

COMPETENCY STANDARDS

PILI PROCESSING LEVEL II



PROCESSED FOODS & BEVERAGES SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Luzon Expressway (SLEX), Taguig City, Metro Manila

*Technical Education and Skills Development Act of 1994
(Republic Act No. 7796)*

Section 22, “Establishment and Administration of the National Trade Skills Standards” of the RA 7796 known as the TESDA Act mandates TESDA to establish national occupational skill standards. The Authority shall develop and implement a certification and accreditation program in which private industry group and trade associations are accredited to conduct approved trade tests, and the local government units to promote such trade testing activities in their respective areas in accordance with the guidelines to be set by the Authority.

The Competency Standards (CS) serve as basis for the:

- 1 Institutional Competency assessment and training certification;
- 2 Registration and delivery of training programs; and
- 3 Development of curriculum and assessment instruments.

Each CS has 3 sections:

Section 1 **Definition of Competency Standards** - refers to the group of competencies that describes the different functions of the qualification.

Section 2 **The Competency Standards** - gives the specifications of competencies required for effective work performance.

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COMPETENCY STANDARDS FOR PILI PROCESSING LEVEL II

SECTION 1 PROCESSING LEVEL II

The **PILI PROCESSING LEVEL II** consists of competencies that a person must have to process pili nuts through sugar concentration, salting, and drying/dehydration. The task of packing the processed product and operating simple packing equipment such as sealer will be highlighted in this competency. The person must also have competencies in practicing the Food Safety Act 2013, cGMP, HACCP, OSHS, and 7S of Good Housekeeping, including following relevant environmental rules and regulations.

Likewise, several activities such as preparing equipment, tools, materials and utensils, raw materials, performing sugar-concentration, salting, drying and dehydration, packing products, and performing post-production activities are also included.

The Units of Competency comprising these Competency Standards 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
PFB751210	Apply food safety and sanitation
PFB751211	Use standard measuring devices/instruments
PFB751212	Use food processing tools, equipment, and utensils
PFB751213	Perform mathematical computation
PFB751214	Implement Good Manufacturing Practice Procedure (GMPP)
PFB751215	Implement environmental policies and procedures
Code	CORE COMPETENCIES
AB-PFB0506200751301	Process pili by sugar concentration
AB-PFB0506200751302	Process pili by salting
AB-PFB0506200751303	Process pili by drying and dehydration

A person who has achieved this Competency Standards is competent and may also be known by specific products:

☐ **Pili Processor**

☐ **Pili-Candy Maker**

SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common, and core units of competency required in **PILI PROCESSING 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 <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
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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 procedures for the location and storage of information are used 1.7 Personal interaction is carried out clearly and concisely	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 1.9 Basic business writing skills 1.10 Interpersonal skills in the workplace 1.11 Active-listening skills	1.1 Follow simple spoken language 1.2 Perform routine workplace duties following simple written notices 1.3 Participate in workplace meetings and discussions 1.4 Prepare work-related documents 1.5 Estimate, calculate and record routine workplace measures 1.6 Relate/ Interact with people of various levels in the workplace 1.7 Gather and provide basic information in response to workplace requirements
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
2. Perform duties following workplace instructions	2.1 Written notices and instructions are read and interpreted by organizational guidelines 2.2 Routine written instructions are followed based on established procedures 2.3 Feedback is given to the workplace supervisor based on 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 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 2.10 Basic questioning/querying	2.1 Follow simple spoken instructions 2.2 Perform routine workplace duties following simple written notices 2.3 Participate in workplace meetings and discussions 2.4 Complete work-related documents 2.5 Estimate, calculate and record routine workplace measures 2.6 Relate/ Respond to people of various levels in the workplace 2.7 Gather and provide information in response to workplace requirements 2.8 Skills in reading for information 2.9 Skills in locating
3. Complete relevant work-related documents	3.1 A range of forms relating to conditions of employment are	3.1 Effective verbal and non-verbal communication	3.1 Complete work-related documents

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	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	3.2 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 3.7 Effective record-keeping skills	3.2 Apply operations of addition, subtraction, division, and multiplication 3.3 Gather and provide information in response to workplace requirements

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 the 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.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
1. Describe team role and scope	1.1 The role and objective of the team are 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 Communicate with others, appropriately consistent with the culture of the workplace 1.2 Develop ways to improve work structure and perform 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 are 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 Communicate with others, appropriately consistent with the culture of the workplace 2.2 Develop ways to improve work structure and perform respective roles in the group or organization
3. Work as a team member	3.1 Effective and appropriate forms of communication are used and interactions are undertaken with team members based on company practices. 3.2 Effective and appropriate	3.1 Communication Process 3.2 Workplace communication protocol 3.3 Team Planning and decision making 3.4 Team thinking	3.1 Communicate appropriately, consistent with the culture of the workplace 3.2 Interact effectively with others 3.3 Decide as an individual and as

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	contributions made to complement team activities and objectives, based on workplace context 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	3.5 Team roles 3.6 Process of team development 3.7 Workplace context	a group using group think strategies and techniques 3.4 Contribute to Resolution of issues and concerns

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

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 are being undertaken whether individually or in group

UNIT OF COMPETENCY : SOLVE/ADDRESS GENERAL WORKPLACE PROBLEMS

UNIT COD : 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 <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE AND ATTITUDE	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 Identify current industry hardware and software products and services 1.2 Identify current industry maintenance, services and helpdesk practices, processes and procedures. 1.3 Identify current industry standard diagnostic tools 1.4 Describe common malfunctions and resolutions. 1.5 Determine the root cause of a routine malfunction

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
2. Look for solutions to routine problems	2.1 Potential solutions to the problem are identified 2.2 Recommendations about possible solutions are 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 Identify current industry hardware and software products and services 2.2 Identify services and helpdesk practices, processes and procedures. 2.3 Identify operating system 2.4 Identify current industry standard diagnostic tools 2.5 Describe common malfunctions and resolutions. 2.6 Determine 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 Produce documentation that recommends solutions to problems 3.2 Follow established procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Problems/Procedural Problem	May include but not limited to: Routine/non – routine processes and quality problems Equipment selection, availability and failure Teamwork and work allocation problem Safety and emergency situations and incidents 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	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	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 AND ATTITUDE	REQUIRED SKILLS
1. Manage one's emotion	1.1 <i>Self-management strategies</i> 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 <i>unpleasant situation</i> 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 Manage properly one's emotions and recognizing situations that cannot be changed and accept them and remain professional 1.2 Develop self-discipline, working independently and showing initiative to achieve personal and career goals 1.3 Show confidence, and resilience in the face of setbacks and frustrations and other negative emotions and unpleasant situations in the workplace
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	2.1 Basic SWOT analysis 2.2 Strategies to improve one's attitude in the workplace 2.3 Gibbs' Reflective Cycle/Model (Description, Feelings,	2.1 Use the basic SWOT analysis as self-assessment strategy 2.2 Develop reflective practice through realization of limitations, likes/

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE AND ATTITUDE	REQUIRED SKILLS
	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	Evaluation, Analysis, Conclusion, and Action plan)	dislikes; through showing of self-confidence 2.3 Demonstrate 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 are maintained.	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 Stephen Covey, transactional analysis, psycho-spiritual concepts)	3.1 Perform effective communication skills – reading, writing, conversing skills 3.2 Show affective skills – flexibility, adaptability, etc. 3.3 Assess one self

RANGE OF VARIABLES

VARIABLE	RANGE
1. Self-management strategies	May include but not limited to: 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 but not limited to: 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	4.1. 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.

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 <i>Opportunities for improvement</i> are identified proactively in own area of work. 1.2 <i>Information</i> 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 Identify opportunities to improve and to do things better. Involvement. 1.2 Identify the positive impacts and the challenges of change and innovation. 1.3 Identify examples of the types of changes that are within and outside own scope of responsibility
2. Discuss and develop ideas with others	2.1 <i>People who could provide input</i> 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 <i>Critical inquiry method</i> is used to discuss and develop ideas with others.	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 Identify opportunities to improve and to do things better. Involvement. 2.2 Identify the positive impacts and the challenges of change and innovation. 2.3 Provide examples of the types of changes that are within and outside own scope of responsibility 2.4 Communicate 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	3.1 Roles of individuals in suggesting and making improvements.	3.1 Identify opportunities to improve and to do things better. Involvement. 3.2 Identify the positive impacts and the

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	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.	3.2 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.	challenges of change and innovation. 3.3 Provide examples of the types of changes that are within and outside own scope of responsibility. 3.4 Communicate ideas for change through small group discussions and meetings. 3.5 Demonstrate skills in analysis and interpretation of data.

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	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.

VARIABLES	RANGE
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	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 Describe organisational protocols relating to client liaison 1.2 Protect confidentiality 1.3 Describe accuracy 1.4 Compute business mathematics and statistics 1.5 Describe data analysis techniques/procedures 1.6 Report requirements to a range of audiences 1.7 State legislation, policy and procedures relating to the conduct of evaluations 1.8 State 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 Compute business mathematics and statistics 2.2 Describe data analysis techniques/ procedures 2.3 Report requirements to a range of audiences 2.4 State legislation, policy and procedures relating to the conduct of evaluations 2.5 State organisational values, ethics and codes of conduct
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 Describe data analysis techniques/ procedures 3.2 Report requirements to a range of audiences 3.3 State legislation, policy and procedures relating to the conduct of evaluations 3.4 State 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	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	4.1 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

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 <i>OSH requirements, regulations, policies and procedures</i> are identified in accordance with workplace policies and procedures 1.2 OSH activity non-conformities are conveyed to <i>appropriate personnel</i> 1.3 <i>OSH preventive and control requirements</i> 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 materials, tools and equipment are acquired in accordance with	2.1. Resources necessary to execute hierarchy of controls 2.2. General OSH principles 2.3. Work standards and procedures 2.4. Safe handling procedures of tools, equipment and materials 2.5. Different OSH control measures	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 and equipment identification skills

ELEMENTS	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
	workplace policies and procedures 2.3. Required OSH materials, tools and equipment are arranged/ placed in accordance with OSH work standards		
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 <i>Non-compliance work activities</i> are reported to <i>appropriate personnel</i>	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 3.3 Interpersonal skills 3.4 Troubleshooting skills 3.5 Critical thinking skills 3.6 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 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

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, 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	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 of resource utilization	2.1 Potential causes of inefficiency and/or ineffectiveness are listed 2.2 Causes of inefficiency and/or ineffectiveness are identified through deductive reasoning 2.3 Identified causes of inefficiency and/or ineffectiveness are validated thru established environmental procedures	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
3. Convey inefficient and ineffective environmental practices	3.1 Efficiency and effectiveness of resource utilization are reported to	3.1 Appropriate Personnel to address the environmental hazards	3.1 Written and Oral Communication Skills 3.2 Critical thinking

	<i>appropriate personnel</i> 3.2 Concerns related resource utilization are discussed with appropriate personnel 3.3 Feedback on information/ concerns raised are clarified with appropriate personnel	3.2 Environmental corrective actions	3.3 Problem Solving 3.4 Observation Skills 3.5 Practice Environmental Awareness
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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 effectiveness 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 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
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 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 communicated to appropriate person 2.3 Cost-conscious habits in resource utilization are communicated based on industry standards.	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-consciousness	2.1 Communication skills 2.2 Complying with quality procedures 2.3 Follow workplace communication protocol

		2.3.4 Safety-consciousness 2.3.5 Resourcefulness	
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 entrepreneurial mindset to workplace productivity 3.6 Ways in fostering entrepreneurial attitudes: 4. Quality-consciousness 5. Safety-consciousness	3.1 Implement preservation and optimizing workplace resources 3.2 Observe judicious use of workplace tools, equipment and materials 3.3 Make constructive contributions to office operations 3.4 Sustain 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

EVIDENCE GUIDE

3.1 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.
3.2 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
3.3 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 FOOD SAFETY AND SANITATION

