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What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Introduction

Qualifications Pack – Jam, Jelly and Ketchup Processing Technician

SECTOR: FOOD PROCESSING

SUB-SECTOR: FRUITS AND VEGETABLES

OCCUPATION: PROCESSING

REFERENCE ID: FIC/Q0103

ALIGNED TO: NCO-2004/7414.90

Brief Job Description: A Jam, Jelly and Ketchup Processing Technician is responsible for processing fruits and vegetables to make jam, jelly and ketchup by receiving, checking raw material quality, sorting, pulping, pasteurizing, cooking, juice extracting, clarifying, filtering, sampling for quality analysis, cooling, packaging and storing.

Personal Attributes: A Jam, Jelly and Ketchup Processing Technician must have the ability to plan, organize, prioritize, calculate and handle pressure. The individual must possess reading, writing and communication skills. In addition, the individual must have stamina and professional hygiene.

Job Details

Qualifications Pack Code	**FIC/Q0103**		
Job Role	**Jam, Jelly and Ketchup Processing Technician**		
Credits (NSQF)	**TBD**	**Version number**	**1.0**
Sector	**Food Processing**	**Drafted on**	**23/08/15**
Sub-sector	**Fruits and Vegetables**	**Last reviewed on**	**04/09/18**
Occupation	**Processing**	**Next review date**	**30/06/19**

Job Role	**Jam, Jelly, Ketchup Processing Technician**
Role Description	A Jam, Jelly and Ketchup Processing Technician is responsible for processing fruits and vegetables to make jam, jelly and ketchup.
NSQF level **Minimum Educational Qualifications** **Maximum Educational Qualifications**	Level 4 Preferably Class 8 Not applicable
Training (Suggested but not mandatory)	1. Food standards for fruit and vegetable products 2. Method of preservation of fruits and vegetables 3. Handling fruits and vegetables, packaging and storage techniques 4. Quality assessment of raw material, packaging materials and finished products 5. Operation and maintenance of processing machineries and equipments 6. Waste management 7. GMP 8. HACCP 9. QMS 10. Computer basics and ERP system followed by the organization 11. Training in Food Safety Standards and Regulations (as per FSSAI) (Mandatory)
Minimum Job Entry Age	18 years
Experience	2-3 years in fruit and vegetable processing
Applicable National Occupational Standards (NOS)	**Compulsory:** 1. FIC/N0109 Prepare and maintain work area and process machineries for jam, jelly and ketchup processing 2. FIC/N0110 Prepare for production of jam, jelly and ketchup 3. FIC/N0111 Produce jam, jelly and ketchup 4. FIC/N0112 Complete documentation and record keeping related to production of jam, jelly and ketchup 5. FIC/N9001 Food safety, hygiene and sanitation for processing food products
Performance Criteria	As described in the relevant OS units

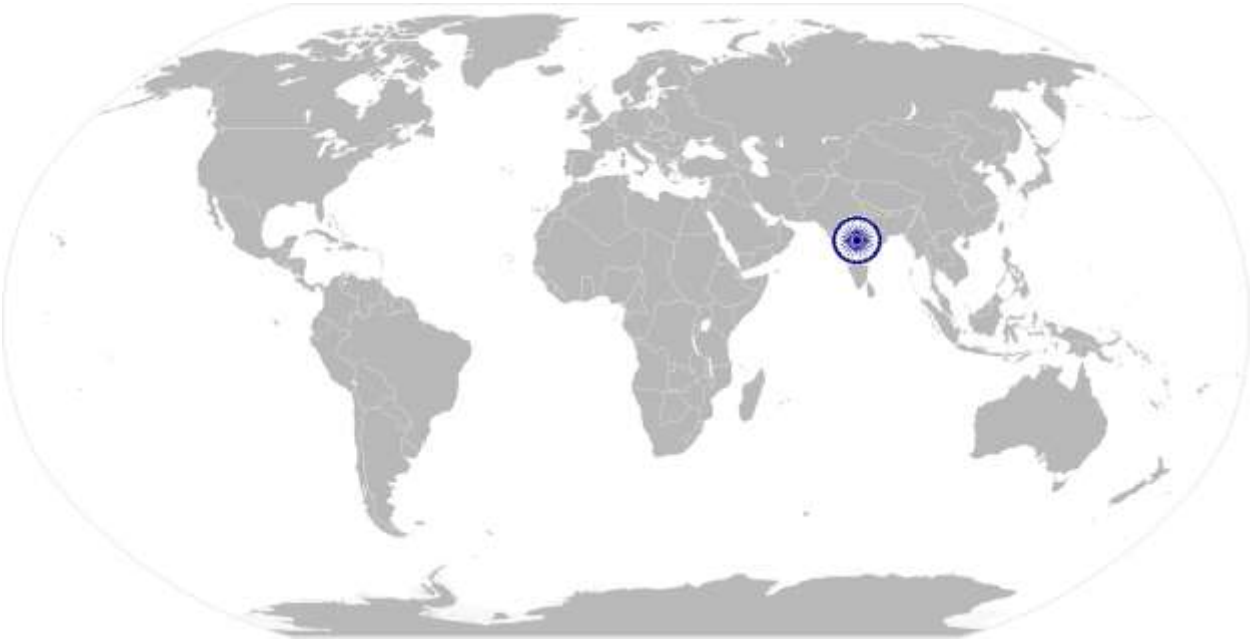
Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
OS	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Unit Code	Unit Code is a unique identifier for an Occupational Standard , which is denoted by an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms

