equipment	May include: 2.1. Engine 2.2. Pumps 2.3. Generators 2.4. Sprayers
3. Pre-operation check-up	May include: 3.1. Tires 3.2. Brake fluid 3.3. Fuel 3.4. Water 3.5. Oil 3.6. Lubricants 3.7. Battery

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Identified and selected correctly appropriate farm tools and equipment 1.2. Selected and operated farm equipment 1.3. Performed preventive maintenance
2. Resource Implications	The following resources should be provided: 2.1. Service/operational manual of farm tools and equipment 2.2. Tools and equipment 2.3. Farm implements
3. Method of Assessment	Competency in this unit must be assessed through: 3.1. Direct observation 3.2. Practical demonstration 3.3. Third Party Report
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : **PERFORM ESTIMATION AND BASIC CALCULATION**

UNIT CODE : **AFF321203**

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	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. Work completion is estimated accurately 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. Computing percentage 1.6. Converting English to Metric systems of measurement 1.7. Preparing estimate report
2. Perform basic workplace calculation	2.1. ***Systems and units of measurement*** to be followed are ascertained. 2.2. Calculation needed to complete work tasks are performed using the ***four basic mathematical operation***.	2.1. Four basic mathematical operations 2.2. System and units of measurements 2.3. Fraction, percentage and ratio 2.4. Material take-off 2.5. Materials costing	2.1. Computing bill of materials 2.2. Computing project cost

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	2.3. Whole fraction, percentage and mixed numbers are calculated to complete work instructions 2.4. Number computed is checked following work requirements.		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Systems and units of measurement	May include: 1.1. Systems of measurement 1.1.1. English 1.1.2. Metric 1.2. Units of Measurement 1.2.1. Area 1.2.2. Volume 1.2.3. Weight 1.2.4. Length
2. Four basic mathematical operations	May include: 2.1. Addition 2.2. Subtraction 2.3. Multiplication 2.4. Division

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Performed estimation 1.2. Performed basic workplace calculation
2. Resource Implications	The following resources should be provided: 2.1. Relevant tools and equipment for basic calculation 2.2. Recommended data
3. Method of Assessment	Competency in this unit must be assessed through: 3.1. Practical demonstration 3.2. Written examination
4. Context of Assessment	Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : PROCESS FARM WASTES

UNIT CODE : AFF321205

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to process farm wastes. It comprises functions such as collecting farm wastes, conducting waste identification and segregation, treating and processing farm wastes and performing housekeeping duties.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Collect farm wastes	1.1. ***Tools and materials*** are prepared for collection of farm wastes. 1.2. Wastes are collected following OSHS and waste collection requirements and plan. 1.3. Dangerous and hazardous wastes are collected following the HAZMAT (hazardous material) protocol. 1.4. Appropriate personal protective equipment (PPE) is worn as prescribed by Occupational Safety and Health 1.5. Standards (OSHS)	1.1. Tools and materials use in wastes management 1.2. Categories of farm wastes 1.3. Waste collection and segregation procedures 1.4. Farm-waste handling, storage and disposal procedures 1.5. Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 1.6. Personal Protective Equipment (PPE)	1.1. Performing occupational health and safety 1.2. Using tools and equipment skillfully 1.3. Calculating 1.4. Communicating effectively

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Identify and segregate wastes	2.1. Wastes are identified by categories according to industry standards and environmental legislation. 2.2. Wastes are segregated according to organizational requirements and relevant legislation. 2.3. Sorted waste is placed into labelled container to avoid littering and prevent cross-contamination. 2.4. Information on waste is obtained by asking authority to ensure correct identification.	2.1. Tools and materials use in wastes management 2.2. Categories of farm wastes 2.3. Waste collection and segregation procedures 2.4. Farm-waste handling, storage and disposal procedures 2.5. Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 2.6. Personal Protective Equipment (PPE)	2.1. Performing occupational health and safety 2.2. Using tools and equipment skillfully 2.3. Calculating 2.4. Communicating effectively
3. Treat and process farm wastes	3.1. ***Dangerous and hazardous wastes*** are handled according to organizational requirements and relevant legislation following OSHS procedures. 3.2. **Processing of farm wastes** is done following environmental legislation and codes. 3.3. ***Principles of 3Rs*** are applied	3.1. Tools and materials use in wastes management 3.2. Categories of farm wastes 3.3. Waste collection and segregation procedures 3.4. Farm-waste handling, storage and disposal procedures 3.5. Dangerous and hazardous wastes,	3.1. Performing occupational health and safety 3.2. Using tools and equipment skillfully 3.3. Calculating 3.4. Communicating effectively