UNIT CODE : PFB751210

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to apply food safety and sanitation in the workplace

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Wear Personal Protective Equipment	1.1 Personal protective equipment is checked according to <i>manufacturer's specifications</i> 1.2 <i>Personal Protective Equipment</i> is worn according to the job requirement	SCIENCE 1.1 Ergonomics and fit of PPE 1.2 Properties of PPE Materials TECHNOLOGY 1.1 Monitoring of PPE materials 1.2 Sustainable PPE manufacturing practices ENVIRONMENT CONCERNS 1.1 Life Cycle Assessment of PPE 1.2 Environmental impact of PPE materials 1.3 Public awareness concerns of using PPEs MATHEMATICS 1.1 Environmental footprint analysis 1.2 Calculating material strength of PPEs COMMUNICATION 1.1 Different PPEs and its uses 1.2 Communicating health risks 1.3 Writing clear	1.1 Checking PPE 1.2 Practicing GMP

		instructions for PPE use	
2. Observe Personal Hygiene and Good Grooming	2.1 Personal hygiene and good grooming is practiced in line with <i>workplace health and safety requirements</i>	SCIENCE 2.1 Analyzing injury and illness data 2.2 Understanding occupational diseases 2.3 Response to workplace accidents 2.4 Chemical properties of personal care and products TECHNOLOGY 2.1 Designing ergonomic workstations ENVIRONMENT CONCERNS 2.1 Implementing health-conscious workplace policies 2.2 Hazardous waste disposal COMMUNICATION 2.1 Writing safety guidelines 2.2 Reporting safety incidents 2.3 Hygiene practices	2.1 Exercising health and safety practices 2.2 Practicing good grooming and personal hygiene practices

3. Implement Food Sanitation Practices	3.1 Sanitary food handling practices are implemented in line with workplace sanitation regulations 3.2 Safety measures are observed in line with workplace safety practices.	SCIENCE 3.1 Understanding food pathogens 3.2 Chemical properties of sanitizers TECHNOLOGY 3.1 Eco-friendly cleaning and sanitizing solutions and products 3.2 Food safety training programs ENVIRONMENT CONCERNS 3.1 Waste management in food production 3.2 Environmental impact of cleaning chemicals and products MATHEMATICS 3.1 Calculating chemical concentrations 3.2 Analyzing disease transmission COMMUNICATION 3.1 Food safety guidelines 3.2 Foodborne illnesses	3.1 Managing wastes 3.2 Implementing sanitary food handling practices 3.3 Practicing workplace safety
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Render Safety Measures and First Aid Procedures	4.1 Safety measures are applied according to workplace rules and regulations 4.2 First aid procedures are applied and coordinated with concerned personnel according to workplace standard operating procedures.	SCIENCE 4.1 Workplace and environmental hazards TECHNOLOGY 4.1 Safety hazards 4.2 Safety monitoring devices ENVIRONMENT CONCERNS 4.1 Emergency response procedures 4.2 Natural disaster preparedness MATHEMATICS 4.1 Calculating vital signs COMMUNICATION 4.1 Emergency response plan 4.2 First aid response and treatment	4.1 Applying safety measures 4.2 Applying first aid treatment 4.3 Practicing PPE 4.4 Coordinating with concerned personnel
5. Implement housekeeping activities	5.1 Work area and surroundings are cleaned in accordance with workplace health and safety regulations 5.1 Waste is disposed of according to the organization's waste disposal system 5.2 Hazards in the work area are recognized and reported to designated personnel according to workplace procedures	SCIENCE 5.1 Understanding properties of physical and chemical hazards 5.2 Workplace and environmental hazards TECHNOLOGY 5.1 Safety training programs ENVIRONMENT CONCERNS 5.1 Waste Management	5.1 Implementing housekeeping activities 5.2 Practicing proper waste disposal 5.3 Coordinating skills

		COMMUNICATION 5.1 Safety procedures and safety protocols 5.2 Hazard assessment reports	
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Manufacturer's Specifications	May include: 1.1 Handling 1.2 Operating 1.3 Discharge Label 1.4 Reporting 1.5 Testing 1.6 Positioning 1.7 Refilling
2. Personal Protective Equipment	May include: 2.1 Apron/laboratory gown 2.2 Mouth masks 2.3 Gloves 2.4 Rubber boots/safety shoes 2.5 Head gears such as caps, hair nets, earl plug
3. Workplace Health and Safety Requirements	May include: 3.1 Health/Medical Certificate 3.2 DOLE requirements 3.3 BFAD requirements 3.4 Personal Hygiene and good grooming 3.5 Plant Sanitation and waste management
4. Safety Measures	May include: 4.1 Labeling of chemicals and other sanitizing agents 4.2 Installation of firefighting equipment in the work area 4.3 Installation of safety signage and symbols 4.4 Implementation of 5S in the work area 4.5 Removal of combustible material in the work area
5. First Aid Procedures	May include: 5.1 Mouth to mouth resuscitation 5.2 CPR 5.3 Application of tourniquet 5.4 Applying pressure to bleeding wounds or cuts 5.5 First aid treatment for burned victims
6. Hazards	May include: 6.1 Physical 6.2 Biological 6.3 Chemical

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Cleaned, checked and sanitized personal protective equipment 1.2 Practiced proper personal hygiene and good grooming 1.3 Implemented workplace food safety practices 1.4 Applied first aid measures to victims 1.5 Implemented good housekeeping activities in the work area
2. Resource implications	The following resources should be provided: 2.1 Work area/station 2.2 First Aid Kit 2.3 PPE relevant to the activities 2.4 Fire extinguisher 2.5 Stretcher 2.6 Materials, tools, and equipment relevant to the unit of competency
3. Method of assessment	Competency may be assessed through: 3.1 Demonstration with questioning 3.2 Written Examination 3.3 Interview
4. Context of assessment	4.1. Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY : USE STANDARD MEASURING DEVICES AND INSTRUMENTS

UNIT CODE : PFB751211

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to use standard measuring devices, instruments in the workplace

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify Standard Measuring Devices and Instruments	1.1 <i>Standard measuring devices and instruments</i> are identified according to the manufacturer's specifications 1.2 Devices and instruments for measuring are properly checked, sanitized and calibrated prior to use	SCIENCE 1.1 Defects and breakages of measuring devices and instruments 1.2 Principles of measurements and units 1.3 Calibration of devices and instruments TECHNOLOGY 1.1 Specifications and functions of measuring devices and instruments 1.2 Procedures in sanitizing, calibrating and stowing equipment and instruments MATHEMATICS 1.1 Analyzing measurement errors COMMUNICATION 1.1 Safe handling of measuring devices and	1.1 Communication skills 1.2 Performing Sanitary handling of devices and instruments 1.3 Calibrating skills

		1.2 instruments Interpretat ion of measure ment results	
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2. Review the Procedures in Using Standard Measuring Devices and Instruments	2.1 Procedures in using the <i>standard measuring devices</i> and instruments are recalled according to manufacturer's specifications 2.2 Printed procedures/ brochures/ catalogues are consulted according to specified <i>food processing methods</i>	SCIENCE 2.1 Understanding food processing methods TECHNOLOGY 2.1 Procedures in using different standard measuring devices 2.2 Different food processing technologies ENVIRONMENT CONCERNS 2.1 Waste reduction in food processing MATHEMATICS 2.1 Statistical process control COMMUNICATION 2.1 Interpretation of procedures manual 2.2 Food processing protocols	2.1 Reading and following printed manuals and brochures 2.2 Using standard measuring devices
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Follow Procedures of Using Measuring Devices and Instruments	3.1 Methods/practices of using measuring devices and instruments are strictly observed according to manufacturer's specifications and workplace requirements 3.2 Measuring devices and instruments are cleaned, wiped dry and stowed after use to ensure conformity with workplace requirements	SCIENCE 3.1 Cleaning protocol of measuring devices and instruments TECHNOLOGY 3.1 Procedures for cleaning, and stowing equipment and instruments ENVIRONMENT CONCERNS 3.1 Waste reduction and recycling in cleaning MATHEMATICS 3.1 Calculating cleaning efficiency COMMUNICATION 3.1 Communicating safety precautions in cleaning	3.1 Applying methods/practices in using measuring devices and instruments 3.2 Cleaning and stowing measuring devices and instruments

RANGE OF VARIABLES

VARIABLE	RANGE
1. Standard Measuring Devices	May include: 1.1 Weighing scales and balances of various capacities and sensitivities 1.2 Measuring cups of varying capacities for dry ingredients 1.3 Measuring cups of varying capacities for liquid ingredients
2. Standard Measuring Instruments	May include: 2.1 Salinometer 2.2 Thermometers of varying temperature range (0-300 C) 2.3 Refractometer of varying range (0 – 90 B) 2.4 Glasswares like cylinders, beakers, flasks) of varying graduations
3. Food Processing Methods	May include: 3.1 Process foods by Salting, Curing and Smoking 3.2 Process foods by Fermentation and Pickling 3.3 Process foods by Canning and Bottling 3.4 Process foods by Sugar Concentration 3.5 Process foods by Drying and Dehydration

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified, prepared and calibrated standard measuring devices and instruments 1.2 Followed correctly the procedures in using standard measuring devices and instruments 1.3 Followed proper cleaning and sanitizing and stowing procedures of measuring devices and equipment before and after use
2. Resource implications	The following resources should be provided: 2.1 Work area/station 2.2 Materials, tools and equipment relevant to the Unit of Competency
3. Methods of Assessment	Competency may be assessed through: 3.1 Demonstration with questioning 3.2 Written examination 3.3 Interview
4. Context of Assessment	4.1. Competency may be assessed individually in the actual workplace or through an accredited institution

UNIT OF COMPETENCY: USE FOOD PROCESSING TOOLS, EQUIPMENT AND UTENSILS

UNIT CODE : PFB751212

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude required to operate food processing tools, equipment and instruments in the workplace.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms are elaborated in the Range of Variables</i>	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Perform pre-operation activities	1.1 Appropriate tools and equipment/utensils are assembled according to food processing method 1.2 Food processing tools and equipment/utensils are inspected and checked according to manufacturer's specifications 1.3 Food processing equipment is set up, adjusted and readied according to job requirements	SCIENCE 1.1 Protocols for setting up food processing equipment 1.2 Understanding mechanical principle of food processing equipment TECHNOLOGY 1.1 Reading of instructional/manual acturer's manual ENVIRONMENT CONCERNS 1.1 Energy efficiency in equipment operation MATHEMATICS 1.1 Environmental Footprints Analysis COMMUNICATION 1.1 Safety precautions	1.2 Assembling equipment/ utensils 1.3 Inspecting and check condition of equipment/ machines 1.4 Setting-up and adjust food processing equipment 1.5 Reporting equipment/ machine, tools, instruments breakdown and recording same in standard forms 1.6 Communication skills

2. Operate food processing equipment	2.1 Food processing equipment is switched on according to <i>manufacturer's specifications</i> 2.2 Performance of food processing equipment is checked to ensure conformity with specified output 2.3 Operation of food processing equipment is managed to achieve planned outcomes 2.4 Minor trouble shooting on food processing tools, equipment and utensils is performed when necessary	SCIENCE 2.1 Understanding operational protocols TECHNOLOGY 2.1 Research in Equipment Functionality 2.2 Reading and following the manufacturer's manual ENVIRONMENT CONCERNS 2.1 Waste reduction strategies in operating equipment MATHEMATICS 2.1 Calculating optimal processing and utilization time of equipment COMMUNICATION 2.1 Standard operating procedures (SOPs) for food processing equipment	2.1 Inspecting and checking condition of equipment/machines 2.2 Performing minor troubleshooting
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3.Perform post-operation activities	3.1 Food processing equipment is switched off and unplugged after operation in accordance with manufacturer's specifications 3.2 Food processing tools, equipment and instruments are cleaned, sanitized and stowed as required according to manufacturer's specifications and workplace policies and regulations 3.3 Minor preventive maintenance on equipment is performed in line with organization's maintenance system 3.4 Main machine parts are inspected and checked in line with organization's policy 3.5 Condition of machine is monitored to ensure serviceability in accordance with workplace rules and regulations	SCIENCE 3.1 Analysis of product quality post-operation 3.2 Condition monitoring of equipment TECHNOLOGY 3.1 Equipment wear and tear 3.2 Maintenance schedule of equipment MATHEMATICS 3.1 Downtime analysis of equipment COMMUNICATION 3.1 Inspection and Maintenance Reports	3.2 Shutting down food processing equipment 3.3 Sanitizing, cleaning and stowing measuring devices and instruments 3.4 Checking main machine parts 3.5 Performing minor preventive maintenance 3.6 Monitoring machine condition 3.7 Accomplishing monitoring checklist 3.8 Wearing PPE 3.9 Applying OSHS 3.10 Performing regular maintenance
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RANGE OF VARIABLES