Keywords /Terms	Description
CIP	Clean In Place
COP	Clean Out Of Place
ERP	Enterprise Resource Planning
FIFO	First In First Out
FEFO	First Expiry First Out
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
NSQF	National Skill Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standard
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skill Council
SOP	Standard Operating Procedure
QMS	Quality Management System

National Occupational Standard



Overview

This OS unit is about preparing work area for hygiene and safety, and ensuring performance, efficiency and maintenance of process machineries and tools for jam, jelly and ketchup processing, as per the specifications and standards of the organization.

FIC/N0109 **Prepare and maintain work area and process machineries for jam, jelly and ketchup processing**

National Occupational Standard

Unit Code	**FIC/N0109**
Unit Title (Task)	**Prepare and maintain work area and process machineries for jam, jelly and ketchup processing**
Description	This unit is about preparing and maintaining work area and process machineries for jam, jelly and ketchup processing.
Scope	This unit/task covers the following: • Prepare and maintain work area (for jam, jelly and ketchup processing) • Prepare and maintain process machineries and tools (for jam, jelly and ketchup processing)

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Prepare and maintain work area (for jam, jelly and ketchup processing)	PC1. clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests PC2. ensure that work area is safe and hygienic for food processing PC3. dispose waste materials as per defined SOP's and industry requirements
Prepare and maintain process machineries and tools (for jam, jelly and ketchup processing)	PC4. check the working and performance of all machineries and tools such as fruit washer, peeler, fruit pulper , juice extractor, clarifier, filter, pasteurizer, steam jacketed kettles, packaging machines, etc. PC5. clean the machineries and tools used with approved sanitizers following the company specifications and SOPs PC6. place the necessary tools required for process PC7. attend minor repairs/faults of all machines, if required

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. organization standards, process standards and procedures followed in the organisation KA2. types of products produced by the organisation KA3. code of business conduct KA4. dress code to be followed KA5. job responsibilities/duties and standard operating procedures KA6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution KA7. provision of wages, working hours and accident compensation as per organisation policy KA8. food safety and hygiene standards followed

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. types of chemicals, materials and equipment required for cleaning and maintenance KB2. cleaning process to disinfect equipment/ tools KB3. supplier/manufacturers instructions related to cleaning and maintenance KB4. knowledge of Food Safety Standards and Regulations (as per FSSAI) KB5. knowledge of legal regulations pertaining to work place such as health and safety, recommended dosage for use of sanitizers, control of substances hazardous to health, handling/ storage/ disposal/ cautions of use of sanitizers and disinfectants, fire precautions, occurrences, hygiene practice, disposal of waste, environmental protection, etc.
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor SA2. note the raw materials used for production and the finished products produced SA3. note the readings of the process parameters and provide necessary information to fill the process chart SA4. note down observations (if any) related to the process SA5. write information documents to internal departments/ internal teams SA6. note down the data for ERP or as required by the organization
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA7. read and interpret the process required for producing various types of products SA8. read and interpret the process flowchart for all products produced SA9. read equipment manuals and process documents to understand the equipments operation and process requirement SA10. read internal information documents sent by internal teams
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA11. discuss task lists, schedules and activities with the supervisor SA12. effectively communicate with team members SA13. question the supervisor in order to understand the nature of the problem and to clarify queries SA14. attentively listen and comprehend the information given by the speaker SA15. communicate clearly with the supervisor and cross department teams on the issues faced during the process
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue SB2. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

FIC/N0109 **Prepare and maintain work area and process machineries for jam, jelly and ketchup processing**

