



Model Curriculum

QP Name: Junior Coconut Processing Operator

QP Code: FIC / Q0206

QP Version: 1.0

NSQF Level: 3.0

Model Curriculum Version: 1.0

Food Industry Capacity and Skill Initiative (FICSI)
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Training Parameters

| | |
|---|---|
| Sector | Food Processing |
| Sub-Sector | Fruit and vegetables |
| Occupation | Processing-Fruit and vegetables |
| Country | India |
| NSQF Level | 3 |
| Aligned to NCO/ISCO/ISIC Code | NCO-2015/7514.0100,7513.9900 |
| Minimum Educational Qualification and Experience | <ol style="list-style-type: none"> 1. Grade 10 pass or equivalent OR 2. 9th Grade pass with 1-year relevant experience in Food Processing Industry OR 3. 8th-grade pass with 2 years of relevant experience in the Food Processing Industry OR 4. Previous relevant Qualification of NSQF Level 2.5 with 1.5 years of relevant experience in Food Processing Industry OR 5. Previous relevant Qualification of NSQF Level 2 with 3 years relevant experience in Food Processing Industry |
| Pre-Requisite License or Training | NA |
| Minimum Job Entry Age | 18 Years |
| Last Reviewed On | 20-02-2024 |
| Next Review Date | 31-01-2027 |
| NSQC Approval Date | 31-01-2024 |
| QP Version | 1.0 |
| Model Curriculum Creation Date | 24-01-2024 |
| Model Curriculum Valid Up to Date | 30-01-2027 |
| Model Curriculum Version | 1.0 |
| Minimum Duration of the Course | 300 hours |
| Maximum Duration of the Course | 480 hours |

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the participants will be able to:

- Prepare for Coconut Processing
- Carry out Coconut Processing
- Implement Food Safety Requirements
- Employability Skills

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory

| NOS and Module Details | Theory | Practical | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|--|--------------|---------------|---|---|-------------------|
| | Duration | Duration | | | |
| FIC/N9026: Prepare for Production | 18:00 | 42:00 | 00:00 | 00:00 | 60:00 |
| NOS Version 1.0 | | | | | |
| NSQF Level 3 | | | | | |
| Module 1: Introduction to the Food Processing Sector and the Responsibilities of a 'Junior Coconut Processing Operator | 04:00 | 00:00 | 00:00 | 00:00 | 4:00 |
| Module 2: Prepare workplace and equipment for coconut processing | 14:00 | 42:00 | 00:00 | 00:00 | 56:00 |
| FIC/N0205: Carry out Coconut Processing | 70:00 | 110:00 | 00:00 | 00:00 | 180:00 |
| NOS Version 1.0 | | | | | |
| NSQF Level 3 | | | | | |
| Module 3: Process Coconuts | 45:00 | 70:00 | 00:00 | 00:00 | 115:00 |
| Module 4: Perform Post-production cleaning | 25:00 | 40:00 | 00:00 | 00:00 | 65:00 |
| FIC/N9906 – Apply food Safety guidelines in Food processing | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| NOS Version No. 1.0 | | | | | |
| NSQF Level 3 | | | | | |
| Module 5: Practice personal hygiene and follow Good Manufacturing Practices at workplace | 05:00 | 10:00 | 00:00 | 00:00 | 15:00 |
| Module 6: Apply food safety practices at workplace | 05:00 | 10:00 | 00:00 | 00:00 | 15:00 |

| | | | | | |
|---|---------------|---------------|--------------|--------------|---------------|
| DGT/VSQ/N0101 – Employability Skills (30 Hours) | 12:00 | 18:00 | 00:00 | 00:00 | 30:00 |
| NOS Version No. 1.0 | | | | | |
| NSQF Level 2 | | | | | |
| Module 7: ES Skills | 12:00 | 18:00 | 00:00 | 00:00 | 30:00 |
| Total | 110:00 | 190:00 | 00:00 | 30:00 | 300:00 |