VARIABLES	RANGE
1. Food Processing Methods	May include: 1.1 Salting 1.2 Curing 1.3 Smoking 1.4 Fermentation 1.5 Pickling 1.6 Canning 1.7 Bottling 1.8 Sugar concentration 1.9 Drying 1.10 Dehydration
2. Food Processing Tools, Equipment and Utensils	May include: 2.1 Tools ○ Cutting implements such as: ○ Knives ○ Slicer ○ Vegetable cutter ○ Cutter ○ Peeler ○ Measuring spoons and cups ○ Scales ○ wire basket ○ Blow torch ○ steam jacketed kettle ○ lifter ○ Exhaust box ○ Cooking tools like: ○ Saucepans ○ Non-stick pan ○ Containers for Fermentation ○ large stoneware crocks ○ food-grade plastic containers ○ large glass jars ○ a heavy plate or glass lid that fits down inside the container

VARIABLES	RANGE
	2.2 Equipment, - o Cold storage equipment like: - o refrigerators - o Chiller - o Smoke house - o Food processor - o Sealers (can & plastic) - o Jack lifts - o Soaking vat - o Meat grinder/chopper - o Meat slicer - o Sausage stuffer - o Vacuum packaging machine machine - o Machine sealer - o Soaking container - o Grinder - o Enamel kettle/vat - o Freezer - o Oven - o Pressure cooker - o Plastic protect cap sealer - o wheelers - o Stove/burner - o Tumbler - o Octo clam - o Trolleys - o Impulse sealer - o blanching - o Fermentation vat - o Sterilizer mixer 2.3 Apparatus/Instruments - o Salinometer - o Weighing scales of varying capacities & sensitivities - o Refractometer - o Politer - o Polyscalers - o Jelly thermometer - o Candy thermometer 2.4 Utensils - o Kitchen utensils like: - o Casserole - o Colanders - o Food tongs - o Wooden ladle - o Chopping boards - o Mixing bowls - o Spoon ladder - o Wooden spoon - o Bowls made from: - o Stoneware - o Aluminum - o Unchipped enamelware. - o Glass - o Stainless steel - o Funnel - o Strainer - o Strainers - o Exhauster - o Juice extractor - o Steamer - o Basting spoons paddle - o Sorting tray - o Smoking trays - o Utility trays - o Food tray
3. Manufacturer's Specifications	May include: 3.1 Handling requirements 3.2 Operating requirements

VARIABLES	RANGE
	3.3 Discharge Label 3.4 Reporting 3.5 Testing 3.6 Positioning 3.7 Refilling
4. Minor Preventive Machine Maintenance	May include:- 4.1 Machine temperature 4.2 Hydraulic fluid 4.3 Wear and surface condition 4.4 Crack 4.5 Leak detection 4.6 Vibration 4.7 Corrosion/erosion 4.8 Electric insulation
5. Condition of Machine	May include: 5.1 Serviceable 5.2 Repairable 5.3 Defective

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Assembled, inspected, checked and sanitized appropriate tools and equipment/instruments 1.2 Set-up, adjusted and readied tools and equipment and instruments according to requirements 1.3 Operated and monitored performance of equipment to ensure specified output 1.4 Performed post operation activities 1.5 Performed minor trouble shooting on food processing tools, equipment and utensils
2. Methods of Assessment	Competency in this unit must be assessed through: 2.1 Direct observation and questioning of a candidate operating food processing tools and equipment/instruments 2.2 Submission of written report on the performance and condition of equipment/machine, tools, instruments used.
3. Resource Implications	The following resources must be provided: 3.1 Work area/station 3.2 Materials, tools and equipment relevant to the Unit of Competency
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: PERFORM MATHEMATICAL COMPUTATIONS

UNIT CODE : PFB751213

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitude to perform mathematical computations in the workplace.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Gather and tabulate the recorded data	1.1 Records of <i>weights and measurements</i> of raw materials and ingredients are gathered and summarized according to workplace standard operating procedures 1.2 Records of weights and measurements of finished processed products are gathered and summarized according to workplace standard operating procedures 1.3 Summarized data are tabulated according to enterprise requirements	SCIENCE 1.1 Scientific method, units, and measurements 1.2 Basic Mathematical Operations TECHNOLOGY 1.1 Calibration of weighing equipment and measuring devices MATHEMATICS 1.1 Calculating unit conversion 1.2 Inventory management 1.3 Data summary and analysis COMMUNICATION 1.1 Documentation and Reporting 1.2 Record Keeping	1.1 Gathering data 1.2 Keeping of records 1.3 Summarizing and analyzing data 1.4 Basic Mathematical skills 1.5 Basic Accounting skills

2. Review the various formulations	2.1 Raw materials and ingredients and percentage formulations are checked/counter checked according to approved specifications and enterprise requirements 2.2 Finished products and percentage formulations are reviewed according to approved specifications and enterprise requirements	SCIENCE 2.1 Chemical formulations of raw materials and ingredients TECHNOLOGY 2.1 Understanding the selection of products and functionality of technological products ENVIRONMENT CONCERNS 2.1 Utilization of sustainable materials MATHEMATICS 2.1 Percentages and formulations of raw materials and ingredients and finished products COMMUNICATION 2.1 Data analysis and reporting	2.1 Checking percentages formulations of raw materials and ingredient 2.2 Reviewing percentages and formulations of finished products 2.3 Numeracy skills
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
3. Calculate production input and output	3.1 Data on raw material consumption and corresponding percentage equivalent are calculated in line with enterprise requirements 3.2 Data on actual spoilage and rejects and corresponding percentage equivalents are calculated according to enterprise requirements 3.3 Data on actual yields and recoveries and corresponding percentage equivalents are calculated according to enterprise requirements 3.4 All calculated data are recorded according to enterprise requirements	TECHNOLOGY 3.1 Production Processes MATHEMATICS 3.1 Data Analysis 3.2 Percentage and Formulation COMMUNICATION 3.1 Record keeping	3.2 Basic Mathematical skills 3.3 Recording skills

4. Compute production cost	4.1 <i>Costs of production</i> are computed according to organization's standard procedures 4.2 Computed costs of production are reviewed and validated according to organization's production requirements	SCIENCE 4.1 Cost estimation procedures MATHEMATICS 4.1 Calculation production cost COMMUNICATION 4.1 Reports on cost production costs	4.2 Basic Mathematical skills 4.3 Basic Accounting Skills 4.4 Reviewing and validating computed costs
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RANGE OF VARIABLES

VARIABLES	RANGE
1. Weights and Measurements	May include: 1.1 Gravimetric 1.2 Volumetric 1.3 Lengths, diameters, widths 1.4 Seam measurements 1.5 Hotness/coldness (temperature) 1.6 Concentrations of solutions
2. Costs of Production	May include: 2.1 Ingredient formulation 2.2 Percentage formulation 2.3 Conversion 2.4 Ratios and proportion 2.5 Spoilage and rejects and corresponding percentages 2.6 Recoveries and yields and corresponding percentages

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 2.1 Gathered the records of weights and measurements of raw materials/ingredients and finished processed products 2.2 Summarized and tabulated all raw data gathered 2.3 Calculated the production inputs and outputs 2.4 Computed the costs of production 2.5 Reviewed all formulations and concentrations of solutions according to specifications and standards of the enterprise
2. Methods of Assessment	Competency in this unit must be assessed through: 2.1 A combination of direct observation and questioning of a candidate computing costs of production 2.2 Submission of a written report showing a record of production data including raw data
3. Resource Implications	The following resources should be provided: 3.1 Work area/station 3.2 Materials relevant to recording and documentation of production data 3.3 Computer with printer and software 3.4 Calculator 3.5 Work table
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY: IMPLEMENT GOOD MANUFACTURING PRACTICE AND PROCEDURES

UNIT CODE : PFB751214

UNIT DESCRIPTOR : This unit covers the knowledge, skills and attitudes required to comply with relevant Good Manufacturing Practice (GMP) codes through the implementation of workplace GMP and quality procedures

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Identify requirements of GMP related to own work	1.1 Sources of information on GMP requirements are located 1.2 GMP requirements and responsibilities related to own work are identified	SCIENCE 1.1 Contamination events and performance improvement processes 1.2 Micro biological, physical and chemical contaminants 1.3 Manufacturing formula and and processing instruction TECHNOLOGY 1.1 GMP Requirements 1.2 Personal clothing and footwear requirements at work areas 1.3 Procedures and records 1.4 Basic properties, handling and storage	1.1 Planning and organizing work (time management) 1.2 Working with others and in teams 1.3 Practicing GMP 1.4 Following contamination investigation procedures

		requirements of raw materials, packaging components and final product ENVIRONMENT CONCERNS 1.1 GMP Codes of practice, policies and procedures 1.2 GMP Role of internal and external auditors 1.3 Use of personal clothing, storage and disposal requirement 1.4 GMP responsibilities and requirements relating to work role COMMUNICATION 1.1 Basic concepts of quality assurance 1.2 Recall and traceability procedures relevant to work role 1.3 Good documentation practices 1.4 Procedures for identifying or isolating materials or product of unacceptable quality	
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Observe personal hygiene and conduct to meet GMP requirements	2.1 Personal hygiene meets GMP requirements 2.2 Clothing is prepared, used, stored and disposed of according to GMP and workplace procedures 2.3 Personal movement around the workplace complies with area entry and exit procedures	SCIENCE 2.1 Material for Personal Hygiene TECHNOLOGY 2.1 PPE Control resource allocation and processes in the workplace 2.2 Good Manufacturing Practices (GMP) ENVIRONMENT CONCERNS 2.1 Workplace entry and exit procedures COMMUNICATION 2.1 Hygiene practices	2.1 Following workplace entry and exit procedures 2.2 Practicing OSHS 2.3 Practicing GMP

3. Implement GMP requirements when carrying out work activities	3.1 GMP requirements are identified 3.2 Work area, materials, equipment and product are routinely monitored to ensure compliance with GMP requirements 3.3 Raw materials, packaging components and product are handled according to GMP and workplace procedures 3.4 Workplace procedures to control resource allocation and process are followed to meet GMP requirements 3.5 Common forms of contamination are identified and appropriate control measures are followed according to GMP requirements 3.6 The workplace is maintained in a clean and tidy order to meet GMP housekeeping standard	SCIENCE 3.1 Different Contaminants TECHNOLOGY 3.1 Monitoring methods of work area, materials and equipment 3.2 Good Manufacturing Practices (GMP) ENVIRONMENT CONCERNS 3.1 Control resource allocation and processes in the workplace COMMUNICATION 3.1 Handling of raw materials, packaging components and product	3.1 Identifying GMP requirements 3.2 Monitoring routinely work area, materials equipment, and product 3.3 Handling of raw materials, packaging components and product 3.4 Maintaining cleanliness in the workplace
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
4. Participate in improving GMP	4.1 Processes, practices or conditions which could result in non-compliance with GMP are identified and reported according to workplace reporting requirements 4.2 Corrective action is implemented within the level of responsibility 4.3 GMP issues are raised with designated personnel	ENVIRONMENT CONCERNS 4.1 Non-compliance and corrective action in GMP COMMUNICATION 4.2 Corrective actions	4.1 Practicing GMP 4.2 Reporting workplace condition 4.3 Implementing corrective measures
5. Participate in validation processes	5.1 Validation procedures are followed to GMP requirements 5.2 Issues arising from validation are raised with designated personnel 5.3 Validation procedures are documented to meet GMP requirements	SCIENCE 5.1 Analyze issues documented requirements ENVIRONMENT CONCERNS 5.1 Issues arising from validation MATHEMATICS 5.1 Validation and Assessment Data COMMUNICATION 5.1 Validation procedures in GMP 5.2 Documentation of validation procedures	5.1 Following validation procedures 5.2 Reporting issues arising from validation 5.3 Documenting validation procedures

