



Model Curriculum

QP Name: Jam, Jelly and Ketchup Processing Technician

QP Code: FIC/Q0103

QP Version: 3.0

NSQF Level: 3

Model Curriculum Version: 3.0

Food Industry Capacity and Skill Initiative (FICSI)
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Training Parameters

Sector	Food Processing
Sub-Sector	Fruits And Vegetables
Occupation	Processing-Fruits and Vegetables
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7514.0700
Minimum Educational Qualification and Experience	<ol style="list-style-type: none"> Grade 8 pass and pursuing continuous schooling in regular school with vocational subject OR 8th grade pass with 1-year of relevant experience OR 5th grade pass with 4 years of relevant experience OR Ability to read and write with 5 years relevant experience OR Previous relevant qualification of NSQF Level 2 with 1 years of relevant experience OR Previous relevant qualification of NSQF Level 2.5 with 6 months of relevant experience
Pre-Requisite License or Training	<ol style="list-style-type: none"> Food standards for fruit and vegetable products Method of preservation of fruits and vegetables Handling fruits and vegetables, packaging and storage techniques Quality assessment of raw material, packaging materials and finished products Operation and maintenance of processing machineries and equipment Waste management GMP HACCP QMS Computer basics and ERP system followed by the organization Training in Food Safety Standards and Regulations (as per FSSAI) (Mandatory)
Minimum Job Entry Age	18 years

Last Reviewed On	29/07/2021
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NSQC Approval Date	29/07/2021
QP Version	3.0
Model Curriculum Creation Date	04/05/2021
Model Curriculum Valid Up to Date	28/07/2024
Model Curriculum Version	3.0
Minimum Duration of the Course	300 hours
Maximum Duration of the Course	300 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 learner will be able to:

- Maintain work area and process machineries to produce jam, jelly and ketchup
- Prepare raw material to produce jam, jelly & ketchup,
- Process fruits and vegetables to produce jam, jelly and ketchup manually or mechanically
- Document and maintain records related to jam, jelly and ketchup processing
- Apply the food safety and hygiene practices at the workplace

Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
FIC/N0109 Prepare and maintain work area and process machineries for jam, jelly and ketchup processing NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 1: Introduction to the training program	04:00 Hours	00:00 Hours	00:00 Hours	00:00 Hours	04:00 Hours
Module 2: Prepare work area and equipment for jam, jelly and ketchup processing	06:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	26:00 Hours
FIC/N0110 Prepare for production of jam, jelly and ketchup NOS Version No.: 2.0 NSQF Level: 3	20:00 Hours	40:00 Hours	00:00 Hours	00:00 Hours	60:00 Hours

Module 3: Prepare for Production of Jam, Jelly and Ketchup	20:00 Hours	40:00 Hours	00:00 Hours	00:00 Hours	60:00 Hours
FIC/N0111 Produce jam, Jelly and ketchup NOS Version No.: 2.0 NSQF Level: 3	40:00 Hours	80:00 Hours	00:00 Hours	00:00 Hours	120:00 Hours
Module 4: Carry out production of jam, jelly and ketchup as per production needs	30:00 Hours	60:00 Hours	00:00 Hours	00:00 Hours	90:00 Hours
Module 5: Organizational Standards and Norms	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
FIC/N0112 Complete documentation and record keeping related to production of jam, jelly and ketchup NOS Version No.: 2.0 NSQF Level: 3	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 6: Complete documentation and record keeping related to production of jam, jelly and Ketchup	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
FIC/N9001 Ensure Food safety, hygiene and sanitation for processing food products NOS Version No.: 1.0 NSQF Level: 4	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 7: Food safety, hygiene and sanitation for processing food products	10:00 Hours	20:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
DGT/VSQ/N0101 Employability Skills NOS Version No.: 1.0 NSQF Level: 2	12:00 Hours	18:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Module 8: Employability Skills	12:00 Hours	18:00 Hours	00:00 Hours	00:00 Hours	30:00 Hours
Total Duration	102:00 Hours	198:00 Hours	00:00 Hours	00:00 Hours	300:00 Hours

Module Details

Module 1: Introduction to the training program

Mapped to FIC/N0109, v 2.0

Terminal Outcomes:

- Discuss the food processing industry in brief
- List the opportunities available to jam, jelly and ketchup processing technicians in the food industry

Duration: 04:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Define food processing. • List the various sub sectors of food processing industry. • Discuss the opportunities available to fruits and vegetables processing technicians in the food industry. • Explain different types of fruits and vegetables processing. • Explain the need for processing of fruits and vegetables. • List the various units within a fruits and vegetables processing unit. • Explain the methods of testing fruits and vegetables for accepted quality standards. 	
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Prepare work area and equipment for jam, jelly and ketchup processing