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	accordingly. 3.4. ***Farm wastes*** are disposed of according to environmental legislation and codes.	hazardous materials (hazmat) protocols 3.6. Personal Protective Equipment (PPE)	
4. Perform housekeeping	4.1. Appropriate warning signs and labels are displayed in conspicuous places around the workplace. 4.2. Work area is cleaned according to 5S principles. 4.3. Tools are checked, cleaned and stowed according to established industry procedures and following user's manual. 4.4. Materials are stored following industry standard procedures and manufacturer's specifications. 4.5. PPE is checked for damage prior to ensuring that clean and undamaged equipment is stored. 4.6. Storage facility is checked to ensure no contamination in the area according to Organizational requirements and legislation and	4.1. Tools and materials use in wastes management 4.2. Categories of farm wastes 4.3. Waste collection and segregation procedures 4.4. Farm-waste handling, storage and disposal procedures 4.5. Dangerous and hazardous wastes, hazardous materials (hazmat) protocols 4.6. Personal Protective Equipment (PPE)	4.1. Performing occupational health and safety 4.2. Using tools and equipment skillfully 4.3. Calculating 4.4. Communicating effectively

ELEMENT	PERFORMANCE CRITERIA ***Italicized terms*** are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	codes. 4.7. ***Record keeping*** is done according to industry requirements.		

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Tools and materials	May include: 1.1. Tools 1.1.1. Spade 1.1.2. Wheel borrows 1.1.3. Broomstick 1.1.4. Sprayer or pressurized pump 1.2. Materials 1.2.1. Sacks 1.2.2. Containers 1.2.3. Disinfectants 1.2.4. Detergents 1.2.5. First-aid kit 1.2.6. Chemical spill kit 1.2.7. Personal Protective Equipment 1.2.7.1. Goggles 1.2.7.2. Disposal gloves 1.2.7.3. Face mask 1.2.7.4. Rubber boots 1.2.7.5. Overall
2. Dangerous and hazardous wastes	May include: 2.1. Pesticides 2.2. Syringes 2.3. Expired biologics 2.4. Expired veterinary drugs 2.5. Spoiled milk 2.6. Diseased plant and plant parts 2.7. Empty veterinary bottles/syringes
3. Processing of Farm wastes	May include: 3.1. Composting 3.2. Compacting 3.3. Liquefying 3.4. Shredding 3.5. Carbonizing 3.6. Charcoaling
4. Principles of 3Rs	May include: 4.1. Re-usable 4.2. Recyclable 4.3. Reduce

VARIABLE	SCOPE
5. Farm wastes	May include: 5.1. Plant materials 5.2. Hay 5.3. Weeds 5.4. Twigs 5.5. Twines 5.6. Empty wooden crates 5.7. Animal manure 5.8. Feed refuse 5.9. Spoiled feeds (Forage and feed supplements) 5.10. Spent bedding materials 5.11. Empty sacks 5.12. Trash fish 5.13. Fish meal 5.14. Effluent
6. Record Keeping	May include: 6.1. Record of farm wastes generated and disposed 6.2. Record of incidence of infection and accidents 6.3. Record of chemical spillage 6.4. Record of destroyed carcasses 6.5. Inventory of tools, materials and equipment

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Collected farm waste 1.2. Identified and segregated farm wastes 1.3. Treated and processed farm wastes 1.4. Performed housekeeping
2. Resource Implications	The following resources should be provided: 2.1. Farm area 2.2. Different farm wastes 2.3. Farm-waste processing area 2.4. Tools, supplies and materials use in farm wastes collection, segregation, and processing 2.5. Housekeeping tools and supplies 2.6. Personal Protective Equipment
3. Method of Assessment	Competency in this unit may be assessed through: 3.1. Observation and questioning 3.2. Third-Party Report 3.3. Demonstration and oral questioning
4. Context of Assessment	Competency maybe assessed individually in the actual workplace or in accredited farms or institution.