6. Complete workplace documentation to support GMP	6.1. Documentation and recording requirements are identified 6.2. Information is recorded according to <i>workplace reporting procedures</i> to meet GMP requirements	ENVIRONMENT CONCERNS 6.1 Quality and ventilation COMMUNICATION 6.1 Documentation and workplace reporting procedures in GMP	6.1. Keeping records 6.2. Recording information
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RANGE OF VARIABLES

VARIABLES	RANGE
1. Work Area GMP requirements may include:	1.1 Cleanliness and Hygiene 1.2 Controlled Environment 1.3 Organization and Orderliness 1.4 Equipment Maintenance and Calibration 1.5 Personnel Practices 1.6 Safety Measures 1.7 Documentation and Record-Keeping 1.8 Security
2. Workplace reporting procedures	2.1 Identification reporting channel 2.2 Types of reports 2.3 Reporting methods 2.4 Timeliness 2.5 Confidentiality and Anonymity 2.6 Investigation Process 2.7 Protection from Retaliation 2.8 Training awareness 2.9 Feedback mechanism 2.10 Continuous Improvement

EVIDENCE GUIDE

1. Critical aspects of Competency	Assessment requires evidences that the candidate: 1.1 Located and followed workplace information relating to GMP responsibilities 1.2 Maintained personal hygiene consistent with GMP 1.3 Followed workplace procedures when moving around the workplace and/or from one task to another to maintain GMP 1.4 Used, stored and disposed of appropriate clothing/footwear as required by work tasks and consistent with GMP 1.5 Identified and reported situations that do or could compromise GMP
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	1.6 Applied appropriate control measures to control contamination 1.7 Recorded results of monitoring, and maintain records as required by GMP 1.8 Followed validation procedures within level of responsibility 1.9 Identified and responded to out-of-specification or unacceptable raw materials, packaging components, final or part processed product within level of responsibility 1.10 Followed procedures to isolate or quarantine non-conforming product 1.11 Handled, cleaned and stored equipment, utensils, raw materials, packaging components and related items according to GMP and workplace procedures 1.12 Maintained GMP for own work 1.13 Handled and/or disposed of out-of-specification or contaminated materials, packaging components/consumables and product, waste and recyclable material according to GMP as required by work responsibilities 1.14 Maintained the work area in a clean and tidy state 1.15 Identified and reported signs of pest infestation
2. Resource Implication	The following resources should be provided: 2.1 Workplace location and access to workplace policies 2.2 Materials relevant to the proposed activity and tasks
3. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods: 3.1 A combination of direct observation and oral questioning 3.2 Written report 3.3 Written Test Portfolio
4. Context of Assessment	Assessment should occur on the job or in a simulated workplace

UNIT OF COMPETENCY : IMPLEMENT ENVIRONMENTAL POLICIES AND PROCEDURES

UNIT CODE : PFB751215

UNIT DESCRIPTOR : This unit covers skills and attitudes required to implement environmental policies and procedures when carrying out work responsibilities

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Conduct work in accordance with environmental policies and procedures	1.1. Immediate work area is routinely checked to ensure compliance with environmental requirements 1.2. Hazards and unacceptable performance are identified, removed and/or reported to appropriate personnel according to workplace procedures 1.3. Workplace procedures and work instructions are followed 1.4. Where control requirements are not met, incidents are promptly reported and corrective action is taken 1.5. Measures used to minimize and handle waste are followed 1.6. Environmental data is recorded in required format according to workplace reporting requirements	SCIENCE 1.1 Environmental hazards and risks associated with the work 1.2 Basic concepts of hazard identification, risk assessment and control options 1.3 Identifying and responding to hazards 1.4 The difference between trade waste and storm water 1.5 drains TECHNOLOGY 1.1 Work procedures as they relate to environmental responsibilities 1.2 Procedures used to prevent or control environmental risks associated with own work	1.1 Planning and organize work (time management) 1.2 Working with others and in teams 1.3 Practicing environmental skills environmental skills

		ENVIRONMENT CONCERNS 1.1 Workplace approach to managing environmental issues 1.2 Responsibilities of self and employer to manage environmental issues on site 1.3 Consequences of inappropriate waste handling and disposal COMMUNICATION 1.1 Sources of advice on environmental issues in the workplace 1.2 Procedures used to handle and dispose of waste 1.3 Impact of work practices on resource utilization and wastage 1.4 Procedures for responding to unplanned incidents such as spills and leaks 1.5 Emergency response system and procedures 1.6 Consultative processes in the workplace for raising issues/ suggestions on environmental issues	
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ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
2. Participate in improving environmental practices at work	2.1 Processes or conditions which could result in an unacceptable environmental outcome are identified and reported according to workplace reporting requirements. 2.2 Corrective action is taken in accordance with the environmental management and emergency response plans as required. 2.3 Contributions are made to participative arrangements for managing environmental issues in the workplace within workplace procedures and level of responsibility.	SCIENCE 2.1 Resource allocation 2.2 Improvement in environmental Practices ENVIRONMENT CONCERNS 2.1 Corrective action 2.2 Environmental responsibility COMMUNICATION 2.1 Unacceptable environmental outcomes 2.2 Emergency response plan 2.3 Report Preparation	2.1 Identifying and report unacceptable environmental outcomes 2.2 Implementing corrective actions 2.3 Participating in improvement of environmental practices 2.4 Practicing written communication skills

3. Respond to an environmental emergency	3.1 Emergency situations are identified and reported according to workplace reporting requirements 3.2 Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures	SCIENCE 3.1 Hazardous and toxic substances TECHNOLOGY ENVIRONMENT CONCERNS 3.1 Emergency Procedures COMMUNICATION 3.1 Emergency situations	3.1 Identify emergency situations 3.2 Follow emergency procedures 3.3 Practice written communication skills
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Hazards	1.1 Physical Hazards 1.2 Chemical Hazards 1.3 Biological hazards 1.4 Ergonomic Hazards 1.5 Fire and Electrical Hazards 1.6 Environmental Hazards 1.7 Biological Hazards

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Accessed and applied workplace information on environmental policies and procedures relating to own work 1.2 Fitted and used appropriate personal protective clothing and equipment 1.3 Checked own work area to identify environmental hazards 1.4 Reported hazards according to workplace procedure in a clear and timely manner 1.5 Followed work procedures to control or minimize environmental risk. This may include monitoring parameters set for environmental aspects such as airborne particulate, noise, and water quality. It may also include demonstrating use of emergency equipment according to work role requirements 1.6 Recorded environmental information as required by the environmental management program 1.7 Participated in processes to raise issues and suggestions to improve environmental issues management. This requires appropriate communication skills to structure and present information and interact with others 1.8 Followed procedures to collect, deposit, recycle and/or dispose of waste in own work area 1.9 Followed procedures to respond to environmental emergencies such as spills and emissions. This may include following procedures to alert the appropriate emergency services 1.10 Maintained housekeeping standards in work area
2. Resource Implication	The following resources should be provided: 2.1 Workplace location and access to workplace policies 2.2 Materials relevant to the proposed activity and tasks
3. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods: 3.1 A combination of direct observation and oral questioning 3.2 Written report 3.3 Written Test 3.4 Portfolio
4. Context of Assessment	4.1 Assessment should occur on the job or in a simulated workplace

CORE COMPETENCIES

UNIT OF COMPETENCY : **PROCESS PILI BY SUGAR CONCENTRATION**

UNIT CODE : **AB-PFB0506200751301**

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes required to process Pili by sugar concentration which include to prepare equipment, tools, materials and utensils, prepare the raw materials, pack sugar concentrated products and perform post- production activities.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare equipment, tools, materials and utensils	1.1 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS)	SCIENCE 1.1.1 Chemical reactions involved in the process of pili by sugar concentration. 1.1.2 Biological effects of exposure to chemicals used in the process. TECHNOLOGY 1.1.1. OSHS guidelines for the safe handling of equipment and materials. . ENVIRONMENT CONCERNS 1.1.1. Eco-friendly alternatives to chemical substances used in the process.	1.2.1.2 Practicing OSHS such as wearing PPE (Personal Protective Equipment) 1.2.1.3 Practicing cGMP, SSOP and 7S 1.2.1.4 Practicing sanitation in preparing various equipment, tools and utensils

	MATHEMATICS 2.2.1. Correct ratios of chemicals needed for the concentration process. COMMUNICATION 1.1.1. Safety procedures for the concentration process. 1.1.2. . OSHS compliance for workers involved in the concentration process.	
1.2 Equipment and tools are prepared by manufacturer's specifications	SCIENCE 1.2.1. Mechanical properties of tools used in the concentration process. TECHNOLOGY 1.2.1. Inspection of equipment for any faults or malfunctions before use. ENVIRONMENT CONCERNS 1.2.1. Energy-efficient options for equipment to reduce environmental impact MATHEMATICS 1.2.1 Appropriate tool sizes and quantities needed for the process. COMMUNICATION 1.2.1. Preparation of equipment	1.2.1.1. Inspecting and checking skills 1.2.1.2 Calibrating of weighing scales and quality control tools such as thermometer, and refractometer

		maintenance logs and schedules to ensure proper upkeep.	
1.3	<i>Kitchen utensils</i> are checked and sanitized in accordance with manufacturer's specifications.	SCIENCE 1.3.1. Microbiological risks associated with utensil contamination. TECHNOLOGY 1.3.1. Cleaning systems for utensils to ensure hygiene. MATHEMATICS 1.3.1. Inventory management systems for utensils to prevent shortages. COMMUNICATION 1.3.1. Standardized procedures for material handling and storage. 1.3.2. Proper utensil handling and sanitation practices.	1.3.1.1. Recording and reporting the condition and defects of tools, utensils 1.3.1.2. Checking and sanitizing kitchen utensils
1.4	<i>Processing materials</i> are sourced-out and made available according to work requirements.	SCIENCE 1.4.1. Chemical properties of materials used in the concentration process, such as solubility and reactivity. TECHNOLOGY 1.4.1. Analysis of composition of processing materials ENVIRONMENT	1.4.1.1. Sourcing out of processing materials 1.4.1.2. Practicing sanitation in preparing various equipment, tools and utensils 1.4.1.3. Maintaining various equipment, tools and utensils such as cleaning and sanitizing 1.4.1.4. Sourcing

		CONCERNS 1.4.1. Waste Reduction Strategies COMMUNICATION 1.4.1. Chemical Properties of Material 1.4.2. Sustainable Sourcing Practices	quality supplies and materials according to specifications
2. Prepare the raw materials	2.1 Raw materials are sorted and graded in accordance with product specifications and standards.	SCIENCE 2.1.1. Physical and chemical properties of raw materials, such as moisture content and composite. MATHEMATICS 2.1.1. Metrics to identify areas for improvement and cost savings of raw materials COMMUNICATION 2.1.1. Sources of raw materials	2.1.1.1. Demonstrating on how to identify acceptable quality raw materials and other ingredients used to preserve pili nut by sugar concentration 2.1.1.2. Sorting and grading of raw materials
	2.2 Sorted raw materials are prepared according to required forms and target finished products	TECHNOLOGY 2.2.1. Procedure for preparing raw materials ENVIRONMENT CONCERNS 2.2.1. Sorting and grading methods for raw materials COMMUNICATION 2.2.1. Identification of acceptable quality raw materials and other ingredients used to preserve pili nut by sugar concentration	2.2.1.1. Preparing sorted raw materials