Mapped to FIC/N0109, v 1.0

Terminal Outcomes:

- Prepare work area and process machineries to produce jam, jelly & ketchup

Duration: 06:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the materials and equipment used in the cleaning and maintenance of the work area. • List the common detergents and sanitizers used in cleaning work area and machineries. • Explain the methods of cleaning and sanitization. • Describe the functions to be carried out before starting production. • List the different types of maintenance procedures. 	<ul style="list-style-type: none"> • Perform the process of preparing the work area for scheduled production. • Conduct minor repairs and faults in process machineries. • Prepare the machines and tools required for production.
Classroom Aids	
Board/Chart paper/ Laptop and Projector, Trainer Handbook, Participant handbook, etc	
Tools, Equipment and Other Requirements	
Fruit Washer, Peeler, Fruit Pulper , Juice Extractor, Clarifier, Filter, Pasteurizer, Steam Jacketed Kettles, Packaging Machines, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer	

Module 3: Prepare for production of jam, jelly and ketchup

Mapped to FIC/N0110, v 1.0

Terminal Outcomes:

- Prepare raw material to produce jam, jelly & ketchup

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the process for planning of the batch size. 	<ul style="list-style-type: none"> • Demonstrate how to plan the production process • Demonstrate how to calculate the process time for effective utilization of machineries • Perform production planning for effective utilization of raw material and machineries • Identify the raw material, machineries and packaging material requirement. • Check the performance of all equipment. • Check the conformance of raw material to the industry standards. • Demonstrate the weighing of raw materials. • Explain how to plan batch size considering full capacity utilization of equipment • Demonstrate the calculation of raw material required for getting desired quantity of finished product
<ul style="list-style-type: none"> • Classroom Aids 	
Board/Chart paper/ Laptop and Projector, Trainer Handbook, Participant handbook, etc	
Tools, Equipment and Other Requirements	
Fruit Washer, Peeler, Fruit Pulper, Juice Extractor, Clarifier, Filter, Pasteurizer, Steam Jacketed Kettles, Packaging Machines, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer	

Module 4: Carry out production of Jam, Jelly and Ketchup as per production needs

Mapped to FIC/N0111, v 2.0

Terminal Outcomes:

- Discuss the stages involved in the production of jam, jelly and ketchup
- Demonstrate the tasks to be performed for producing jam, jelly and ketchup

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss how to check the quality of fruits and vegetables. 	<ul style="list-style-type: none"> • Perform a check if all the machineries are clean and in good working conditions. • Demonstrate assembling of all components of machines. • Perform a pre check on all machineries. • Check the quality of fruits and vegetables Perform the washing of fruits and vegetables before they go for processing. • Perform pulping and juice extraction from fruits and vegetables. • Demonstrate the technique/ process of preparation of jam/ jelly/ ketchup. • Demonstrate the packaging and analyze the quality of the finished product . • Demonstrate cleaning the machineries used with recommended sanitizers following CIP (clean-in place) procedure. • Demonstrate cleaning the equipment and tools used using recommended cleaning agents and sanitizers.
Classroom Aids	
Board/Chart paper/ Laptop and Projector, Trainer Handbook, Participant handbook, etc.	
Tools, Equipment and Other Requirements	
Fruit Washer, Peeler, Fruit Pulper , Juice Extractor, Clarifier, Filter, Pasteurizer, Steam Jacketed Kettles, Packaging Machines, Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, sanitizer	

Module 5: Organizational Standards and Norms

Mapped to FIC/N0111, v 2.0

Terminal Outcomes:

- Apply the principles of food safety and hygiene in the work environment

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the roles and responsibilities of a jam, jelly and ketchup processing technician. • Discuss how to conduct yourself at the workplace. 	<ul style="list-style-type: none"> • Apply personal hygiene and sanitation guidelines. • Apply food safety hygiene standards in the work environment.
Classroom Aids	
Board/Chart paper/ Laptop and Projector, Trainer Handbook, Participant handbook, etc	
Tools, Equipment and Other Requirements	
Protective Gloves, Head Caps, Lab Coat, Safety Goggles, Safety Boots, Mouth Masks, Sanitizer	

Module 6: Complete documentation and record keeping related to production of jam, jelly and ketchup

Mapped to FIC/N0112, v 2.0

Terminal Outcomes:

- Document and maintain records related to jam, jelly & ketchup processing

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> Explain the need for documenting and maintaining records of raw materials, processes and finished products. Discuss the method of documenting and recording the details of raw material to final finished product. 	<ul style="list-style-type: none"> Demonstrate the process of documenting records of production plan, process parameters, and finished product.
Classroom Aids	
Board/Chart paper/ Laptop and Projector, Trainer Handbook, Participant handbook, etc	
Tools, Equipment and Other Requirements	
Food Safety Manual, Log Books, Computer/Laptop	

Module 7: Food safety, hygiene and sanitation for processing food products

Mapped to FIC/N9001, v 1.0

Terminal Outcomes:

- Discuss the importance of health and safety at the workplace
- Demonstrate the tasks to be performed for ensuring health and safety at the workplace

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the importance of safety, hygiene and sanitation in the production of jam, jelly and ketchup industry • Discuss the method of documenting and recording the details of raw material to final finished product 	<ul style="list-style-type: none"> • Apply the industry standards to maintain a safe and hygiene workplace • Apply HACCP principles to eliminate food safety hazards in the process and products • Apply safety practices in the work area
Classroom Aids	
Food Safety Manual, Log Books, etc.	
Tools, Equipment and Other Requirements	
Protective Gloves, Head Caps, Aprons, Safety Goggles, Safety Boots, Mouth Covers, Sanitizer	

Module 8 : Employability Skills

Mapped to DGT/VSQ/N0101, v 1.0

Terminal Outcomes:

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

Duration: 12:00	Duration: 18:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of Employability Skills in meeting the job requirements. • Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen. • Discuss 21st century skills. • Display positive attitude, self - motivation, problem solving, time management skills and continuous learning mindset in different situations. • Discuss the significance of reporting sexual harassment issues in time • Discuss the significance of using financial products and services safely and securely. • Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws • Explain the importance of managing expenses, income, and savings. • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely 	<ul style="list-style-type: none"> • Show how to practice different environmentally sustainable practices • Use appropriate basic English sentences/phrases while speaking • Demonstrate how to communicate in a well - mannered way with others • Demonstrate working with others in a team • Show how to conduct oneself appropriately with all genders and PwD • Show how to operate digital devices and use the associated applications and features, safely and securely • Create a biodata • Use various sources to search and apply for jobs

- Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges
- Differentiate between types of customers
- Explain the significance of identifying customer needs and addressing them
- Discuss the significance of maintaining hygiene and dressing appropriately
- Discuss the significance of dressing up neatly and maintaining hygiene for an interview
- Discuss how to search and register for apprenticeship opportunities

Classroom Aids:

Computer, Projection Equipment, PowerPoint Presentation and software, Facilitator's Guide, Participant's Handbook

Tools, Equipment and Other Requirements

Computer/laptop.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B.Sc or graduate/B.Tech/BE	Food technology or food engineering	3	Food processing	1	Food processing	
M.Sc/M.Tech/ME	Food technology or food engineering	2	Food processing	1	Food processing	
Diploma /certificate course	Food Technology / Food Engineering /packaging/ Home science, or allied sector	4	Food processing	1	Food processing	
CITS Certification done into Fruits and Vegetables Processing						

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Jam, Jelly and Ketchup Processing Technician” mapped to QP: “FIC/Q0103, v3.0”. Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q2601”. Minimum accepted score is 80 % as per FICSI guidelines

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
M.Sc/M.Tech/ME B.Sc or graduate/B.Tech/BE	Food technology or food engineering Food technology/ Home Science	2	Food processing	1	Food processing	
		3	Food processing	2	Food processing	
Diploma	Hotel management/ Food Science/ Home Science	4	Food processing	2	Food processing	
M.Sc/M.Tech/ME	Food technology or food engineering	2	Food processing	1	Food processing	

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: "Jam, Jelly and Ketchup processing technician" mapped to QP: "FIC/Q0103, v3.0". Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: "Assessor", mapped to the Qualification Pack: "MEP/Q2701". Minimum accepted score as per MEPSC guidelines is 80%.

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.

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, as well as the selected elective NOS/set of NOS. OR
4. Assessment will be conducted for all compulsory NOS, as well as the selected optional NOS/set of NOS.
5. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
6. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
7. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
8. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of 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 the completion of the training .
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module . A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
CIP	Clean In Place
COP	Clean Out Of Place
ERP	Enterprise Resource Planning
FSSAI	Food Safety and Standards Authority of India
GMP	Good Manufacturing Practice
GHP	Good Hygiene Practices
HACCP	Hazard Analysis and Critical Control Point
NOS	National Occupational Standard
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standard
PC	Performance Criteria
SSC	Sector Skill Council
SOP	Standard Operating Procedure
QMS	Quality Management System