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FICSI
Food Industry Capacity and Skill Initiative

Participant Handbook

Sector
Food Processing

Sub-Sector
Fruits and Vegetables Processing

Occupation
Pickle Making Technician

Reference ID: **Version 1.0, FIC/Q0102**
NSQF Level 4



**Pickle Making
Technician**

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Shri Narendra Modi
Prime Minister of India

“ Skilling is building a better India.
If we have to move India towards
development then Skill Development
should be our mission. ”



Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

FOOD INDUSTRY CAPACITY AND SKILL INITIATIVE

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Pickle Making Technician**' QP No. '**FIC/ Q0102 NSQF Level 4**'

Date of Issuance: **May 7th, 2016**

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*Valid up to the next review date of the Qualification Pack or the
'Valid up to' date mentioned above (whichever is earlier)

Malika Verma

Authorised Signatory
(CEO, FICSI)

About this Book

This Participant Handbook is designed to enable training for the specific Qualification Pack(QP). Each National Occupational (NOS) is covered across Unit/s.

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. Symbols used in this book are described below.

This reference book has been developed for use by participants of the skill development course for a Pickle Making Technician being implemented by FICSI through its affiliated training service providers. The contents of this book are completely aligned to the Qualification Pack for the role of a Pickle making Technician NSQF level 4 and has been divided into Units corresponding to each NOS. The contents of the book have been developed by NIFTEM (National Institute of Food Technology, Entrepreneurship and Management, Kundli), funded by MOFPI, Government of India.

The Pickle Making Technician is responsible for preparing different types of pickles from various fruits and vegetables. This role is similar for processing all types of pickles in manual and machine operated units.

Symbols Used



Key Learning
Outcomes



Steps



Time



Tips



Notes



Unit
Objectives

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4. Pickle Making

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- Unit 4.7 - Packing and Packaging
- Unit 4.8 - Storage of Finished Products
- Unit 4.9 - Post-Production Cleaning and Maintenance



FIC/N0106
FIC/N0107

Key Learning Outcomes

At the end of this module, you will be able to:

- Plan the production schedule as per organizational standards and instructions
- Organize for raw material, packaging materials, manpower, equipment, and machinery for the scheduled production
- Identify the raw materials required for production as per production schedule and formation
- Organize quality raw material as per production process and company standards
- Illustrate the methods for storing raw material for later use
- Plan the production sequence to maximize capacity utilization of resources, manpower, and machinery
- Calculate batch size and prioritize urgent orders based on the production schedule and machine capacity
- Check the conformance of raw material quality to company standards
- Check the raw material for quality and grade
- Prepare the raw material for production
- Illustrate the process for curing raw material and storing cured raw material
- Illustrate the different methods of preparation of pickle
- Illustrate the basic categories of packing
- Illustrate the various types of packaging materials used for pickles
- Illustrate the factors for selecting packaging materials
- Illustrate the storage procedures for finished goods
- Explain the rules for stock rotation of finished goods
- Arrange for proper cleaning of production area, equipment, tools and equipment used
- Organize periodic maintenance of all production machinery

Notes

UNIT 4.1: Production Planning Process

Unit Objectives

At the end of this module, you will be able to:

- Plan the production schedule as per organizational standards and instructions
- Organize for raw material, packaging materials, manpower, equipment, and machinery for the scheduled production

Unit 4.1.1: Production Plan

The following chart provides an overview of the production planning process:

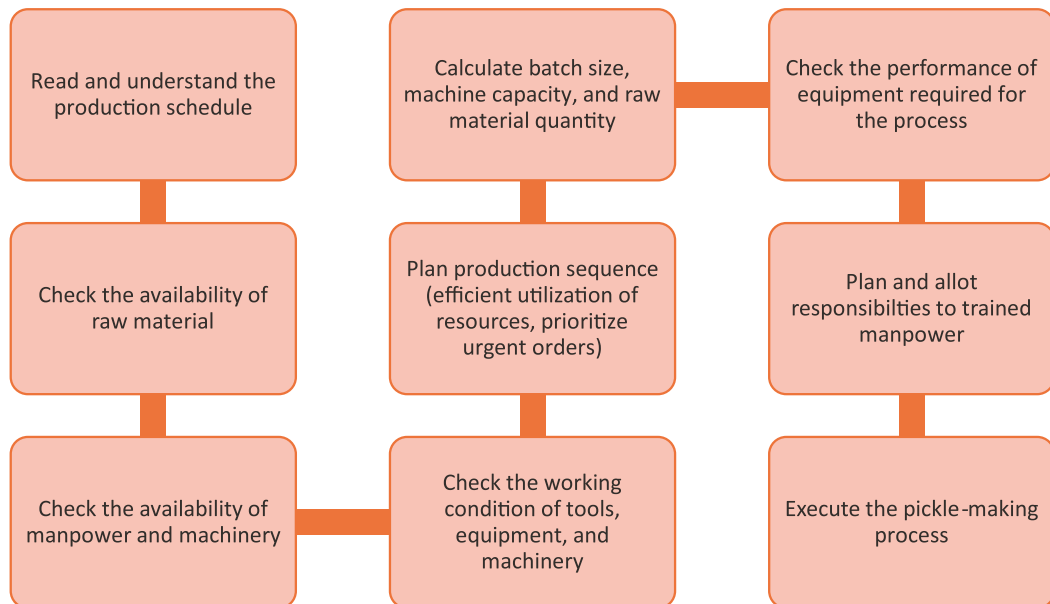


Fig 4.1: Production Plan

UNIT 4.2: Selection of Raw Material

Unit Objectives

At the end of this module, you will be able to:

- Identify the raw materials required for production as per production schedule and formation
- Organize quality raw material as per production process and company standards
- Illustrate the methods for storing raw material for later use

Unit 4.2.1: Raw Material Procurement and Storage

The pickle industry in India uses a wide range of fruits, vegetables, herbs, and spices. Fruits like lemons are available fresh throughout the year. However, fruits like mango or jackfruit are available only in some parts of the country and during a particular season. The same applies to vegetables. Hence, it is important to choose only those fruits and vegetables that are in the best condition during procurement.

Listed here are some do's and don'ts to follow when procuring raw material for the pickling process:

DO'S	DON'TS
<ul style="list-style-type: none"> • Select only good quality fruits and vegetables 	<ul style="list-style-type: none"> • Do not select rotten, crushed, and damaged fruits and vegetables
<ul style="list-style-type: none"> • Select those fruits and vegetables that have not been infested in any way 	<ul style="list-style-type: none"> • Do not procure insect-infected vegetables and fruits
<ul style="list-style-type: none"> • Select fruits and vegetables that come from reliable sources 	<ul style="list-style-type: none"> • Do not choose fruits and vegetables from unknown sources
<ul style="list-style-type: none"> • Select fruits and vegetables from suppliers that use the right amount of pesticides/insecticides on them 	<ul style="list-style-type: none"> • Do not choose fruits and vegetables that have residues of pesticides/insecticides

Table 4.1: Raw Material Procurement and Storage

After procuring raw material, it goes to the processing unit for production. In some cases, like gherkins, the manufacturing unit and the processing area are located close to each other. This is because:

- There is continuous demand for raw materials
- Delay in production may lead to losses

In case of other fruits and vegetables, excess raw material and raw material that maybe processed later is stored in clean, airy, well-ventilated storage areas within the food processing unit.

Shown below is a chart of raw materials, their time of availability, and the products made from them

Unit 4.2.2: List of Raw Material:

Fruits and vegetables (Raw Material)	Availability	Used in
Mango	January to May	Mango pickle, mixed pickle
Lemon	Throughout the year	Lemon pickle, mixed pickle
Lime	November to February	Lime pickle
Karonda	July to August	Karonda pickle
Jackfruit	March to June	Jackfruit pickle
Pear	April to June	Pear pickle
Local fruits like Ber, Kaitha, Badahal, Carambola	Seasonal	Fruit pickle
Carrot	October to March	Carrot pickle
Chillies (Green and Red)	October to March, July to September	Chilly pickle, mixed pickle, stuffed pickle
Green Pepper	September to October	Green Pepper pickle
Long Pepper	June to August	Long Pepper pickle
Eggplant/Aubergine (Brinjal)	October to March, July to September	Brinjal pickle, stuffed pickle
Tomato	October to April	Tomato pickle, stuffed pickle
Onion	March to May	Onion pickle
Garlic	March to April	Garlic pickle, mixed pickle
Ginger	April to May	Ginger pickle, mixed pickle
Bamboo Shoot	July	Bamboo pickle
Gongura	July to September	Gongura pickle

Table 4.2: List of Raw Material

Notes



UNIT 4.3: Plan Production Sequence

Unit Objectives

At the end of this module, you will be able to:

- Plan the production sequence to maximize capacity utilization of resources, manpower, and machinery
- Calculate batch size and prioritize urgent orders based on the production schedule and machine capacity
- Check the conformance of raw material quality to company standards

Unit 4.3.1: Planning the Production Sequence

The main ingredients used in pickle making are fruits and vegetables. Different types of pickles are made based on the maturity of fruits and vegetables.