2.3 Sorted pili nut are blanched to remove seed coat or testa	SCIENCE 2.3.1. Blanching 2.3.2. Procedure and Process 2.3.3. Methods for reducing water usage, minimizing wastewater discharge, and recycling byproducts. TECHNOLOGY 2.3.1 Blanching methods such as water bath, steam, or microwave techniques. ENVIRONMENT CONCERNS 2.3.1. Nutrient loss during blanching and potential solutions. MATHEMATICS 2.3.1. Blanching parameters to assess consistency. COMMUNICATION 2.3.1. Nutritional impact of blanching	2.3.1.1 Blanching pili nut according to required temperature
2.4 Blanched pili, nut are sorted, drained and prepared for cooking according to target products	SCIENCE 2.4.1. Physical properties of pili nuts TECHNOLOGY	2.4.1.1. Prepare sorted blanched pilinut according target product (peel, weigh, measure, scale, split and grind pilinut)

		2.4.1. Temperature and humidity control of pili nut for cooking ENVIRONMENT CONCERNS 2.4.1. Waste disposal and potential pollution from processing facilities. MATHEMATICS 2.4.1. Cooking times and temperatures based on nut size and moisture content. COMMUNICATION 2.4.1. Preparation of materials for cooking (peeling, weighing, measuring, scaling, splitting and grinding pili nut, etc)	2.4.1.2. Perform conversion 2.4.1.3. Clean and maintain various equipment, tools and utensils 2.4.1.4. Practice of sanitary food handling for raw materials preparations 2.4.1.5. Practice OSHS such as wearing of PPE
3. Cook sugar concentrates	3.1 Prepared materials in any forms are blended/combine/mix with sugar mixture	TECHNOLOGY 3.1.1. Cooking Mixtures and Kitchen Appliances used in Pili Processing ENVIRONMENT CONCERNS 3.1.1. Impact of Sugar Mixtures on Soil Health MATHEMATICS 3.1.1. Mixing Sugar Solutions: Ratios and Proportions COMMUNICATION 3.1.1. Sugar-Blended Pili Products	3.2.1.1. Perform blending/combining/mixing 3.2.1.2. Practice of sanitary food handling for raw materials preparations 3.2.1.3. Practice OSHS such as wearing of PPE 3.2.1.4. Use tools, utensils and equipment correctly

	3.2 Mixture is cooked according to required consistency	SCIENCE 3.2.1. Effects of Sugar Mixtures on Chemical Reaction TECHNOLOGY 3.3.1. Blending Sugar Mixtures in Food Processing COMMUNICATION 3.2.1. Desired consistency of sugar mixture 3.2.2. Glazing Methods	3.2.1.1. Apply glazing and sweetening and/or other preparation method
	3.1. Desired doneness is checked/tested using candy thermometer	SCIENCE 3.3.1. Understanding Heat: Thermodynamics and Candy Making TECHNOLOGY 3.3.1. The Candy Thermometer ENVIRONMENT CONCERNS 3.3.1. Sustainability in Candy Making MATHEMATICS 3.3.1. Temperature and calculation of candy thermometer COMMUNICATION 3.3.1. Candy Thermometer Readings in Pili Recipes	3.3.1.1. Read and interpret temperature and candy thermometer 3.3.1.2. Recording and reporting skills 3.3.1.3. Practice of sanitary food handling during cooking of sugar concentrates 3.3.1.4. Apply Halal and Kosher food processing guideline 3.3.1.5. Segregate and dispose of waste
4. Pack sugar concentrated products	4.1. Food safety practices are employed according to	SCIENCE 4.1.1. Understanding Microbial Hazards: Applying HACCP	4.1.1.1. Practice sanitary food handling during packing operations

	HACCP and cGMP	in Food Safety TECHNOLOGY 4.1.1 Technology in Food Safety: cGMP Compliance in Manufacturing ENVIRONMENT CONCERNS 4.1.1 Sustainability in Food Production: Environmental Impacts of HACCP and cGMP COMMUNICATION 4.1.1 Food Safety principles	4.1.1.2. Practice sanitaryfood handling during packing operations 4.1.1.3. Practice OSHS such as wearingof PPE SPactice cGMP,7S, SSOP, PNS and HACCP
	4.2. Work safety measures are applied in accordance with OSHS.	COMMUNICATION 4.2.1 Food handling practices for packing operations	4.2.1.1. Practice OSHS such as wearing of PPE 4.2.1.2. Maintain various equipment, tools and utensils such as cleaning and sanitizing 4.2.1.3. Source packing materials 4.2.1.4. Maintain packing areas and facilities
	4.3. Sugar concentrated products are packed and weighed in accordance with product specifications and required filling temperature	SCIENCE 4.3.1 The Science Behind Sugar Packing: Chemistry and Temperature Control TECHNOLOGY 4.3.1 Technology in Sugar Packaging COMMUNICATION 4.3.1 Standards in Sugar Packing	4.3.1.1 Pack sugar concentrated products

	4.4. Sugar concentrated products are sealed and labeled in accordance with product specifications	COMMUNICATION 4.4.1 Labeling information • Name of products • Net weight • Ingredients • Production/expiry date • Manufacturer's address • Allergen Program • Nutrition Facts 4.4.2 Sealing procedures and techniques 4.4.3 Sealing integrity/standards: • Checking headspace • Checking leakage	4.4.1.1 Label and seal skills for sugar concentrated products
	4.5. Air cooling is performed according to product requirements.	TECHNOLOGY 4.5.1 Understanding Air Cooling in Product Manufacturing COMMUNICATION 4.5.1 Importance of Air Cooling	4.5.1.1 Perform air cooling procedures
	4.6. Packing equipment is operated in accordance with instructions manual	SCIENCE 4.6.1 Mechanics of Packing Equipment TECHNOLOGY 4.6.1 Technology integration of packing equipment COMMUNICATION 4.6.1 Packing Equipment used in sugar concentrated products	4.7.1.2. Operate packing equipment such as sealer 4.7.1.3. Report of any equipment malfunction, product or process nonconformance during packing operations

	4.7. Finished product inspection is performed following quality control parameters	SCIENCE 4.7.1 Understanding finished product inspection ENVIRONMENT CONCERNS 4.7.1 Sustainable Practices in Product Inspection COMMUNICATION 4.7.2 Control Parameters	4.7.1.1 Inspect finished products for conformance to specifications 4.7.1.2. Record of finished products weights using enterprise forms/checklist
5. Perform post-production activities	5.1. Packed food products are incubated according to required storage period.	SCIENCE 5.1.1. Microbial Growth and Food Safety TECHNOLOGY 5.1.1. Technology in Food Storage ENVIRONMENT CONCERNS 5.1.1. Environmental Impact and Resource Conservation of Food Storage MATHEMATICS 5.1.1. Shelf life, and storage durations COMMUNICATION 5.1.1. Food incubations	5.1.1.1. Practice OSHS such as wearing PPE during post production activities 5.1.1.2. Practice cGMP, 7S, SSOP, PNS and HACCP 5.1.1.3. Maintain working areas and storage facilities 5.1.1.4. Incubate packed food products 5.1.1.5. Store packaged food products 5.1.1.6. Store excess materials and ingredients 5.1.1.7. Practice sanitary food handling upon storing finished Products
	5.2. Proper disposal of wastes are practiced according to environmental rules	SCIENCE 5.2.1. Chemistry of Waste Disposal: Understanding Environmental Impacts TECHNOLOGY	5.2.1.1. Practice proper waste disposal

	and regulation s.	5.2.1. Solutions for Waste Management ENVIRONMENT CONCERNS 5.2.1. Waste Disposal: Environmental Impact Reduction and Resource Recovery COMMUNICATION 5.2.1. Waste Disposal and waste segregation	
	5.3. Production data checklist is accomplished according to enterprise protocol.	SCIENCE 5.3.1. Scientific Method in Production ENVIRONMENT CONCERNS 5.3.1. Environmental Impact of Production Data COMMUNICATION 5.3.1. Reporting and Documentation Standards in Data Production	5.3.1.1. Record of production data 5.3.1.2. Accomplish inventory forms 5.3.1.3. Compute of yields,

RANGE OF VARIABLES**PROCESS PILI BY SUGAR CONCENTRATION**

VARIABLES	RANGE
1. Equipment and tools	Equipment and tools may include but not limited to: Equipment: 1.1 Blanching equipment 1.2 Drying equipment 1.3 Cooking kettle or sugar syrup cooker 1.4 Mixing tank 1.5 Vacuum cooker (optional) 1.6 Cooling tray or conveyor 1.7 Drying oven or dehydrator 1.8 Packaging equipment 1.9 Chiller/freezer/refrigerator Tools: 1.1 Blanching pot or blancher 1.2 Strainer or colander 1.3 Dehydrator or drying rack 1.4 Sugar syrup cooker or pot 1.5 Mixing spoon or paddle 1.6 Mixing bowl or container 1.7 Candy thermometer 1.8 Cooling tray or baking sheet 1.9 Spatula or scraper 1.10 Airtight containers 1.11 Hot blower 1.12 Blender 1.13 Digital weighing scale 1.14 Impulse electric sealer/ vacuum sealer/ Plastic sealer
2. Kitchen utensils	Kitchen utensils may include: Cutting implements such as: 2.1 Knives (kitchen knife) 2.2 Slicer 2.3 Kitchen shears Cooking utensils like: 2.4 Chopping boards 2.5 Basin 2.6 Strainer 2.7 GMP Kit (Apron, Hairnet, Mask, Gloves) 2.8 Ladle (stainless) 2.9 Casserole (small, medium and large)

	2.10 Bowl (stainless) 2.11 Stainless tray (large) 2.12 Spatula 2.13 Food Tongs 2.14 Strainer 2.15 Colander
3. Processing materials	Processing materials include: 3.1 Pili nuts 3.2 Sugar 3.3 Water 3.4 Flavorings (optional) 3.5 Acid (optional) 3.6 Cooking oil 3.7 Preservatives (optional) 3.8 Antioxidants (optional) 3.9 Glazing agents (optional)
4. Raw materials	Raw materials include: 4.1 Pili nuts 4.2 Sugar
5. Production data	Production data include: 5.1 Production schedule 5.2 Production target 5.3 Production input • Raw materials • Ingredients • Processing materials • Packaging materials 5.4 Production output • Quantity of the finished products • Rejects • Yields

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared equipment, tools, materials and utensils 1.2 Prepared the raw materials 1.3 Cooked sugar concentrates 1.4 Packed sugar concentrated products 1.5 Performed post production activities 1.6 Practiced cGMP, HACCP, 7S of Good Housekeeping, SSOP, AQL and OSHS
2. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods: 2.1. A combination of direct observation and questioning 2.2. Demonstration 2.3. Written test 2.4. Portfolio
3. Resource Implications	The following resources should be provided: 3.1 Specific work area/station 3.2 Equipment, tools and utensils to prepare and to process fruits and vegetables by sugar concentration. 3.3 Materials relevant to the proposed activity
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