	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan and organize the work order and jobs received from the supervisor SB4. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor SB5. plan and prioritize work based on instructions received from the supervisor SB6. plan to utilise time and equipment's effectively SB7. organize all process/ equipment manuals so as to access information easily SB8. support the supervisor in scheduling tasks for helper(s)
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB9. understand customer requirements and their priority and respond as per their needs
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. support supervisor in solving problems by detailing out problems SB11. discuss the possible solutions with the supervisor for problem solving
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain information about maintenance processes and technical knowledge about tools and equipment
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. use common sense and make judgments on day to day basis SB14. use reasoning skills to identify and resolve basic problems SB15. use intuition to detect any potential problems which could arise during operations SB16. use acquired knowledge of the process for identifying and handling issues

NOS Version Control

NOS Code	FIC/N0109		
Credits (NSQF)	TBD	Version number	1.0
Industry	Food Processing	Drafted on	23/08/15
Industry Sub-sector	Fruits and Vegetables	Last reviewed on	04/09/18
Occupation	Processing	Next review date	30/06/19

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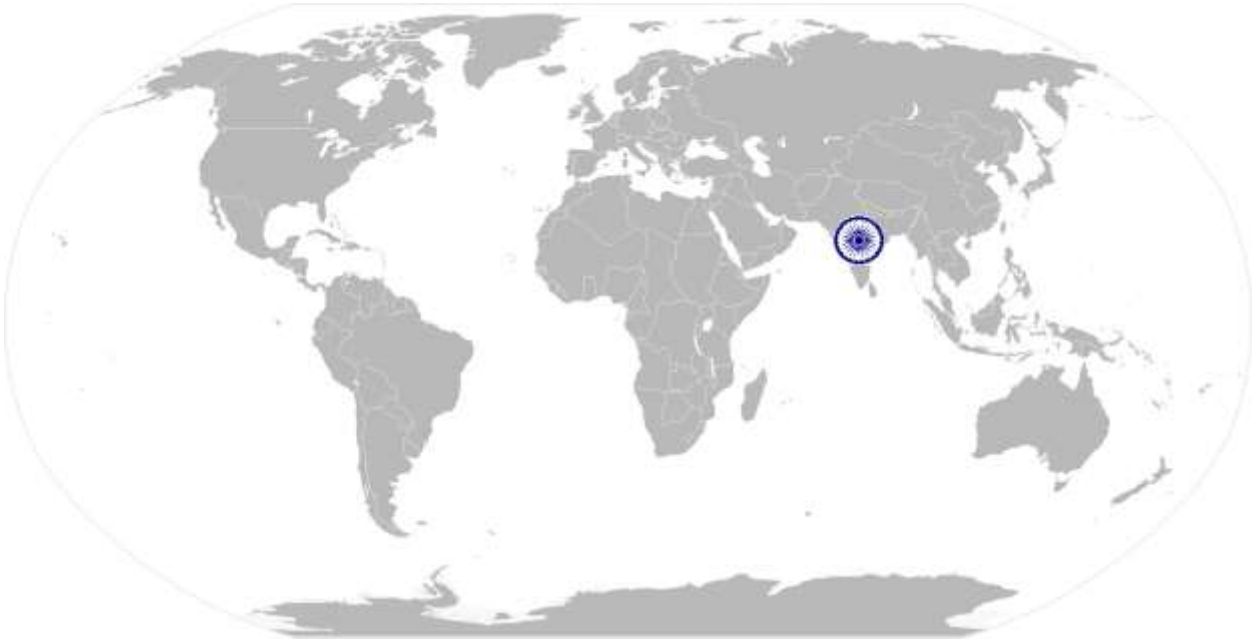
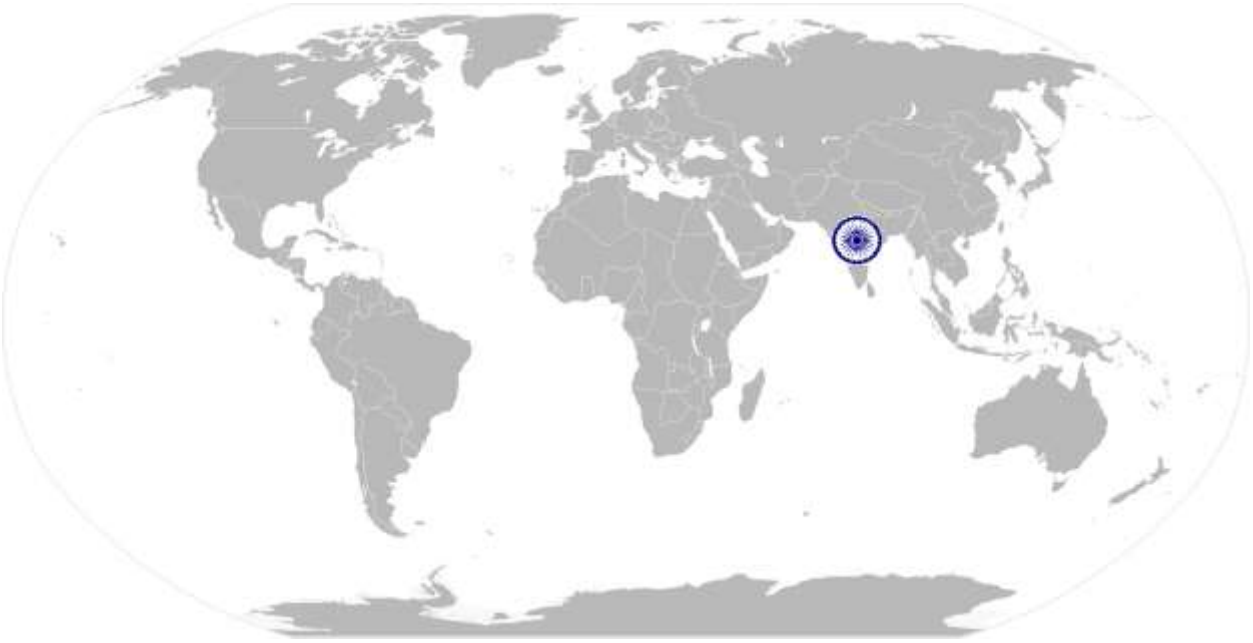