Ingredients used in pickle making are divided into groups based on their roles. The following table explains this classification

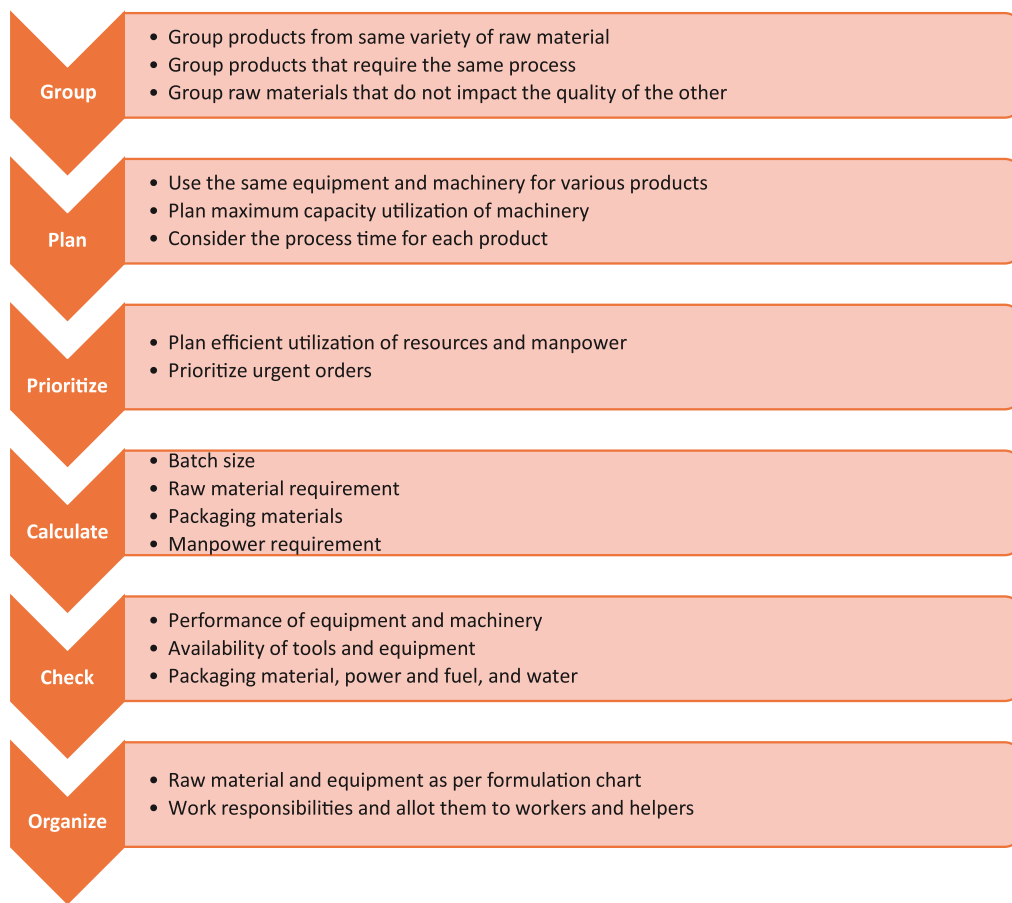


Table 4.3: Planning the Production Sequence

UNIT 4.4: Handling of Raw Materials

Unit Objectives

At the end of this module, you will be able to:

- Check the raw material for quality and grade
- Prepare the raw material for production

Unit 4.4.1: How to Handle Raw Material

Before starting with the actual process of pickle-making, it is important to understand how to handle raw materials that are procured from the farmer/supplier. Given below is a simple chart that shows the process the raw materials undergo before the pickling process:

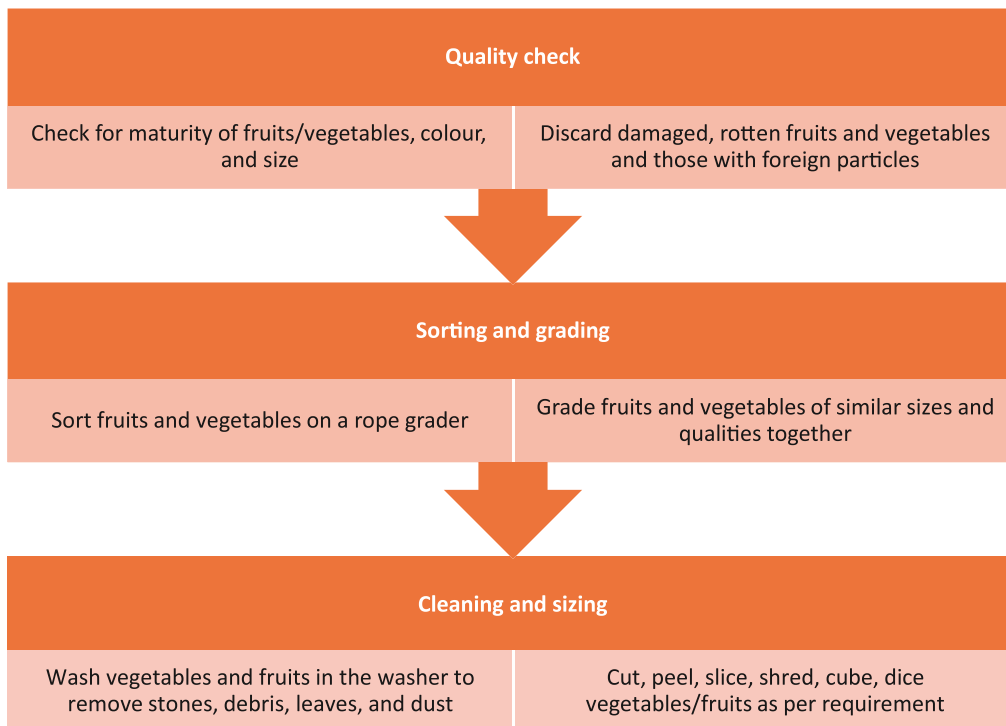


Fig 4.2: Raw Material Handling

UNIT 4.5: Curing of Raw Materials for Pickle-Making

Unit Objectives

At the end of this module, you will be able to:

- Illustrate the process for curing raw material and storing cured raw material

Unit 4.5.1: The Process of Curing

Curing is the process in which cleaned and cut vegetables and fruits are immersed in brine. Cured raw material is stored in barrels for some time. After the vegetable/fruit is properly cured it is sent for further processing.

The following chart gives a detailed overview of the process of curing:

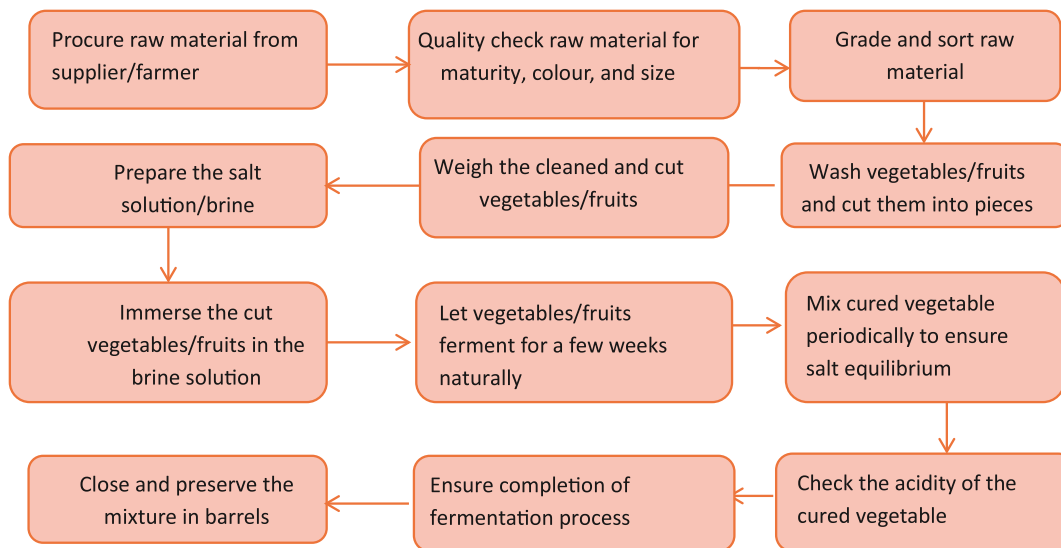


Fig 4.3: Curing Process

UNIT 4.6: Different Methods of Preparing Pickles

Unit Objectives

At the end of this module, you will be able to:

- Illustrate the different methods of preparation of pickle

Unit 4.6.1: Preparation of Pickle in Oil

The following chart explains the process of preparing pickle in oil.

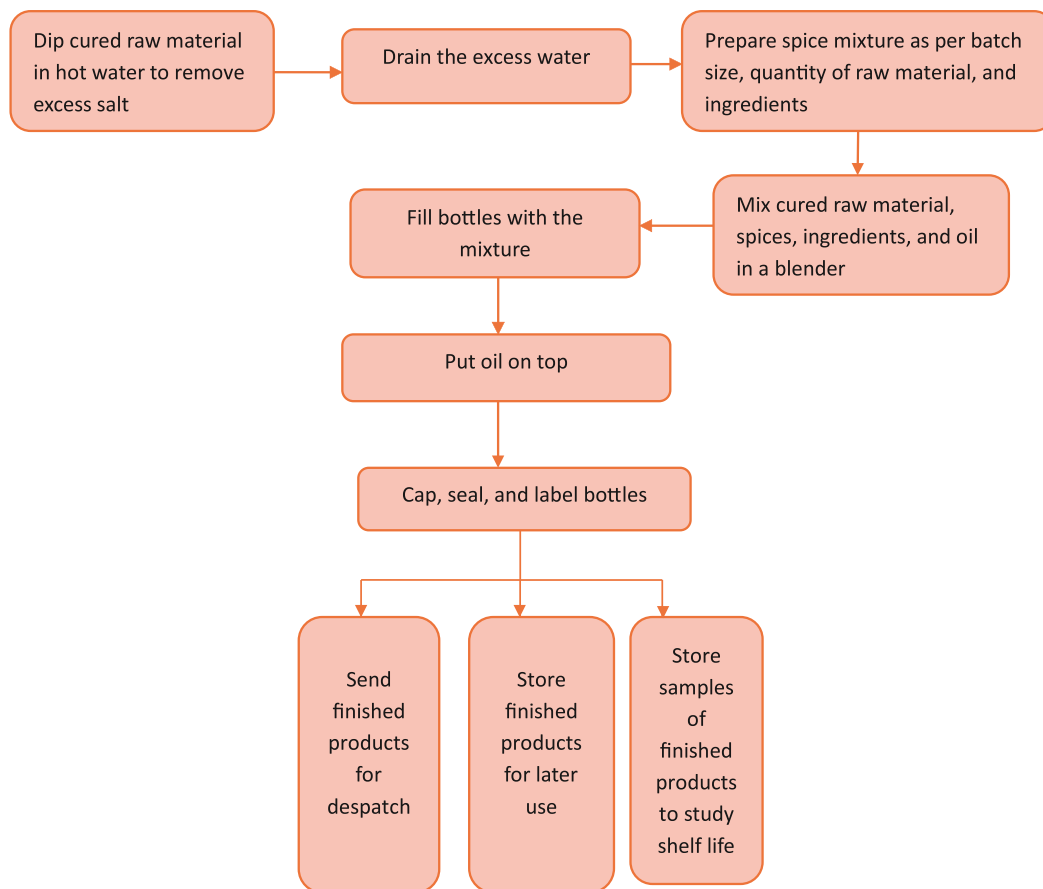


Fig 4.4: Preparation of Pickle in Oil

Unit 4.6.2: Preparation of Pickle in Brine

This chart explains the process of preparing pickle in brine solution.