UNIT OF COMPETENCY : PROCESS PILI BY DRYING AND DEHYDRATION
UNIT CODE : AB-PFB0506200751303

UNIT DESCRIPTOR unit deals with the knowledge, skills and attitudes required to process pili by drying and dehydration which include setting up tools, equipment, supplies and utensils, preparing raw materials: This, cooling and sweat drying items, packing dried products and carrying out post – production activities. It involves dehydrating and sun – drying pili in order to create a variety of items from the dried and dehydrated pili.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare equipment, tools, materials and utensils	1.1 <i>Equipment and tools</i> are prepared in accordance with manufacturer's specifications 1.2 <i>Kitchen utensils</i> are checked and sanitized in accordance with manufacturer's specifications.	Science: 1.1.1 Component of cleaning and sanitizing agent 1.1.2 Chemical properties of cleaning and sanitizing agents Technology: 1.1.1 Inspection and checking procedures of various equipment, tools and utensils 1.1.2 Calibration of equipment, tools and utensils 1.1.3 Cleaning and sanitizing of equipment, tools and utensils 1.1.4 Procedures on reporting of conditions and defects /breakdown of equipment, tools and utensils 1.1.5 Methods of accomplishing	1.1.1.1. Preparing equipment, tools and utensils 1.2 Inspecting and checking various equipment, tools and utensils 1.3 Calibrating weighing scales, and quality control tools such as thermometer, pH meter, refractometer and salinometer 1.4 Recording and reporting the condition and defects of equipment, tools and utensils 1.5 Preparing processing material 1.6 Practicing oral communication and writing skills 1.7 Accomplishing forms and checklist

		inspection forms and checklists for preparation of equipment, tools and utensils Environment: 1.1.1 Environmental impacts of chemical cleaning and sanitizing agents and substances 1.1.2 Preventive maintenance of various equipment, tools and utensils 1.1.3 Proper waste disposal Mathematics: 1.1.1 Ratio and proportion of cleaning agents/sanitizing and water Communication: 1.1.1 Types of equipment and tools for processing food by drying and dehydration 1.1.2 Uses and specifications of equipment, tools and utensils 1.1.3 Basic components of a report	in line with preparation activities 1.8 Following environmental rules and regulations in segregating and disposing wastes 1.11 Practicing cleaning and sanitation in preparing various equipment, tools and utensils
	1.3 Processing materials are sourced-out and made available according to work requirements.	Science: 1.1 Temperature humidity requirements for pilinut storage 1.2 Lifespan of Pilinut 1.3 Properties of PPE materials 1.4 Characteristics of PEB/PP Technology:	1.3.1 Practicing OSHS such as wearing personal protective equipment 1.3.2 Types of PPE materials

		1.1 Sourcing out of quality supplies and materials Environment: 1.1 7S of Good Housekeeping Mathematics: 1.1 None Communication: 1.1 Sources of good quality supplies and materials	1.3.3 Practicing cGMP, SSOP and 7S 1.3.4 Sourcing out quality supplies and material according to specifications
	1.4 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS)	Science: 1.1 OSHS principles in food processing Technology: 1.1 Practicing Occupational Safety and Health Standard (OSHS) Environment: 1.1 Occupational Safety and Health Standard (OSHS) Mathematics: 1.1 None Communication: 1.1 Understanding Occupational Safety and Health Standard (OSHS)	1.4 Practicing Occupational Safety and Health Standard (OSHS)
2. Prepare the raw materials	2.1 Pili are sorted and graded in accordance with product specifications.	Science: 1.1 Quality grades of pilinut 1.2 Accept and reject principle Technology: 1.1 Sorting and grading methods for pilinut 1.2 Accomplishing forms and checklist of raw materials as received and rejected Environment: 1.1 Recycling process of rejected pilinut 1.2 Proper waste disposal of rejected pilinut 1.3 Environmental rules and regulations in segregating and disposing wastes	1.1 Sorting and grading of raw materials 1.2 Practicing recycling process of rejected pilinut 1.3 Following rules and regulations on proper waste disposal

		Mathematics: 1.1 None Communication: 1.1 Understanding Varieties of pilinut 1.2 Classification of pilinut	
	2.2 Pili are prepared based on specified procedures and methods of processing.	Science: 1.1 Water acidity requirements for washing pilinut Technology: 1.1 Washing and cleaning techniques for pilinut 1.2 Weighing and Measuring procedure Environment: 1.1 Utilization of pilinut trimmings 1.2 Environmental rules and regulations in segregating and disposing wastes Mathematics: 1.1 Computations of the amount of pilinut needed for every production or product Communication: 1.3 Analyzing the water acidity	1.1 Practicing sanitation in preparation of raw materials 1.2 Utilizing raw materials trimmings of pilinut
	2.3 Cleaned raw materials are weighed in accordance with approved specifications. 2.4 Tools and utensils for raw materials are used based on work requirements and manuals. 2.5 Equipment are operated following manufacturer's manual.	Science: 1.1 Essential features of weighing scale 1.2 Effect of precise measurements in food processing 1.3 Following proper equipment operation such as lubrication, friction and performance Technology: 1.1 Weighing scale operation 1.2 Weighing process and procedure 1.3 Checking, operating and performing minor trouble shooting in	1.1 Weighing of cleaned raw materials 1.2 Operating equipment such as weighing scale 1.3 Using tools and utensils

		processing equipment, tools and utensils Environment: 1.1 Importance of following Manufacturer's Manual in operating equipment Mathematics: 1.1 Showing the different functions of tools and equipment according to their arrangement using the listing diagram 1.2 Matching the processing equipment with manufacturer's specification Communication: 1.1 Steps in using tools and utensils and operating equipment for drying and dehydration 1.2 Functions and uses of equipment for raw material preparation 1.3 Importance of precisions in using weighing scale	
	2.6 Raw materials are <i>pre-treated</i> prior to drying	Science: 1.1 Time and Temperature requirement for blanching 1.2 Effect of blanching in food processing and preservation 1.3 Factors that affect blanching time Technology: 1.1 Pre – treating raw materials Environment: 1.1 OH & S in blanching raw materials Mathematics: 1.1 Estimating the temperature needed for blanching Communication: 1.1 Procedure in blanching pili	1.1 Pre – treating raw materials for drying and dehydration 1.2 Reading process flow charts for raw materials

3. Dry pre – treated raw materials	3.1 Pili subjected to drying and dehydration are washed and drained in accordance with standard operating procedures	Science: 1.1 Characteristics of a well-drained pili subjected to drying and dehydration Technology: 1.1 Washing and draining pili Environment: 1.1 Proper disposal of used water 1.2 cGMP, 7s, SSOP and HACCP in drying and dehydration Mathematics: 1.1 Communication: 1.1 Washing and draining procedures and techniques 1.2 Tools used for washing and draining	1.1 Performing washing and draining procedures 1.2 Practicing sanitary food handling 1.3 Practicing OSHS such as wearing of PPE 1.4 Practicing cGMP, 7s, SSOP and HACCP
	3.2 Pre – treated raw materials are dried in accordance with standard operating procedures	Science: 1.1 Principles of drying and dehydration 1.2 State of water/moisture in pili 1.3 End point of drying pili 1.4 Quality changes during drying and dehydration Technology: 1.1 Operating dryer and dehydrator 1.2 Procedure and techniques in drying and dehydration Environment: 1.1 Mathematics: 1.1 Water content vs. drying time 1.2 Computation of yields, recoveries and rejects of dried pili 1.3 Ways of expressing moisture content (wet and dry basis moisture) Communication:	1.1 Performing drying and dehydration skills and techniques 1.2 Maintaining dryer and dehydrator such as cleaning and sanitizing 1.3 Calculating the moisture content of dried pili using wet and dry basis 1.4 Accomplishing forms and checklist of drying pre – treated pili

		1.1 Different types of food dryer and dehydrators 1.2 Difference between dried and dehydrated 1.3 Drying and dehydration methods	
	3.4 Operate equipment according to manufacturer's manual	Science: 1.1 Components and functions of dryer and dehydrator 1.2 Air temperature and relative humidity for drying pili Technology: 1.1 Dryer and dehydrator features and operation 1.2 Dryer and dehydrator minor trouble shooting Environment: 1.1 Environmental protection and concern on drying and dehydration Mathematics: 1.1 Time and temperature requirement in drying pili Communication: 1.1 Analyzing and interpreting the machine user's manual of operation	1.1 Operating dryer and dehydrator 1.2 Performing minor trouble shooting 1.3 Recording and reporting skills on the condition and defects of dryer and dehydrator
	3.5 Practice safety and good housekeeping in accordance to OHS, HACCP and cCGMP standards.	Science: 1.1 HACCP basic principles on drying and dehydrating pili 1.2 Technology: 1.1 Application of cGMP on drying and dehydration of pili Environment: Mathematics: Communication:	1.1 Practicing sanitary food handling 1.2 Practicing sanitary food handling 1.3 Practicing OSHS such as wearing of PPE 1.4 Practicing cGMP, 7s, SSOP and HACCP
4 Cool and sweat dried products	4.1 Dried products are removed from the dryer 4.2 Correct cooling and sweating procedures are done in accordance	Science: 1.1 Features of dried pili prior to removal from dryer 1.2 Food safety principles and practices on cooling	1.1 Performing cooling and sweating skills and techniques

	to standard operating procedures. 4.3 Products are checked according to required specifications. 4.4 Extension of drying time is applied to under processed products. 4.5 Grading of dried products is performed following product specifications. 4.6 Current GMP Practice (cCGMP) are followed.	and sweating of dried products Technology: 1.1 Cooling and sweating procedures and techniques 1.2 Methods of checking dried products 1.3 Grading procedures of dried products 1.4 Corrective measures for non – conforming products 1.5 Food handling practices on cooling and sweating of dried products Environment: 1.1 Proper waste disposal Mathematics: 1.1 Reading and analyzing the process flow charts for cooling and sweating of dried products Communication: 1.1 Difference between cooling and sweating 1.2 Grades of dried pili	1.2 Applying corrective measures for non – conforming products 1.3 Checking of dried products 1.4 Grading of dried products 1.5 Reading process flow charts for cooling and sweating of dried products 1.6 Recording through accomplishing forms and checklist of cooling and sweating of dried products
5 Pack dried products	5.1 Dried products are packed and weighed in accordance with product specifications 5.2 Dried products are sealed and labeled in accordance with products specifications 5.3 Packing procedures are performed in accordance to cGMP 5.4 Packing equipment is operated in accordance with manual instructions 5.5 Work safety measures are applied in accordance with OSHS 5.6 Finished product inspection is performed following	Science: 1.1 Characteristics of a good packaging materials 1.2 Properties of a packaging material Technology: 1.1 Packing and weighing procedures and techniques for dried pili 1.2 Sealing method and techniques 1.3 Operating procedures of various packing equipment 1.4 Checking techniques for finished products 1.5 Reporting of defects, irregularities and breakdown during packing operations 1.6 Accomplishing enterprise forms for	1.1 Packing and weighing of processed dried products 1.2 Labelling and sealing of processed dried products 1.3 Operating packing equipment such as sealer 1.4 Inspecting finished products for conformance to specification 1.5 Reading flow diagrams/flow charts

	established industry procedures.	recording of product weights Environment: 1.1 Packaging issues and legislation 1.2 Food safety principles and practices for packing operations 1.3 cGMP, OHS and HACCP of packing operation guidelines Mathematics: 1.1 Conversion for weights of packed products 1.2 Calculating product yield/pack Communication: 1.1 Different packing materials for dried products 1.2 Types of packaging material 1.3 Roles of food packaging 1.4 Sealing integrity/standards 1.5 Labelling information 1.6. Different packing tools and utensils	1.6 Recording of finished products weights using enterprise forms/checklist 1.6 Reporting of any equipment malfunction, product or process non – conformance during packing operations 1.7 Performing basic mathematical skills for computing yield, including rejects and spoilage 1.8 Applying environmental rules and regulations such as waste segregation and disposal 1.9 Practicing sanitary food handling during packing operation 1.10 Practicing cGMP, 7s, SSOP and HACCP in packaging, sealing and labeling 1.11 Maintaining various equipment, tools and utensils such as cleaning and sanitizing 1.12 Sourcing packing materials 1.13 Maintaining packing areas and facilities
6 Perform post – production activities	6.1 Packed finished food products are stored according to required storage condition	Science: 1.1 Different storage condition and requirement Technology:	1.1 Storing packaged food products