Elective Modules

The table lists the modules and their duration corresponding to the elective NOS of the QP

| Elective NOS and Module Details | Theory | Practical | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|--|--------------|--------------|---|---|-------------------|
| | Duration | Duration | | | |
| Elective 1: FIC/N0206: Produce Value added products from coconut Kernel NOS Version 1.0 NSQF Level 3 | 30:00 | 60:00 | 00:00 | 00:00 | 90:00 |
| Module 9: Produce Desiccated Coconut | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| Module 10: Produce Coconut Milk | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| Module 11: Produce Coconut Oil | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| Total Duration | 30:00 | 60:00 | 00:00 | 00:00 | 90:00 |

| Elective NOS and Module Details | Theory | Practical | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|-----------|-----------|---|---|-------------------|
| | Duration | Duration | | | |
| Elective 2: FIC/N0207: Produce Coconut Water from fresh coconuts NOS Version 1.0 NSQF Level 3 | 10 | 20 | 0 | 0 | 30 |
| Module 8: Produce Coconut Water from fresh coconuts | 10 | 20 | 0 | 0 | 30 |
| Total Duration | 10 | 20 | 0 | 0 | 30 |

| Elective NOS and Module Details | Theory | Practical | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|--|--------------|--------------|--|--|----------------|
| | Duration | Duration | | | |
| Elective 3: FIC/N0208: Produce Coconut Jaggery NOS Version 1.0 NSQF Level 3 | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| Module 12: Produce Coconut Jaggery | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |
| Total Duration | 10:00 | 20:00 | 00:00 | 00:00 | 30:00 |

Module Details

Module 1: Introduction to Food Processing Sector and the Job of 'Junior Coconut Processing Operator-Value Added Food Products'

Mapped to NOS FIC/N9026 v1.0

Terminal Outcomes:

- Describe the food processing industry and its sub-sector Packaged food industry in brief
- Discuss the roles and responsibilities of Junior Coconut Processing Operator-Value Added Food Products

| Duration: 04:00 | Duration: 00:00 |
|---|--|
| Theory – Key Learning Outcomes <ul style="list-style-type: none"> • Discuss about the food processing industry and Coconut processing sector and its growth trends • Discuss the value-added products derived from coconut and its market • Discuss the career opportunities available to Junior Coconut Processing Operator-Value Added Food Products in the food processing industry • Explain the terminologies used in coconut processing • List the sequence of operations to be performed in the job • List the various types of activities undertaken for processing a coconut, derive products from it, storage, packaging and quality testing | Practical – Key Learning Outcomes |
| Classroom Aids: Whiteboard, Marker, Duster, Projector, Laptop, PowerPoint Presentation | |
| Tools, Equipment, and Other Requirements Nil | |

Module 2: Prepare workplace and equipment for processing coconuts

Mapped to FIC/N9026 v1.0

Terminal Outcomes:

- Plan for production
- Clean and maintain work area, machineries, and tools for production
- Organize for production

| Duration: 16:00 | Duration: 40:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the process of analyzing and interpreting the production instructions (product details, process flow charts, formulation charts etc) • Discuss the production planning and prioritize tasks as per work like inspect, clean, maintain, verify, etc. • Discuss the methods of calculating the estimate manpower and material requirements as per work requirement. • explain about the capacity utilization of machinery with respect to the processing time, production order, and batch size for each product • discuss the various tools used in the process • explain the cleaning procedures of work area and tools used in the production area • discuss the importance of verifying the availability and working of the tools before commencing the coconut processing. • discuss how to organize the raw materials safely and securely • discuss the waste disposal measures as per the organization and environmental guidelines • Discuss the escalation mechanism in case of faulty devices | <ul style="list-style-type: none"> • Demonstrate the use of various tools for coconut processing • Demonstrate how to interpret the various flowcharts • Demonstrate through a role play production planning process • Demonstrate the methods to calculate the required manpower and materials • Show how to clean and sanitise workplace and equipment • Demonstrate the waste disposal methods • Show how to use the PPE kits |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook, etc. | |
| Tools, Equipment, and Other Requirements | |
| Sample legislative guidelines, Various materials and equipment, | |

Module 3: Process Coconuts

Mapped to FIC/N0205 v1.0

Terminal Outcomes:

- Perform Coconut processing
- Package the finished product

| Duration: 40:00 | Duration: 60:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain the methods of selecting good quality coconut for processing • Discuss the steps to de-husk the coconut to remove the husk • explain the steps for cleaning the dirt and the debris from the de-husked coconuts • discuss the quality check guidelines for checking the samples • explain the steps to operate the packaging machine and setting the controls • discuss the process of loading the labels in the packaging machine • discuss the method of checking the packaged bottles contain the label with all relevant information • explain the steps to check the weight of the packed product and conformance to standards • explain the storage of the packaged products securely | <ul style="list-style-type: none"> • Demonstrate the steps to operate the de-husking machine • Illustrate the steps to perform the quality checks for a finished product • Demonstrate the steps to package the finished goods |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook | |
| Tools, Equipment, and Other Requirements | |
| de-husking machine, packaging machine, packaging materials, labels, storage bins | |

Module 4: Perform Postproduction Cleaning activities

Mapped to FIC/N0205 v 1.0

Terminal Outcomes:

- Carry out postproduction cleaning and maintenance of equipment

| Duration: 20:00 | Duration: 30:00 |
|---|--|
| <p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Discuss the methods of cleaning the equipment namely de-husking machines, conveyor belts with approved cleaning agents and sanitizers to remove any residual coconut fibres • Discuss the cleaning and sanitizing techniques of the area where the coconut processing takes place • Explain the different cleaning methodologies cleaning out of place, cleaning in place, and dry air cleaning • Discuss waste disposal methods followed by the organization | <p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Demonstrate the cleaning in Place, Cleaning out of place and dry air methods • Demonstrate the minor repair of equipment in the work area |
| <p>Classroom Aids:</p> <p>Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation, Participant Handbook</p> | |
| <p>Tools, Equipment, and Other Requirements</p> <p>Operating procedures for maintenance and cleaning, de-husking machines, conveyor belts, cleaning and sanitizing agents, PPE kits for cleaning, waste disposal bins</p> | |

Module 5: Practice food safety, GMP and personal hygiene at workplace

Mapped to FIC/N9906 v1.0

Terminal Outcomes:

- Apply personal hygiene and follow Good Manufacturing practices at workplace.
- Implement Food Safety and pre-requisite programs (PRP) at workplace

| Duration: 05:00 | Duration: 10:00 |
|--|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Define hazards and risks • Recall the various types of health and safety equipment available in an organisation and the methods for obtaining them • Discuss the organizational health and safety policies and procedures • Discuss site-relevant documented procedures for Personal Hygiene and Visitor/ Contractor rules • Explain work instructions at levels of employees inside a food manufacturing site • Ensure timed planning and participation in relevant training and awareness sessions on personal hygiene, GMP, and related topics • Explain the importance of timely medical examination from a prescribed and authorized doctor and comply with the guidelines of Schedule IV as described in Food Safety Standard Authority of India (FSSAI) guidelines • State how to follow a site relevant documented procedure and area wise work instructions for Good Manufacturing Practices (GMP) to be followed on the site • List validated Do's & Don'ts inside a food manufacturing firm • State process flow charts, HACCP summary plan and critical process parameters in each and respective areas of the production line • Explain how to identify the material requirements such as manufacturing equipment's, Utensils and other processing aids, cleaning chemicals, cleaning work instructions in all the relevant areas of manufacturing facility | <ul style="list-style-type: none"> • Demonstrate the steps to be performed for implementing good manufacturing practices (GMP) • Demonstrate how to follow work instructions at levels of employee inside a food manufacturing site and ensure that the relevant instructions are well communicated and being followed at the fixed timelines • Show how to fill data in daily monitoring checklist related to personal hygiene, food safety and GMP • Illustrate process to follow man and materials movement throughout the production facility, to restrict unwanted hazards to cross contaminate the products which are being manufactured in the facility • Show how to tag and number all the equipment, machinery, tools, and other processing aids to keep a proper traceability of the product being manufactured and handled at site. • Demonstrate process of record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameters etc |
| Classroom Aids: | |

Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook, etc.

Tools, Equipment, and Other Requirements

GMP format and guidelines, allergen manual, personal hygiene guidelines, etc.