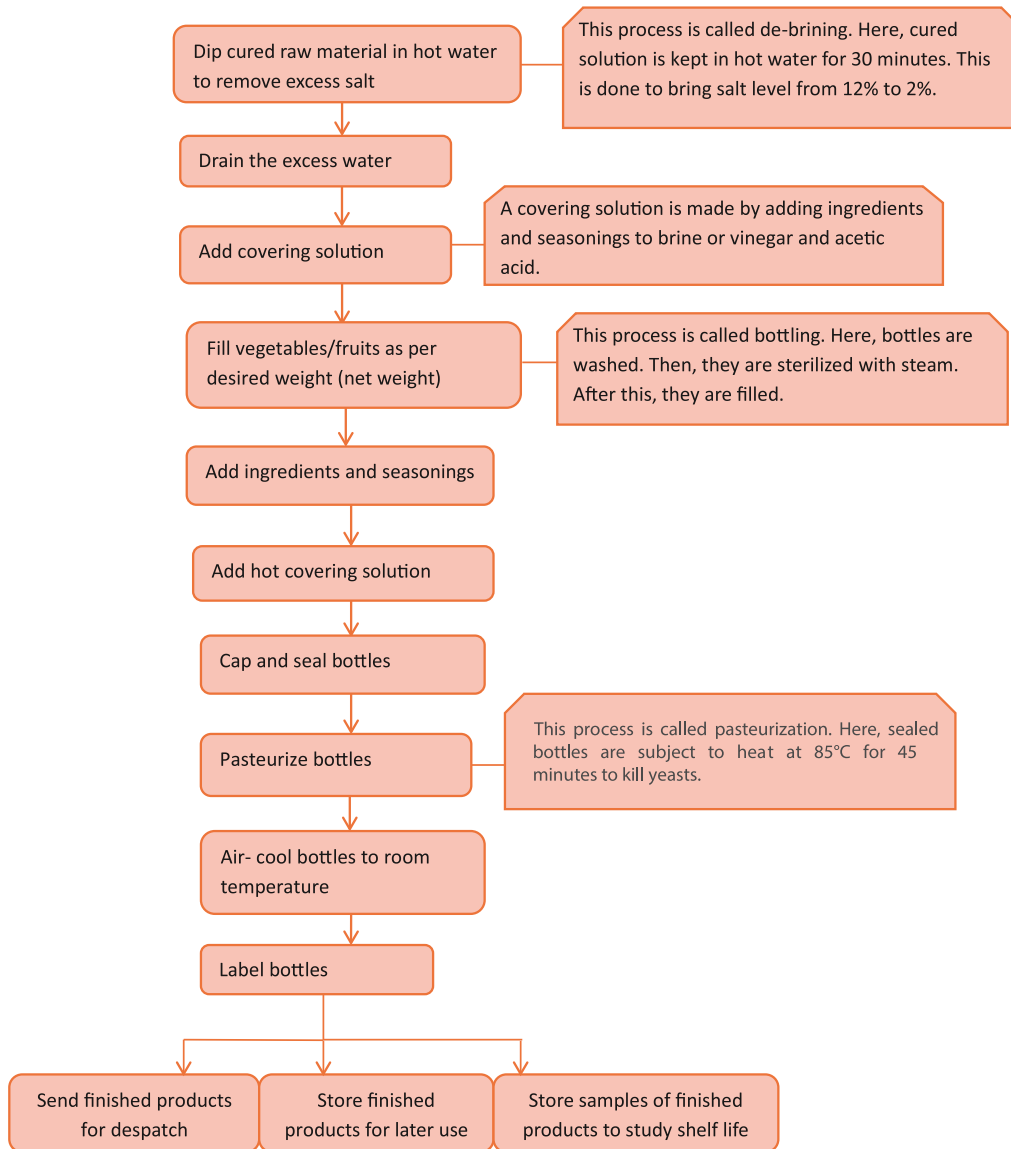


Fig 4.5: Preparation of Pickle in Brine

Unit 4.6.3: Preparation of Pickle in Vinegar

This chart explains the process of preparing pickle in vinegar.