National Occupational Standard



Overview

This OS unit is about preparation for production of fruit and vegetable (tomato) products such as jam, jelly and ketchup, through planning production, machinery utilization, organizing raw materials, packaging materials and machineries for production.

FIC/N0110 **Prepare for production of jam, jelly and ketchup**

National Occupational Standard

Unit Code	FIC/N0110
Unit Title (Task)	**Prepare for production of jam, jelly and ketchup**
Description	This OS unit is about preparation for production of various fruits and vegetables products
Scope	This unit/task covers the following: • Provide support in production planning (for jam, jelly and ketchup processing) • Plan equipment utilization (for jam, jelly and ketchup processing) • Organize and check equipments and raw material (for jam, jelly and ketchup processing)
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Provide support in production planning (for jam, jelly and ketchup processing)	PC1. read and understand the production order from the supervisor PC2. check the availability of raw materials, packaging materials, equipment and manpower PC3. support in planning production sequence by: • grouping products from types of fruits (pulpy fruits, citrus fruits etc), • selecting raw materials that do not impact the quality of the other • avoiding CIP after each product • using the same equipment and machinery for various products • planning maximum capacity utilization of machineries • considering the process time for each product • planning efficient utilization of resources/manpower • prioritizing urgent orders PC4. calculate the batch size based on the production order and machine capacity PC5. calculate the raw material requirement (considering the process loss) to produce the required quantity of finished product(s) PC6. calculate the raw materials (including ingredients, if any), packaging materials and manpower requirement for completing the order
Plan equipment utilization (for jam, jelly and ketchup processing)	PC7. ensure working and performance of each equipment required for process PC8. calculate the process time for effective utilization of machineries PC9. plan batch size considering full capacity utilization of machineries PC10. plan to utilize machineries for multiple products without affecting the quality of the finished products, and to optimize production and saving energy PC11. allot responsibilities/ work to the assistants and helpers
Organize and check equipments and raw material (for jam, jelly and ketchup processing)	PC12. refer process chart/ product flow chart/formulation chart for product(s) produced PC13. weigh the raw materials (including ingredients, if any) required for the batch PC14. check the conformance of raw material quality to company standards, through physical analysis and by referring to the quality analysis report from the supplier / internal lab analysis report PC15. ensure working and performance of required machineries and tools PC16. keep the tools accessible to attend repairs/faults in case of breakdown

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. organization standards, process standards and procedures followed in the organisation KA2. types of products produced by the organisation KA3. code of business conduct KA4. dress code to be followed KA5. job responsibilities/duties and standard operating procedures KA6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution KA7. provision of wages, working hours and accident compensation as per organisation policy KA8. food safety and hygiene standards followed
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. types of raw materials (various fruits and vegetable) and products obtained from each of the raw materials KB2. types of machineries used in processing and other machineries used in the organisation KB3. maintenance of process equipments KB4. supplier/manufacturers instructions related to machineries KB5. process for producing each product KB6. basic mathematics KB7. calculation of raw material for required quantity of finished product KB8. quality parameters, basic food microbiology and quality assessment based on physical parameters KB9. food safety and hygiene KB10. GMP KB11. HACCP
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor SA2. note the raw materials used for production and the finished products produced SA3. note the readings of the process parameters and provide necessary information to fill the process chart SA4. note down observations (if any) related to the process SA5. write information documents to internal departments/ internal teams SA6. note down the data for ERP or as required by the organization
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA7. read and interpret the process required for producing various types of products SA8. read and interpret the process flowchart for all products produced