UNIT OF COMPETENCY : PERFORM RECORD KEEPING

UNIT CODE : SOC413206

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to carry-out inventory activities, maintain production record and prepare financial records.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Carry out inventory activities	1.1. ***Inventory inputs*** are determined according to enterprise requirements. 1.2. Defective tools and equipment are determined according to operation manuals 1.3. Facilities are inspected according to according to standard codes and laws.	1.1. Kinds of tools and equipment 1.2. Defects of tools and equipment 1.3. Monitoring method 1.4. Farm planning and budgeting 1.5. Methods and process of production 1.6. Quality control 1.7. Basic bookkeeping 1.8. Practice 3Rs and 5S 1.9. Implement Program of work activities as scheduled	1.1. Working safely 1.2. Determining defective tools and equipment 1.3. Measuring and calculating 1.4. Estimating 1.5. Basic mathematical skills 1.6. Preparing of reports 1.7. Bookkeeping 1.8. Communicating orally and written

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Maintain production record	2.1. Production plan is prepared according to enterprise requirements. 2.2. Schedule for ***production activities*** is prepared based from enterprise requirements and plan. 2.3. ***Production report*** is prepared in 2.4. accordance with enterprise reporting procedures ***Inputs*** and ***production*** are monitored using monitoring chart	2.1. Kinds of tools and equipment 2.2. Defects of tools and equipment 2.3. Monitoring method 2.4. Farm planning and budgeting 2.5. Methods and process of production 2.6. Quality control 2.7. Basic bookkeeping 2.8. Practice 3Rs and 5S 2.9. Implement program of work activities as scheduled	2.1. Working Safely 2.2. Determining Defective Tools and Equipment 2.3. Measuring and Calculating 2.4. Estimating 2.5. Basic Mathematical Skills 2.6. Preparing of Reports 2.7. Bookkeeping 2.8. Communicating Orally and Written
3. Prepare financial records	3.1. ***Production cost*** is computed using established computation procedures. 3.2. Revenue is computed using established computation procedures.	3.1. Kinds of tools and equipment 3.2. Defects of tools and equipment 3.3. Monitoring method 3.4. Farm planning and budgeting 3.5. Methods and process of production 3.6. Quality control 3.7. Basic bookkeeping 3.8. Practice 3Rs and 5S 3.9. Implement	3.1. Working safely 3.2. Determining defective tools and equipment 3.3. Measuring and calculating 3.4. Estimating 3.5. Basic mathematical skills 3.6. Preparing reports 3.7. Bookkeeping 3.8. Communicating orally and written

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
		program of work activities as scheduled	

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Inventory inputs	May include: 1.1. Plant 1.1.1. Planting materials 1.1.2. Fertilizer 1.1.3. Concoctions (Pesticides and insecticides) 1.1.4. Beneficial microorganisms 1.2. Animals 1.2.1. Stocks 1.2.2. Feeds 1.2.3. Concoctions 1.2.4. Medications 1.2.5. Beneficial microorganisms 1.3. Miscellaneous materials
2. Production activities	May include: 2.1. Plant 2.1.1. Planting 2.1.2. Fertilizer application 2.1.3. Pesticides application 2.1.4. Implementation of bio-security measures 2.1.5. Irrigation/watering 2.1.6. Weeding 2.1.7. Harvesting 2.1.8. Post-harvesting 2.2. Animal 2.2.1. Feeding 2.2.2. Cleaning and Sanitation 2.2.3. Implementation of bio-security measures 2.2.4. Growth and health condition 2.2.5. Harvesting 2.2.6. Post harvesting 2.3. Miscellaneous activities
3. Production report	May include: 3.1. Categorize and record quality of harvest 3.2. Volume /quantity of products harvested
4. Inputs	May include: 4.1. Input(plant) 4.1.1. Fertilizer 4.1.2. Concoctions (Pesticides and insecticides) 4.1.3. Beneficial microorganisms 4.2. Input(animal) 4.2.1. Feeds 4.2.2. Concoctions 4.2.3. Medication 4.2.4. Beneficial microorganisms 4.3. Miscellaneous inputs