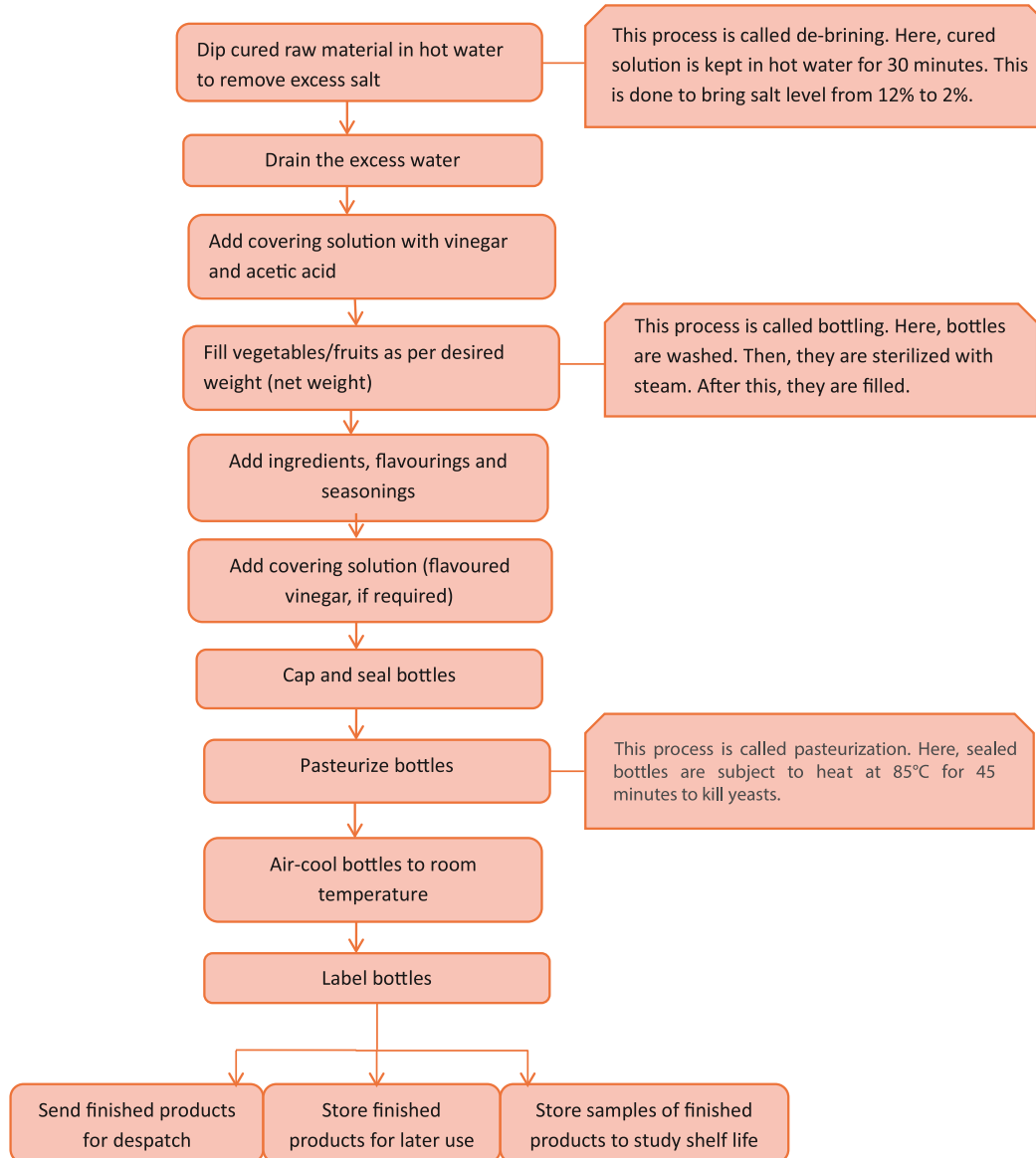


Fig 4.6: Preparation of Pickle in Vinegar

UNIT 4.7: Packing and Packaging

Unit Objectives

At the end of this module, you will be able to:

- Illustrate the basic categories of packing
- Illustrate the various types of packaging materials used for pickles
- Illustrate the factors for selecting packaging materials

Unit 4.7.1: Packing of Finished Products

The finished product is filled in containers meant for packaging. Depending on the demand, the market and the size of the industry packing is categorised as follows:

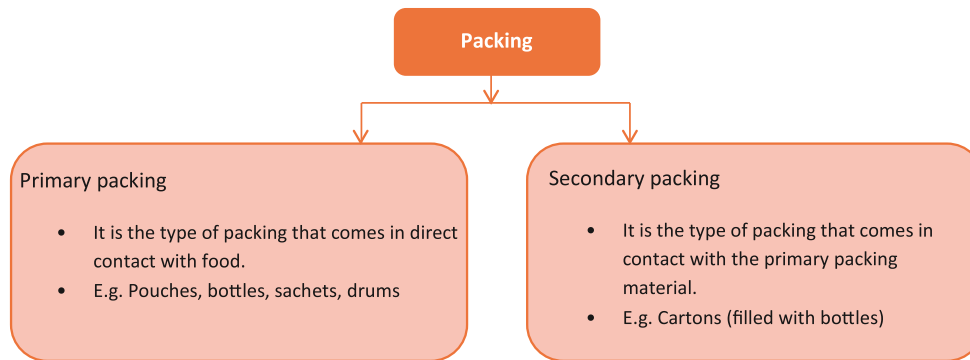


Fig 4.7: Packing of Finished Products

When selecting the packaging material to pack the finished products, one must ensure that the packaging material is:

- Non-toxic and compatible with food
- Offers sanitary protection
- Protects the product from moisture, gas and odour
- Protects the product from light, temperature, humidity and rain
- Protects the product from insects, mites, bacteria, rodents and birds
- Is transparent and tamper-proof
- Offers ease of opening, pouring, resealing and disposing
- Is compatible with the size, shape and appearance standards set by the organisation
- Is low on cost

UNIT 4.8: Storage of Finished Products

Unit Objectives

At the end of this module, you will be able to:

- Illustrate the storage procedures for finished goods
- Explain the rules for stock rotation of finished goods

Unit 4.8.1: Methods of Storing Finished Products

The pickle processing industry follows the JIT (Just-In-Time) system. Here, finished product is dispatched to the distributor, retail industry or institution as soon as the product is ready. A carton of processed pickle can be stored for a maximum of 2 days in the storehouse.

In case of cured pickles, where the flavours and oil is mixed as and when the demand arises, stock rotation systems like FIFO and FEFO are applied.

1. FIFO (First-In-First-Out) is a stock rotation system that dispatches processed food depending on the order in which it is produced.
2. FEFO (First-Expired-First-Out) is a stock rotation system wherein products that need to be consumed earlier are shipped first.

Notes

UNIT 4.9: Post-Production Cleaning and Maintenance

Unit Objectives

At the end of this module, you will be able to:

- Arrange for proper cleaning of production area, equipment, tools and equipment used
- Organize periodic maintenance of all production machinery

Unit 4.9.1: Post-Production Cleaning Method

This explains the method of cleaning the work area after production.

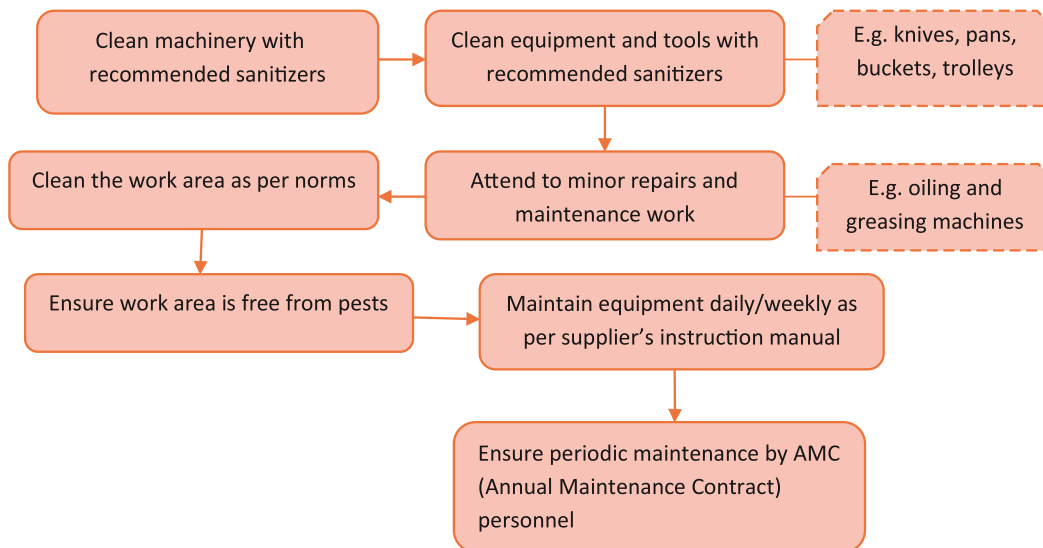


Fig 4.8: Post-Production Cleaning Method