Module 6: Apply food safety practices at workplace

Mapped to FIC/N9906 v1.0

Terminal Outcomes:

- List the food safety practices at the workplace and the ways to implement them
- Demonstrate the steps to be followed to implement food safety procedures effectively

| Duration: 05:00 | Duration: 10:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • List the various types of health and safety hazards present in the environment • Discuss the possible causes of risk, hazard or accident at the workplace • Elucidate the standard practices and precautions used to control and prevent risks, hazards and accidents at the workplace • Explain requirements to maintain updated facilities, equipment and tools to minimize the risks associated with the products being handled at the site • State the importance of using protective equipment and clothing for specific tasks and work conditions • Discuss the role of organisational protocols in preventing accidents and hazards • Discuss the significance of various types of hazard and safety signs • Explain FSSAI Schedule IV requirements related to Pest Control, Cleaning and Sanitation, Utilities, Waste Disposal, Prevention of Cross Contamination, allergen management, corrective action, preventive actions, food operation control, etc. • Discuss the relevance of checking critical control points and product parameters • Explain the importance of record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters, etc. • Discuss how to report any food safety | <ul style="list-style-type: none"> • Apply appropriate techniques to deal with hazards safely and appropriately • Perform steps for checking critical control points and product parameters • Show how to record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters, etc. • Demonstrate appropriate ways to respond promptly and appropriately to an accident or medical emergency. • Perform the steps to be followed during emergency and evacuation procedures. |

| | |
|---|--|
| and GMP issue to the supervisor, if any | |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook, etc. | |
| Tools, Equipment, and Other Requirements | |
| Helmet, gloves, rubber mat, ladder, neon tester, leather or asbestos gloves, flameproof aprons, flameproof overalls buttoned to neck, cuffless (without folds) trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors, hand and face shields, machine guards, residual current Devices, shields, dust sheets, respirator | |

Module 7: Employability skills

Mapped to DGT/VSQ/N0101, v 1.0

Terminal Outcomes:

- Describe the traits of individuals at the workplace
- Demonstrate apply employability and entrepreneurship skills at the workplace

| Duration: 12:00 | Duration: 18:00 |
|---|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss own strengths and weaknesses and analyse the gaps to ensure continuous improvement. • Discuss the measures to be undertaken to utilise time effectively thereby achieving maximum productivity. • List the characteristics of innovative individuals • List the levels of Hierarchy • List the traits of an effective team • Discuss tips for stress management • Discuss the importance of good work ethics • Discuss how to manage an enterprise • Describe how to plan effective strategies for solving problems and improving work culture within the team. • List the various types of digital marketing techniques. • Discuss the types and importance of e-commerce in promoting businesses. • List the various types of online banking services being used widely. • Discuss the procedure to apply for bank finances • List the elements of a proposal to attract future business opportunities and prospective clients. • Explain how to conduct entrepreneurial programs to identify business opportunities, generate employment and increase clientele. • Understand the make-in-India campaign • Discuss the importance of Swachh Bharat Abhiyan • Understand the importance of | <ul style="list-style-type: none"> • Show how to analyse a situation to identify gaps for improving the work process. • Demonstrate the procedure to plan the time to effectively perform various tasks. • Describe how market research is carried out • Role plays the characteristics of an effective entrepreneur and leader • Demonstrate how to identify new business opportunities • Prepare a sample plan to solve problems and improve productivity at the workplace. • Demonstrate the procedure to operate a computer for digital marketing, e-commerce, branding, etc. • Show how to use services such as NEFT, IMPS, UPI, and RTGS for online banking. |

| | |
|--|--|
| <p>entrepreneurship</p> <ul style="list-style-type: none"> • Describe the traits of a successful entrepreneur • List the types of enterprises • Understand the importance of effective speaking and listening • Discuss the importance of problem-solving • Discuss how to deal with failures • Describe the core keys of marketing • Discuss ways to manage risks at workplace | |
| Classroom Aids: | |
| Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook. | |
| Tools, Equipment and Other Requirements | |
| Nil | |

Module 8: Produce Coconut Water from fresh coconuts

Mapped to FIC/N0207 v 1.0

Terminal Outcomes:

- Prepare for coconut water extraction
- Extract coconut water
- Perform post production activities

| Duration: 10:00 | Duration: 20:00 |
|--|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the methods of harvesting green coconuts and transferring them to the coconut water extraction area • Explain the different techniques used for checking the quality of the coconuts • Discuss the steps to clean and sterilize the coconut to remove any dirt • Discuss the equipment used in this process and their availability and working • Explain the techniques to clean the equipment used in this process • Discuss the process of removing the outer layer using a de-husking machine • Explain the use of coconut drilling machines in coconut water extraction • Discuss the water extraction process step by step • Explain the importance of pasteurization and the techniques of doing it • Discuss the sterilisation process with Ultra High Temperature • Discuss the acceptable and approved preservatives and why they are added • Explain the quality control checks and need for compliance • Discuss the post-production cleaning activities like equipment cleaning and drying, work area cleaning, and following health and safety guidelines while cleaning • discuss the market for packaged foods • explain the FSSAI and GMP guidelines about manufacturing and food safety (KU7-KU8) • discuss the need for always wearing the PPE kits while at work | <ul style="list-style-type: none"> • Demonstrate the working of the de-husking machine • Demonstrate the use of coconut drilling machines • Demonstrate the de-husking process using a video • Demonstrate the water extraction process from the drilled coconut • Demonstrate pasteurisation and sterilization techniques • Demonstrate the process of cleaning the equipment |
| Classroom Aids: | |

Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook

Tools, Equipment, and Other Requirements

Operating procedures for maintenance and cleaning of machines, de-husking machines, drilling machines, cleaning and sanitizing agents, PPE kits for cleaning,

Module 9: Produce Value added products from Coconut kernel

Mapped to FIC/N0206 v 1.0

Terminal Outcomes:

- Produce Desiccated coconut

| Duration: 10:00 | Duration: 20:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <p><u>Desiccated Coconut</u></p> <ul style="list-style-type: none"> • Discuss the techniques to verify the cracked coconuts are free from any dirt and are ready for the next process • Explain the scraping technique to peel of the brown portion of the coconut known as testa • Discuss the steps to cut the kernel to remove the coconut water • Explain the blanching process • Explain the procedure to operate the shredder to grate coconuts o different sizes • Explain the shredded coconut drying process • Discuss the techniques to use the Sievers or sifters to grade the coconut flakes based on their size • Discuss the grinding process using hammer mill or disk mill | <p><u>Desiccated Coconut</u></p> <ul style="list-style-type: none"> • Demonstrate the scraping techniques to peel off the brown layer of coconut namely testa • Demonstrate the blanching process • Demonstrate the shredding techniques • Demonstrate the drying techniques • Demonstrate the use of Sievers or sifters • Demonstrate the use of hammer mill/ disk mill |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook | |
| Tools, Equipment, and Other Requirements | |
| Paring knife, hammer mill/ disk mill, shredders, sievers/sifters, tunnels/belts, blanching tank, clarifiers, centrifugal machine | |

Module 10: Produce coconut Milk

Mapped to FIC/N0206 v 1.0

Terminal Outcomes:

- Produce coconut milk

| Duration: 10:00 | Duration: 20:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the techniques to verify the cracked coconuts are free from any dirt and are ready for the next process • Explain the scraping technique to peel of the brown portion of the coconut known as testa • Discuss the steps to cut the kernel to remove the coconut water • Explain the blanching process • Explain the procedure to operate the shredder to grate coconuts of different sizes • Explain the steps to use hydraulic pressure extractors to press shredded coconut to extract milk • Discuss the sieving/ filtering (membrane filters) process to remove any residual coconut fibres from the milk • Explain the benefits of pasteurization • Explain the cooling process • Explain the mechanical homogenizer or emulsification system to break the fat particles into smaller particles • Explain the quality check process of the milk for color, viscosity, flavor and microbiological safety | <ul style="list-style-type: none"> • Demonstrate the scraping techniques to peel off the brown layer of coconut namely testa • Demonstrate the blanching process • Demonstrate the shredding techniques • Demonstrate the drying techniques • Demonstrate the use of Sievers or sifters • Demonstrate the use of hammer mill/ disk mill • Demonstrate the pasteurization and homogenization techniques |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook | |
| Tools, Equipment, and Other Requirements | |
| Paring knife, hammer mill/ disk mill, shredders, hydraulic pressure extractors, sievers/sifters, clarifiers, homogenizers | |