VARIABLE	SCOPE
5. Production	May include: 5.1. Growth rate 5.2. Survival rate
6. Production cost	May include: 6.1. Labor 6.2. Inputs 6.3. Tools, equipment and facility depreciation cost 6.4. Administrative cost 6.5. Miscellaneous

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1. Performed inventory activities 1.2. Maintained production records 1.3. Prepared financial records
2. Resource Implications	The following resources should be provided: 2.1. All supplies, materials and farm implements needed during farm operations should be readily available at the farm site: 2.1.1. Farm site 2.1.2. Office supplies, materials, tools and farm equipment 2.2. Protective clothing equipment and materials. 2.3. Technical supervisors should have skills and ability in the successful implementation of work program activities.
3. Method of Assessment	Competency in this unit may be assessed through: 3.1. Demonstration with questioning 3.2. Written examination
4. Context of Assessment	Assessment may occur in an appropriately simulated environment through TESDA accredited assessment centers.

CORE COMPETENCIES

UNIT OF COMPETENCY : IMPLEMENT FARM SYSTEM TECHNOLOGY

UNIT CODE : AB-AFF0103300731301

UNIT DESCRIPTOR : This unit of competency comprises the knowledge, skills, and attitude in preparing land for cocoon production. This includes conduct site selection activity, perform land preparation and complete activities.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Propagate mulberry plant materials	1.1. ***Plant Materials*** are selected based on Package of Technology on Sapling Production 1.2. Nursery bed is prepared based on techno guide on sapling production 1.3. Cuttings are planted based on Package of Technology on Mulberry production	1.1. Definition and importance of asexual propagation 1.2. Identification of branch maturity 1.3. Importance of disinfection and incubation of cuttings 1.4. Basic parts and functions of hand tractor 1.5. Operation of hand tractor 1.6. Basic procedures in cutting	1.1. Explaining importance of asexual propagation 1.2. Identifying branch maturity 1.3. Demonstrating Importance of disinfection and incubation of cuttings 1.4. Identifying Basic parts and functions of hand tractor 1.5. Operating hand tractor 1.6. Performing basic procedure in cutting

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Establish Mulberry Plantation	2.1. Area is selected based on optimum ***environmental requirements*** 2.2. Land is prepared as specified in the ***Package of Technology (POT) on Mulberry Production*** 2.3. Transplanting is done following the recommended ***methods of planting***	2.1. Describe the various environmental requirements 2.2. Definition and importance of soil fertility 2.3. Formula in computing plant density 2.4. Procedures in transplanting saplings	2.1. Describing the various environmental requirement 2.2. Explaining the importance of soil fertility 2.3. Computing the required plant density 2.4. Performing transplanting of saplings
3. Perform Cultural Management	3.1. Cultural management is based on mulberry physiology 3.2. Plantation is irrigated based on ***irrigation methods*** and required frequency 3.3. Mulberry is fertilized based on the recommended fertility rate and frequency 3.4. Mulberry leaves are harvested based on recommended ***maturity*** 3.5. Mulberry is pruned based on the ***pruning standard***	3.1. Explanation of mulberry physiology 3.2. Irrigation method and frequency 3.3. Fertility rate and frequency 3.4. Importance of leaf maturity 3.5. Importance and standard of pruning 3.6. Explain the role of Integrated Pest Management in mulberry production 3.7. Explain procedures on chemical container disposal	3.1. Performing application of mulberry Physiology 3.2. Carrying-out irrigation method and frequency 3.3. Distinguishing fertility rate and frequency 3.4. Explaining the effect of leaf maturity 3.5. Performing pruning procedures 3.6. Explaining the role of IPM in mulberry Production 3.7. Practicing GAP on waste disposal

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	3.6. ***Integrated pest management*** is regularly monitored based on POT 3.7. Hazardous wastes are disposed based on ***Good Agricultural Practices (GAP) disposal system***		