	6.2 Tools, materials and equipment are cleaned and stored based on workplace procedures and operation manuals 6.3 Proper disposal of wastes are practiced according to environmental rules and regulations. 6.4 Production data checklist is accomplished according to enterprise protocol.	1.1 Operation of storage equipment 1.2 Storing procedures and techniques for packed products 1.3 Cleaning and storing methods for equipment, tools and utensils 1.4 Storing procedures for excess materials and ingredients 1.5 Recording of storage time and temperature 1.6 Preparation of daily production input report (spoilage and rejects) 1.7 Recording procedures of production data using enterprise forms Environment: 1.1 Food safety principles and practices for storage of finished products 1.2 Occupational safety and health standards on post-production activities 1.3 Current GMP on post-production activities Mathematics: Communication: 1.1 Halal guidelines 1.2 Analyzing Production data	1.2 Cleaning and storing of equipment, tools and utensils 1.3 Storing excess materials and ingredients 1.4 Recording of storage time temperature for finished products 1.5 Recording of spoilage and rejects, yields and recoveries 1.6 Recording of production data 1.7 Accomplishing/ Completing enterprise forms and checklist on packing activities 1.8 Practicing interpersonal skills 1.9 Computation of yields, recoveries, recoveries and rejects 1.10 Practicing cGMP, 7s, SSOP and HACCP 1.11 Maintaining various equipment, tools and utensils such as cleaning and sanitizing 1.12 Maintaining working areas and storage facilities
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RANGE OF VARIABLES**PROCESS PILI BY DRYING AND DEHYDRATION**

VARIABLES	RANGE
1. Equipment and tools	Equipment and tools may include but not limited to: Equipment: 1.1 Cabinet drier 1.2 Solar drier 1.3 Vacuum sealer 1.4 Poly sealer 1.5 Cabinet dryer with trays 1.6 Solar dryer 1.7 Moisture analyzer 1.8 Freezer chest type 1.9 Freezer upright 1.10 Cooler 1.11 Styro or chest 1.12 Weighing scale Tools: 1.1 Blanching pot or blancher 1.2 Strainer or colander 1.3 Dehydrator or drying rack 1.4 Mixing spoon or paddle 1.5 Mixing bowl or container 1.6 Cooling tray or baking sheet 1.7 Spatula or scraper 1.8 Airtight containers 1.9 Hot blower 1.10 Digital weighing scale 1.11 Impulse electric sealer/ vacuum sealer/ Plastic sealer 1.12 Knife sets 1.13 Sharpener 1.14 Salinometer 1.15 Refractometer 1.16 Pressure gauge 1.17 Temperature gauge
2. Kitchen utensils	Kitchen utensils include: 2.1 Measuring cup 2.2 Measuring spoon 2.3 Mixing bowl 2.4 Colanders 2.5 Food Trays 2.6 Containers for salt, condiments, seasonings

3. Processing materials	Processing Materials include: 3.1 Raw Pilinut 3.2 PPE 3.3 Apron 3.4 Hair net 3.5 Mouth mask 3.6 Rubber boots 3.7 Gloves 3.8 PEB/PP 3.9 Laminated Foil 3.10 Sticker label
4. Preparation of pili raw materials	Preparation of Pili raw materials include: 4.1 Sorting 4.2 Weighing/measuring 4.3 Washing/Cleaning
5. Pre – treatment of pili raw material	Pre – treatment of pili raw material: 5.1 Blanching 5.2 Removing of testa (optional) 5.3 Sorting 5.4 Splitting 5.5 Sorting 5.6 Salting 5.7 Syruping 5.8 Application of food additives such as anti –molds
6. Dried products	Dried products may include: 6.1 Dried salted pili with testa 6.2 Dried salted pili without testa 6.3 Dried pili with testa 6.4 Dried pili without testa 6.5 Dried sweet pili without testa 6.6 Dried flavored pili with and without testa
7. Finished product inspection	Finished product inspection include: 7.1 Package integrity 7.2 Appropriateness of label 7.3 Conformance to product specifications
8. Production data	Production data include: 8.1 Production schedule 8.2 Production target 8.3 Production input • Raw materials • Ingredients • Processing materials • Packaging materials 8.4 Production output • Quantity of the finished products • Rejects • Yields

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared equipment, tools, materials and utensils 1.2 Prepared the raw materials 1.3 Dried pre – treated raw materials 1.4 Cooled and sweat dried products 1.5 Packed dried products 1.6 Performed post – production activities 1.7 Practiced safety and good housekeeping following OSHS, HACCP, and 7S of Good Housekeeping, SSOP and cGMP standards.
2. Resource Implication	The following resources should be provided: 2.1 Specific work area/station 2.2 Equipment, tools and utensils to be prepared for drying and dehydration activities 2.3 Raw materials such as fruits, vegetables, herbs and spices and root crops 2.4 Materials relevant to the proposed activity
3. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods: 3.1 A combination of direct observation and questioning 3.2 Demonstration 3.3 Written test 3.4 Portfolio
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or the designated TESDA Accredited Assessment Center

UNIT OF COMPETENCY : PROCESS PILI BY SALTING

UNIT CODE : AB-PFB0506200751302

UNIT DESCRIPTOR : This unit deals with the knowledge, skills and attitudes required to process pili by salting which include to prepare equipment, tools, materials and utensils, prepare the raw materials, cook pre- treated pili, pack salted pili and perform post- production activities..

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables	REQUIRED KNOWLEDGE	REQUIRED SKILLS
1. Prepare equipment, tools, materials and utensils	1.1 Equipment and tools are prepared in accordance with manufacturer's specifications	Science: 1.2 Component of cleaning and sanitizing agent 1.3 Chemical properties of cleaning and sanitizing agents Technology: 1.1 Inspection and checking procedure s of various equipment, tools and utensils 1.2 Calibration of weighing scales 1.3 Calibration of quality control tools 1.4 Procedures on reporting of conditions and defects /breakdown of equipment, tools and utensils 1.5 Methods of accomplishing	1.1 Preparing equipment, tools and utensils 1.2 Recording and reporting the condition and defects of tools, utensils 1.3 Inspecting and checking skills on various equipment, tools and utensils 1.4 Practicing OSHS such as wearing PPE (Personal Protective Equipment) 1.5 Practicing cGMP, SSOP and 7S 1.5 Calibrating of weighing scales and quality control tools such as thermometer, and refractometer

		inspection forms and checklists for preparation of equipment , tools and utensils 1.6 Preventive maintenance of various equipment and tools 1.7 HAACP System Environment: 1.2 Environmental impacts of chemical cleaning and sanitizing agents and substances 1.3 Preventive maintenance of various equipment, tools and utensils 1.4 Proper waste disposal Mathematics: 1.1 Ratio and proportion of cleaning agents/sanitizing and water Communication: 1.1 Types of equipment and tools for processing food by salting 1.4 Procedures on reporting of conditions and defects breakdown of equipment, tools and utensils to immediate head/superviso	
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		1.5 Basic components of reports 1.2 Usage of instructional manuals	
	1.2 Processing materials are sourced-out and made available according to work requirements	Science: 1.2 Process materials sourcing Technology: 1.2 1.3 Current Good Manufacturing Practices 1.4 Kosher guidelines 1.5 Halal guidelines Communication: 1.1 Source of good quality supplies and materials in line with preparation activities 1.1 Preparing equipment, tools and utensils 1.2 Inspecting and checking various equipment, tools and utensils	1.1 Sourcing of processing materials 1.2 Sourcing quality supplies and materials according to specifications 1.3 Following environment rules and regulations in segregating and disposing wastes 1.4 Practicing OSHS such as wearing PPE (Personal Protective Equipment) 1.5 Practicing cGMP, SSOP and 7S 1.6 Following environmental rules and regulations in segregating and disposing waste

	1.3 Kitchen utensils are checked and sanitized in accordance with manufacturer's specifications.	Science: 1.1 Technology: 1.1 Conditions and defects/ breakdown of equipment, tools and utensils 1.2 Parts and functions of equipment, quality control tools/ instruments and utensils Environment: 1.3 Regular upkeep of various equipment, tools and utensils 1.4 Preventive maintenance of various equipment and tools Mathematics: 1.1 Ratio and proportion of cleaning agents/sanitizing and water Communication: 1.5 Preparation of equipment, tools and kitchen utensils	1.1 Checking and sanitizing kitchen utensils 1.2 Practicing sanitation in preparing various equipment, tools and utensils 1.3 Maintaining various equipment, tools and utensils such as cleaning and sanitizing
	1.4 Safety measures are applied in accordance with Occupational Safety and Health Standards (OSHS)	Science: 1.1 OSHS principles in food processing Technology: 1.1 Practicing Occupational Safety and Health Standard (OSHS)	1.1 Practicing OSHS such as wearing PPE (personal Protective Equipment)

		Environment: 1.1 Occupational Safety and Health Standard (OSHS) 1.2 Sanitation Standard Operating Procedures (SSOP) for preparation of equipment, tools and kitchen utensil Mathematics: 1.1 None Communication: 1.1 Understanding Occupational Safety and Health Standard (OSHS)	
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2. Prepare the raw materials	2.1 Raw pili nuts are sorted and graded in accordance with product specifications and standards.	Science: 2.1 Sorting and grading methods for raw materials Environment: 2.2 Food handling practices on raw materials preparation 2.3 Current Good Manufacturing Practices Challenge (PQC) 2.4 Acceptable Quality Level (AQL) of raw materials and ingredients 2.5 SSOP Guidelines Communication: 2.1 Identification of acceptable quality raw materials and other ingredients used to preserve pili	2.1 Demonstrating on how to identify acceptable quality raw materials and other ingredients used to preserve pili nut by salting 2.2 Sorting and grading of raw materials 2.3 Segregating reject raw materials
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		nut by salting	
	2.2 Sorted pili nuts are prepared according to required forms and target finished products	Science: 2.1 Procedure for preparing raw materials Technology: 2.3 Philippine Quality Challenge (PQC) and ISO,HACCP,E MS(Environmental Management System) Communication: Raw materials form and requirement	2.1 Preparing sorted raw pili nuts 2.2 Practicing cGMP,& HACCP,SSOP and AQL on preparing raw materials 2.3 Practicing of sanitary food handling of raw materials preparations
	2.3 Sorted pili nut are blanched to remove seed coat or testa	Science: 1. Time and temperature requirements for blanching Communication: 1.1 Identification of acceptable quality raw materials and other ingredients used to preserve pili nut by salting 1.2 Preparing procedures or raw materials 1.3 Blanching Procedure	2.1 Following blanching pili nut according to required temperature 2.2 Following environmental rules and regulations in segregating and disposing wastes

2.4 Blanched pili nut are sorted, drained and prepared for cooking according to target products		Science: 1.1 Hazard Analysis & Critical Control Points (HACCP) basic principles Technology: 1.1 Food safety principles and practices on raw materials preparations Environment: 1.2 Current Good Manufacturing Practices 1.3 Hazard Analysis & Critical Control Points (HACCP) basic principles 1.4 7S of Good Housekeeping 1.5 Halal guidelines 1.6 Kosher and organic food processing guidelines Mathematics: 1.1 Record the weight of testa, pili nuts with defects and good quality Communication: 1.1 Apply methods of processing weighing peeling, weighing, measuring, splitting	2.1 Preparing blanched pili nut according target product (peel, weigh, measure, scale and split 2.2 Practicing of sanitary food handling for raw materials preparations Practicing OSHS such as wearing of PPE 2.3 Computing recovery percentage
2.5. Tools and utensils for raw materials are used based on work requirements and manuals		Technology: 1.1 Functions and uses of tools and utensils for raw material preparation	1.1 Calibrating weighing scale Thermometer and salinometer 1.2 Measuring clean raw materials for salting 1.3 Following