Module 11: Produce Coconut Oil

Mapped to FIC/N0206 v 1.0

Terminal Outcomes:

- Produce coconut oil

| Duration: 10:00 | Duration: 20:00 |
|--|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <p><u>Coconut Oil-Cold Press</u></p> <ul style="list-style-type: none"> • Discuss process of grating coconut meat into an industrial grade milk extractor (which applies centrifugal force) to separate milk from the coconut meat • Explain the fermentation process of the filtered milk and the resultant products • Explain the need for skimming and the steps to use the automated skimming equipment • Explain the necessity for the evaporation process • Explain the filtering process and collect the filtered oil in large containers <p><u>Coconut Oil-Hot Press method</u></p> <ul style="list-style-type: none"> • Explain how to pick the clean, dry, good quality copra for oil extraction • Explain the use of pulverisers to crush coconut meat or copra into smaller particles • Discuss the heating process to reduce the moisture content by heating the particles of copra using a dryer or direct flame • Explain the use of an expeller machine to extract oil from the crushed coconut • Discuss the process of collecting the oil in the barrel of the machine and expelling the other solid wastes • Discuss the filtration system to remove any impurities in the extracted oil | <ul style="list-style-type: none"> • Demonstrate the centrifugal method • Demonstrate the fermentation of the coconut milk to separate the layers of cream, oil, and water • Demonstrate the skimming process in the extraction of coconut oil using the cold press method • Demonstrate the techniques to use the pulverisers to crush the coconut meat • Demonstrate the heating method to reduce the moisture content • Demonstrate how to extract the oil from the crushed coconut using expeller machines |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation slides, Participant Handbook | |
| Tools, Equipment, and Other Requirements | |
| Paring knife, hammer mill/ disk mill, centrifuge machine, heating system, automated skimming equipment, pulverisers, expeller machines | |

Module 12: Produce Coconut Jaggery

Mapped to FIC/N0208 v 1.0

Terminal Outcomes:

- Produce Coconut Jaggery

| Duration: 10:00 | Duration: 20:00 |
|--|--|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the process of collecting coconut sap from coconut Palm • Discuss the steps to get a hot syrup • Explain the clarification process • Explain the boiling and evaporation of hot syrup • Discuss the quality test of the jaggery mixture namely sweetness, consistency and texture- • Discuss the different shapes and sizes of mould used for giving shape to jaggery • Discuss the use of banana leaves or perching paper in moulding | <ul style="list-style-type: none"> • Demonstrate the process of coconut sap extraction from coconut palm • Demonstrate the evaporation process • Demonstrate the preparation of hot syrup from coconut sap • Perform quality test of the finished coconut jaggery • Demonstrate the moulding process of jaggery mixture |
| Classroom Aids: | |
| Training kit (Trainer guide, Presentations), Whiteboard, Marker, Projector, Laptop, Presentation Slides, Participant Handbook | |
| Tools, Equipment, and Other Requirements | |
| Operating procedures for maintenance and cleaning, de-husking machines, conveyor belts, boiling tank, clarifiers, cleaning and sanitizing agents, PPE kits for cleaning, waste disposal bins | |

Annexure

Trainer Requirements

| Trainer Prerequisites | | | | | | |
|-----------------------------------|-------------------------|------------------------------|---------------------------------|---------------------|--|---------|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| Graduate | Science/Food Technology | 3 | Food Processing /Packaged Foods | 1 | Training individuals on Food processing and Packaged foods | |

| Trainer Certification | |
|---|---|
| Domain Certification | Platform Certification |
| "Junior Coconut Processing Operator-Value Added Food Products", "FIC/Q8505 V1.0", Minimum accepted score is 80% | Recommended that the Trainer is certified for the Job Role: "Trainer" (VET & SKILLS), mapped to the Qualification Pack: "MEP/Q2601", V.2. Minimum accepted SCORE IS 80 % as per SSC guidelines. |