RANGE OF VARIABLES

VARIABLE	RANGE
1. Plant Materials	May include: 1.1. Batac 1.2. s54 1.3. Alfonso
2. Environmental requirements	May include: 2.1 Temperature – 24-28° C 2.2 RH – 65-80% 2.3 Rainfall – 600-2500mm 2.4 Sunlight – 9-13h/day 2.5 Soil – Loamy – clayey 2.6 pH – 6.2 – 6.8
3. Package of Technology (POT) on Mulberry production	May include: 3.1. Cutting size 3.1.1. 3 bnds 3.1.2. 4 bnds 3.2. Nursery bed preparation 3.2.1. raise beds (for rainy season) 3.2.2. flat beds (for dry season)
4. Methods of Planting	May include: 4.1 Ridge 4.2 Pit
5. Irrigation methods	May include 5.1. Furrow 5.2. Flat bad 5.3. Basin 5.4. Sprinkler 5.5. Drip
6. Maturity	May include: 7.1. 50 days after pruning 7.2. 60 days after pruning
7. Pruning standard	May include: 8.1. Bottom cut (25cm above the ground) 8.2. Middle Cut (50cm above the ground) 8.3. High cut (1m above the ground)
8. Integrated Pest management	May include: 9.1. Chemical 9.2. Biological 9.3. Mechanical
9. Good Agricultural Practices (GAP) Disposal System	May include: 10.1. Washing 10.2. Burning 10.3. Burial

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1. Propagated mulberry plant materials 1.2. Established mulberry plantation 1.3. Performed cultural management
2. Resource Implications	The following resources should be provided: 2.1. Workplace location 2.2. Tools, equipment and materials relevant to the unit of competency 2.3. Specifications, standards and requirements relevant to the activities
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Direct Observation 3.2. Demonstration with oral questioning 3.3. Written Test
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 task is being undertaken whether individually or in group

UNIT OF COMPETENCY : **IMPLEMENT SILKWORM REARING TECHNOLOGIES**

UNIT CODE : **AB-AFF0103300731302**

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required in rearing cocoon. This includes performing pre- rearing and rearing activities up to harvesting of cocoons.

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare rearing house tools and implement for young age silkworm larvae	1.1. ***Resources*** for young age silkworm rearing are evaluated based on Standard Operating Procedures (SOP) 1.2. Rearing house tools and implements are disinfected based on ***Standard Operating Procedures (SOP)*** 1.3. Hazardous wastes are disposed based on ***Good Agricultural Practices (GAP)***	1.1. Evaluation of required resources for young age SW 1.2. Disinfection of rearing house tools and implement 1.3. Procedures on chemical container disposal	1.1. Identifying the required resources for young age SW 1.2. Performing proper procedure in disinfecting of rearing house 1.3. Practicing GAP in Waste disposal
2. Rear young age silkworm larvae	2.1. Silkworm eggs are incubated based on ***Package of Technology (POT) incubation procedure*** 2.2. Newly hatched silkworm larvae are brushed based on Package of Technology (POT) incubation procedure 2.3. Mulberry leaves are harvested based on Package Of Technology	2.1. Procedure in incubation of silkworm eggs 2.2. Procedure in silkworm brushing 2.3. Leaf harvesting based on silkworm larvae stage 2.4. Requirements in feeding silkworm larvae 2.5. Importance of bed cleaning and procedure in disinfecting	2.1. Applying the procedure in silkworm egg incubation 2.2. Following silkworm brushing procedure 2.3. Following leaf harvesting procedure 2.4. Following procedure in feeding silkworm larvae 2.5. Applying bed disinfectant

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	(POT) incubation procedure recommendation 2.4. Silkworm larvae are fed based on ***Package Of Technology (POT) feeding procedure*** 2.5. Bed ***disinfectant*** is applied based on Package Of Technology (POT) feeding procedure 2.6. 4th instar silkworm larvae are packed and delivered based on ***Package Of Technology (POT) delivery standard***	bed 2.6. Preparation and distribution of 4th instar SW larvae	2.6. Preparing and distributing of 4th instar SW larvae
3. Prepare rearing house tools and implements for late age silkworm	3.1. Resources for late age silkworm rearing are evaluated based on Standard Operating Procedure (SOP) 3.2. Rearing house tools and Implements are disinfected based on Standard Operating Procedure (SOP) disinfection standard 3.3. Hazardous wastes are disposed based on Good Agricultural Practices (GAP)	3.1. Evaluation of the required resources for late age silkworm 3.2. Disinfection of rearing house tools and implements 3.3. Procedures on chemical container disposal	3.1. Identifying the required resources for rearing late age silkworm 3.2. Following the procedure in disinfecting rearing house tools and implements by applying OSHS during the disinfection 3.3. Practicing GAP on waste Disposal