		Communication: 1.1 Steps in using tools and operating equipment (weighing scale, thermometer)	precise measurement
	2. 6. Equipment are operated following manufacturer's manual	Science: 2.2 Parts and functions of equipment, quality control tools /instruments and utensils 2.1 Usage of instructional manual	2.1 Maintaining various equipment 2.2 Recording and reporting skills on the condition and defects equipment
3. Cook pili nuts in brine solution	3.1 Prepared pili nuts with or without testa (split or whole)	Science: 3.1 Cooking and cooling procedure 3.2 Salt preserve product standard Salted with testa Salted without testa (Whole or split) Technology: 3.1 Methods of accomplishing enterprise forms for temperature and TSS monitoring 3.2 Recording and reporting of inputs Environment: 3.5 Food safety principles and practices on cooking pili nuts in brine solution 3.6 Occupational Safety and Health Standards (OSHS) 3.7 Current Good Manufacturing Practices 3.8 7S of Good	3.1 Performing cooking and cooling procedures 3.2 Determining required temperature and TSS (Total Soluble Solids) 3.3 Determining and checking end point of the product according to standard 3.4 Calibrating refractometer/salinometer 3.5 Reading temperature/salinity 3.6 Reading process flow charts for cooking pili nuts in salt 3.7 Recording through accomplishing forms(production data) including other inputs 3.8 Performing basic mathematical skills 3.9 Performing conversion 3.10 Practicing of food sanitary food handling during cooking in brine solution 3.11 Segregate and dispose of waste

		Housekeeping 3.9 Halal guidelines 3.10 Kosher and organic food processing guidelines	3.12 Practicing OSHS such as wearing of PPE
	3.2 Nuts is cooked according to the required salinity	Science: 1.1 Food Safety principles and practices on cooking food in brine solution Mathematics: 3.1 . Brining requirement 3.2. Food salinity testing	3.2 Method on conducting salinity (refractometry, Electric conductivity meter, hydrometer)
	3.3 Desired doneness is checked/tested manually	Science: 3.1 Cooking endpoint requirement 3.2 Current Good Manufacturing Practices 3.3 Occupational Safety and Health Standards (OSHS) for cooking pili in brine solution. Environment: 3.4 Current Good manufacturing Practices	3.3 Reading and interpreting temperature using thermometer 3.3 Recording and reporting skills 3.5 Applying Halal and Kosher food processing guideline
4. Pack salted pili products	4.1. Salted pili are weighed and packed in accordance with product specifications and required temperature.	4.1. Food safety principles and practices for packing operations 4.2 Packing procedures and technique 4.2 Different packing materials 4.3 Significance of TSS and filling temperature	4.1 Practicing sanitary food handling during packing operations 4.2 Practice OSHS such as wearing of PPE Practice cGMP, 7S, SSOP, PNS and HACCP

	4.2 Air cooling is performed according to product requirements.	Science: 4.1 Air-cooling Procedures 4.2 Checking techniques for finished product	4.1. Performing air cooling procedures 4.3 4.2 Following proper cooling method
	4.3. Packing equipment is operated in accordance with instructions manual	Environment: 4.1 Different packing equipment 4.2 Checking techniques for finished products Communication: 4.1 Steps of operating packing equipment	4.1 Operating packing equipment such as sealer 4.2 Inspecting finished product Report of any equipment malfunction, product or process non-conformance during packing operations
	4.4 Salted products are sealed and labeled in accordance with product specifications	Science: 4.1 Labeling information • Name of products • Net weight • Ingredients • Production/expiration date • Manufacturer's address • Allergen Program • Nutrition Facts Communication: 4.2 Sealing procedures and techniques 4.3 Sealing integrity/standards: 4.4 Checking headspace Checking leakage	4.1. Labeling and sealing skills for salted products 4.2 Determining correct head space through visual means 4.3 Inspecting finished products for conformance to specifications 4.3

	4.5 . Finished product inspection is performed following quality control parameters	Science: 4.1 Checking techniques for finished products Technology 4.2 Quality control parameters Environment: 4.1 Reporting of defects, irregularities and breakdown during packing operations to immediate head/supervisor 4.2 Accomplishing enterprise forms for recording of products weights Mathematics: 4.1 Recording of non-conformance packed products	4.1 Inspect finished products to conform to specifications 4.2 Record of finished product weights using enterprise forms/checklist
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5. Perform post-production activities	Packed food products are stored according to required storage period/condition	Science: 5.1 Different storage conditions and period 5.1 Storing procedures and techniques for packed products 5.3 Food safety principles and practices for storage of finished products 5.4 Food safety principles and practices for storage of finished products Environment: 5.1 HACCP basic principles on storage of finished products 5.2 HACCP basic principles on storage of finished products Mathematics 5.1 Recording of storage time and temperature. 5.2 Production data 5.3 Preparation of daily production input report (spoilage and rejects) 5.4 Recording procedures of production data 5.1 Inventory of excess materials	5.1 Practice OSHS such as wearing PPE during post production activities 5.2 Practice cGMP, 7S, SSOP, PNS and HACCP 5.3 Maintain working areas and storage facilities 5.4 Incubate packed food products 5.5 Store packaged food products 5.6 Store excess materials and ingredients 5.7 Practice sanitary food handling upon storing finished products
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		and ingredients	
	5.2 Tools, materials and equipment are cleaned and stored based on workplace procedures and operation manuals	Science: 5.1 Cleaning and storing methods for equipment, tools and utensils 5.2 Storing tools materials and equipment	Maintain various equipment, tools and utensils such as cleaning and sanitizing
	5.3 Proper disposal of wastes are practiced according to environmental rules and regulations.	Technology: 5.1 HACCP basic principles on storage of finished products Communication; 5.1 Following environmental rules and regulations such as wastes segregation and 5.3 disposals.	5.1 Practice proper wastes disposal
		5.4 Food safety principles and practices for storage of finished products	5.1 Stowing of equipment, tools, utensils and materials
	5.2 Proper disposal of wastes are practiced according to environmental rules and regulations.	Environment: 5.1 Following environmental rules and regulations such as wastes segregation and disposals.	5.1 Practice proper wastes disposal
6. Production data checklist is accomplished according to enterprise protocol	6.1 Production report is submitted	Mathematics: 6.1 Production data 6.2 Preparation of daily production input report (spoilage and rejects) 6.3 Recording	6.1 Record of production data 6.2 Accomplish inventory forms 6.3 Compute of yields, recoveries and rejects

		procedures of production data using enterprise forms	
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**RANGE OF VARIABLES
PROCESS PILI BY SALTING**

VARIABLES	RANGE
1. Equipment and tools	Equipment and tools may include but not limited to: Equipment: 1.1 Blanching pot or blancher 1.2 Colander or strainer 1.3 Mixing bowl or container 1.4 Salt mixer or salting equipment 1.5 Drying equipment 1.6 Roasting pan or baking tray 1.7 Cooling rack 1.8 Weighing scale 1.9 Airtight containers or packaging machine 1.10 Storage containers 1.11 Labeling machine (optional) 1.13 Solar drier 1.14 Vacuum sealer 1.15 Poly sealer 1.16 Cabinet dryer with trays 1.17 Solar dryer 1.18 Moisture analyzer 1.19 Freezer chest type Tools: 1.18 Blanching pot or blancher 1.19 Strainer or colander 1.20 Dehydrator or drying rack 1.21 Mixing spoon or paddle 1.22 Mixing bowl or container 1.23 Cooling tray or baking sheet 1.24 Spatula or scraper 1.25 Airtight containers 1.26 Hot blower 1.27 Digital weighing scale 1.28 Impulse electric sealer/ vacuum sealer/ Plastic sealer 1.29 Knife sets 1.30 Sharpener 1.31 Salinometer 1.32 Refractometer 1.33 Pressure gauge 1.34 Temperature gauge
2. Processing materials	Processing Materials include: 2.1 Pili nut

	2.2 Salt 2.3 Water 2.4 Additional flavorings (optional) 2.5 Preservatives (optional) 2.6 Oil (optional)
3. Kitchen utensils	Kitchen utensils may include: 3.1 Sauce pan or pot 3.2 Colander or strainer 3.3 Mixing bowl 3.4 measuring cups and spoons 3.5 Wooden spoon or spatula 3.6 Salt shaker or grinder 3.7 Baking sheet or tray 3.8 Cooling rack 3.9 Airtight containers 3.10 Spatula or tongs 3.11 Kitchen scale 3.12 Parchment paper (optional)
4. Raw pili nut preparation	Raw pili nut preparation include: 4.1 Shelling 4.2 Cleaning 4.3 Blanching (optional) 4.4 Soaking (optional) 4.5 Draining 4.6 Salting 4.7 Drying or roasting 4.8 Cooling 4.9 Storing
5. Packaging equipment	Packaging equipment may include: 5.1 Weighing scale 5.2 Packaging machine • Vertical form -fill seal machine • Horizontal flow wrapper 5.3 Sealing equipment • Heat sealer • Impulse sealer 5.4 labeling machine 5.5 Bagging equipment 5.6 Airtight sealing equipment 5.7 Packaging materials • Plastic bag or pouches • Foil or laminated bags • Boxed or cartons
6. Finished product inspection	Finished product inspection may include: 6.1 Package integrity 6.2 Appropriateness of label

	6.3 Conformance to product specifications
7. Control parameters	Control parameters include: 7.1 Salt concentration 7.2. Brine concentration 7.3 Soaking time 7.4 Drying temperature and time 7.5 Mixing techniques 7.6 Nuts preparation 7.7 Quality control 7.8 Equipment calibration 7.9 Storage conditions 7.10 Packaging parameters
8. Production report	Production data include: 8.1 Production schedule 8.2 Production target 8.3 Production input • Raw materials • Ingredients • Processing materials • Packaging materials 8.4 Production output • Quantity of the finished products • Rejects • Yields

EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared equipment, tools, materials and utensils 1.2 Checked and sanitized tools and utensils 1.3 Sorted and graded raw pili nuts 1.4 Blanched pili nut according to time requirement and target products 1.5 Blanched, sorted and drained pili nuts 1.6 Cooked pili according to required salinity 1.7 Checked and tested manually to the desired doneness 1.8 Weighed and packed salted products 1.9 Sealed and labeled finished product 1.10 Performed inspection of finished products 1.11 Stored finished product according to required storage period/condition 1.12 Followed proper waste disposal 1.13 Accomplished production data cGMP, HACCP, 7S of Good Housekeeping, SSOP, AQL and OSHS
2. Methods of Assessment	Competency in this unit must be assessed using at least two (2) of the following methods: 2.1 A combination of direct observation and oral questioning 2.2 Demonstration 2.3 Written test
3. Resource Implications	The following resources should be provided: 3.1 Specific work area/station 3.2 Equipment, tools and utensils to prepare and to process fruits and vegetables by sugar concentration. 3.3 Materials relevant to the proposed activity
4. Context of Assessment	4.1 Competency maybe assessed in actual workplace or at the designated TESDA Accredited Assessment Center.

GLOSSARY OF TERMS

PILI PROCESSING

Dehydration - a process of reducing moisture of food to low levels for improved shelf life by adding one or more forms of energy to the food.

Dried products – refer to food items processed to low water activity levels, enhancing stability, reducing weight for cost-effective transportation, and improving shelf life through preservation methods like drying.

Drying - removes the moisture from the food so that bacteria, yeasts, and molds cannot grow and spoil the food.

Packing equipment – machinery used to enclose and protect products by encasing them in a container for sale, distribution, shipping, storage, and usage.

Pili or Pili nut – the kernel of an indigenous crop pili nut tree, *Canarium ovatum* (Eng), which is native to the Philippines belonging to the family Burseraceae. In the Philippines, production centers are located in the Bicol region, provinces of Sorsogon, Albay, and Camarines Sur, southern Tagalog, and eastern Visayas.^{[8][9]}

Pre – treated - an act or instance of treating something in advance often required to remove oil and grease from the waste water.

Processing - the act or process of treating or preparing something by a special method.

Processing materials – the series of steps or “unit operations” used in the manufacture of raw-materials into finished goods.

Production data – consist of the results of work. The data comprise things that can be counted, seen, and compared directly from one worker to another.

Raw materials – are materials or substances used in the primary production or manufacturing of goods.

Sugar concentration – the process of reducing the volume of syrup or sugar solution to obtain a higher concentration of sugar.

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