Assessor Requirements

| Assessor Prerequisites | | | | | | |
|-----------------------------------|-------------------------|------------------------------|---|---------------------|---|---------|
| Minimum Educational Qualification | Specialization | Relevant Industry Experience | | Training Experience | | Remarks |
| | | Years | Specialization | Years | Specialization | |
| Graduate | Science/Food Technology | 3 | Food Processing Technology/Packaged Foods | 1 | Training individuals on Food Processing Technology/Packaged Foods | |

| Assessor Certification | |
|--|---|
| Domain Certification | Platform Certification |
| "Junior Coconut Processing Operator-Value Added Food Products", "FIC/Q8505, V1.0", Minimum accepted score is 80% | Recommended that the Assessor is certified for the Job Role: "Assessor" (VET & SKILLS), mapped to the Qualification Pack: "MEP/Q2701", V-2. Minimum accepted SCORE IS 80 % as per SSC guidelines. |

Assessment Strategy

This section includes the processes involved in identifying, gathering and interpreting information to evaluate the learner on the required competencies of the program.

Assessment will be based on the concept of Independent Assessors empanelled with Assessment Agencies, identified, selected, trained and certified on Assessment techniques. These assessors would be aligned to assess as per the laid down criteria.

The Assessment Agency would conduct assessment only at the training centres of the Training Partner or designated testing centres authorised by FICSI.

Ideally, the assessment will be a continuous process comprising three distinct steps:

A. Mid-term assessment

B. Term / Final Assessment

Each National Occupational Standard (NOS) in the respective QPs will be assigned weightage. Each Performance Criterion in the NOS will be assigned marks for theory and / or practical based on the function's relative importance and criticality.

This will facilitate the preparation of question bank / paper sets for each QPs. Each of these paper sets / question banks so created by the Assessment Agency will be validated by the industry subject matter experts through FICSI, especially about the practical test and the defined tolerances, finish, accuracy, etc.

The following tools are proposed to be used for final assessment:

- i. Written Test: This will comprise (i) True / False Statements, (ii) Multiple Choice Questions, and (iii) Matching Type Questions. An online system for this will be preferred.
- ii. Practical Test: This will comprise a test job to be prepared as per project briefing following appropriate working steps, using necessary tools, equipment and instruments. Through observation, it will be possible to ascertain the candidate's aptitude, attention to detail, quality consciousness, etc. The end product will be measured against the pre-decided MCQ filled by the Assessor to gauge his skill achievements.
- iii. Structured Interview: This tool will be used to assess the conceptual understanding and the behavioural aspects as regards the job role and the specific task at hand.

| Term | Description |
|------------------------------|---|
| Declarative Knowledge | Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood to accomplish a task or to solve a problem. |
| Key Learning Outcome | The key learning outcome is the statement of what a learner needs to know, understand and be able to do to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in knowledge, understanding (theory) and skills (practical application). |
| OJT (M) | On-the-job training (Mandatory): trainees are mandated to complete specified hours of training on-site |
| OJT (R) | On-the-job training (Recommended); trainees are recommended the specified hours of training on-site |
| Procedural Knowledge | Procedural knowledge addresses how to do something or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills. |
| Training Outcome | Training outcome is a statement of what a learner will know, understand and be able to do upon completing the training . |
| Terminal Outcome | Terminal outcome is a statement of what a learner will know, understand and be able to do upon completing a module . A set of terminal outcomes helps to achieve the training outcome. |

Acronyms and Abbreviations

| Term | Description |
|-------|--|
| QP | Qualification Pack |
| NSQF | National Skills Qualification Framework |
| NSQC | National Skills Qualification Committee |
| NOS | National Occupational Standards |
| TVET | Technical and Vocational Education and Training |
| SOP | Technical and Vocational Education and Training |
| OH&S | Occupational Health and Safety |
| PPE | Personal Protective Equipment |
| HACCP | Hazard Analysis and Critical Control Points |
| VACCP | Vulnerability Assessment Critical Control Points |
| TACCP | Threat Assessment Critical Control Points |
| FSSAI | Food Safety and Standards Authority of India |
| FIFO | First In, First Out |
| FEFO | First Expire First Out |
| GMP | Good Manufacturing Practices |
| GHP | Good Hygiene Practices |
| CPR | Cardiopulmonary Resuscitation |