ELEMENT	PERFORMANCE CRITERIA *Italicized terms* are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Rear late age silkworm	4.1. Mulberry leaves are harvested based on ***Package Of Technology (POT) harvesting procedure*** 4.2. Silkworm are fed based on Package Of Technology (POT) feeding procedure 4.3. Bed disinfectant is applied and bed cleaning is performed according to workplace procedures 4.4. Matured silkworm larvae are picked and transferred to montages based on ***Package Of Technology (POT) mounting procedure*** 4.5. Cocoons are harvested based on ***Package Of Technology (POT) cocoon harvesting procedure***	4.1. Procedures in Harvesting mulberry leaves 4.2. Importance of bed cleaning and spacing and procedure in applying bed disinfectant requirements in feeding SW larvae 4.3. Identification and collection of matured silkworm larvae 4.4. Procedure in mounting matured silkworm larvae 4.5. Procedure in harvesting cocoons	4.1. Implementing the procedure in the rearing of healthy late age silkworm 4.2. Applying bed disinfectant 4.3. Applying feeding procedure 4.4. Identifying and picking of matured silkworm larvae 4.5. Implementing procedure in mounting matured silkworm larvae 4.6. Implementing proper harvesting of cocoon

RANGE OF VARIABLES

VARIABLE	SCOPE
1. Resources	May include: 1.1. Tools: 1.1.1. Crosscut saw 1.1.2. Grass Cutter 1.1.3. Hammer 1.1.4. Pliers 1.1.5. Dipping Bath 1.1.6. Rearing Rack 1.1.7. Rearing Trays 1.1.8. Ant Wells 1.1.9. Basin 1.1.10. Nets 1.1.11. Floor Mop 1.1.12. Dust Pan 1.1.13. Water Hose 1.2. Equipment: 1.2.1. Grass cutter 1.2.2. Water pump 1.2.3. Power Sprayer 1.2.4. Wheel Barrow 1.3. Materials 1.3.1. Lumber 1.3.2. GI Sheet 1.3.3. Nails 1.3.4. Cement 1.3.5. Hollow Blocks 1.3.6. Sand and Gravel 1.3.7. Electric Wires
2. Standard Operating Procedure (SOP)	May include: 2.1. Chemicals 2.2. Calcium Hypochlorite 2.3. Formalin 2.4. Detergent 2.5. Burnt rice hull
3. Good Agricultural Practices (GAP)	May include: 3.1. Washing 3.2. Burning 3.3. Burial
4. Package of Technology (POT) incubation procedure	May include: 4.1. 1^{st} – 10^{th} day: 4.2. 16 hours light 4.3. 8 hours dark 4.4. 25° C – 7° C 4.5. 75-80RH 4.6. Total dark (black boxing) 10-12days

VARIABLE	SCOPE
5. Package of Technology (POT) feeding procedures	May include: 5.1. Whole leaf 5.2. Branch feeding 5.3. Frequency of feeding: 5.3.1. 5AM 5.3.2. 10AM 5.3.3. 3PM 5.3.4. 5PM
6. Disinfectant	May include: 6.1. Pure lime 6.2. Fungicide 6.3. Paraformaldehyde 6.4. Bemzoic acid
7. Package of Technology (POT) delivery standard	May include: 7.1. Packaging materials 7.2. Time of delivery 7.3. Temperature requirement
8. Package of Technology (POT) harvesting procedure	May include: 8.1. Branch harvesting 8.2. Leaf plucking: 8.2.1. 1st instar top leaves 1 to 3 8.2.2. 2nd instar 3 to 6 8.2.3. 3rd instar 5 to 8
9. Package of Technology (POT) mounting procedure	May include: 9.1. 6-7 days feeding 9.2. No. of larvae/ sq. ft.
10. POT cocoon harvesting procedure	May include: 10.1. 5 days after mounting 10.2. Early afternoon harvesting 10.3. Classification after cocoons (good, bad)

EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Prepared rearing house tools and implemented for young age silkworm larvae 1.2 Reared young age silkworm larvae 1.3 Prepared rearing house tools and implemented for late age silkworm 1.4 Reared late age silkworm
2. Resource Implications	The following resources should be provided: 2.1 Workplace location 2.2 Tools, equipment and materials relevant to the unit of competency 2.3 Specifications, standards and requirements relevant to the activities
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1. Direct Observation 3.2. Demonstration with oral questioning 3.3. Written exam
4. Context for Assessment	4.1 Competency may be assessed in workplace or in a simulated workplace setting 4.2. Assessment shall be observed while task is being undertaken whether individually or in group

GLOSSARY OF TERMS

- **Bed cleaning** — Should be done before or after molting to remove feces, dead silkworms, wastes, uneaten leaves and lites from the rearing bed. This provides sanitation for the silkworms and protects from toxic gases which may arise in the rearing bed.
- **Bed spacing** — The worms should be space evenly, once crowded may cause under nourishment or uneven development due to food shortage.
- **Brushing** — Is the process of gently and carefully separating the newly hatched larvae from the egg shell to egg shelf and transferring them to the rearing trays.
- **Cocoon** — A silky cage created by the silkworm larvae for protection in the pupal stage.
- **Cuttings** — A planting material from a healthy 6–8-month-old mulberry branch with a diameter of 1-2cm, 15-20cm length with 3-4 active buds.
- **Disinfectant** — A chemical substance on compound used to inactivate or destroy microorganisms.
- **Disinfection** — The process of washing the prepared cuttings with fungicide solution.
- **Fertilization** — Application of chemical or organic fertilizer to improve plant growth.
- **Harvesting** — Is the process of gathering of leaves either by plucking shoot cutting or branch cutting or combination.
- **Harvesting of cocoon** — Cocoons are harvested 5-6 days after spinning/mounting. Cocoons are separated from the good cocoons from the flimcy, stained and melted waste avoid deterioration of the quality of cocoons.
- **Incubation** — The incubation of silkworm eggs is a phase in protecting the activated silkworm eggs before rearing.
  To provide suitable environmental condition i.e. temperature and humidity for uniform development of embryo to achieve good hatching percentage.
- **IPM (Integrated Pest Management)** — Integrated Pest Management is the practice of controlling the population of pests thru biological, chemical or mechanical means.
- **Irrigation** — Application of water to supply soil moisture.
- **Larvae** — The active immature form of silkworm that undergo sine metamorphosis e.g. moulting.
- **Late Age** — Silkworm rearing from 4^{th} to 5^{th} instar larvae. The larvae are being fed with matured mulberry leaves.
- **Moulting** — Is the shedding of exoskeleton of the previous life stage without moulting a silkworm cannot grow.
- **Mountage** — A material/implement used for spinning cocoons by silkworms.
- **Mounting** — After 6-7 days of feeding, a decrease in the appetite of the silkworm will be observed, the body shrinks and becomes translucent. Pick worms which shows signs of maturity, put

them on the plastic corrugated cocooning frame on notary mountage for spinning.

- **Mulberry** Is a deciduous tree or shrub in the genus morus and is cultivated as sole food for silkworm.
- **Nursery bed** Planting media prepared with dimension of 1 meter x 10 meters x 30cm or any convenient length.
- **Pruning** The process of cutting mature branches to induce new shoots.
- **Rearing house** Place where silkworms are reared.
- **Rearing method** The process of feeding the right quantity of mulberry leaves to silkworms.
- **Sapling** An asexually propagated grown in nursery with a maturity of 4-6 months
- **Silkworm** Scientifically known as Bombyxmori L, is an insect with complete life cycle from egg, larvae, pupae and adult.
- **Silkworm eggs** Small, flat, ellipsoid materials laid by silkworm covered by hard chorion egg shell.
- **Silkworm rearing** The silkworms are looked after and are fed leaves from specific plants, mulberry plants.
- **Sorting** The separation of good from bad cocoons.
- **Variety** The diversification of characters in plants.
- **Young Age** Rearing of silkworm from brushing age to 3rd stage, the larvae are fed with tender-leaves.

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