	SA9. read equipment manuals and process documents to understand the equipments operation and process requirement SA10. read internal information documents sent by internal teams
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA11. discuss task lists, schedules and activities with the supervisor SA12. effectively communicate with team members SA13. question the supervisor in order to understand the nature of the problem and to clarify queries SA14. attentively listen and comprehend the information given by the speaker SA15. communicate clearly with the supervisor and cross department teams on the issues faced during the process
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue SB2. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan and organize the work order and jobs received from the supervisor SB4. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor SB5. plan and prioritize work based on instructions received from the supervisor SB6. plan to utilise time and equipment's effectively SB7. organize all process/ equipment manuals so as to access information easily SB8. support the supervisor in scheduling tasks for helper(s)
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB9. understand customer requirements and their priority and respond as per their needs
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. support supervisor in solving problems by detailing out problems SB11. discuss the possible solutions with the supervisor for problem solving
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain information about maintenance processes and technical knowledge about tools and equipment
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. use common sense and make judgments on day to day basis SB14. use reasoning skills to identify and resolve basic problems SB15. use intuition to detect any potential problems which could arise during operations SB16. use acquired knowledge of the process for identifying and handling issues

NOS Version Control

NOS Code	FIC/N0110		
Credits (NSQF)	TBD	Version number	1.0
Industry	Food Processing	Drafted on	23/08/15
Industry Sub-sector	Fruits and Vegetables	Last reviewed on	04/09/18
Occupation	Processing	Next review date	30/06/19

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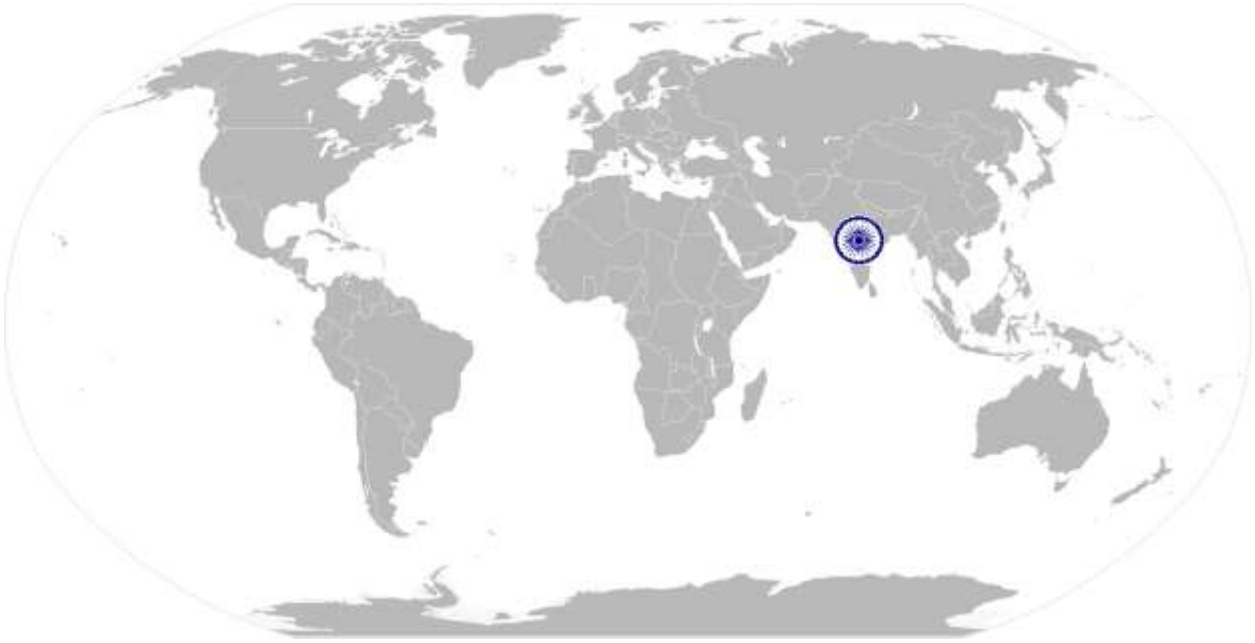
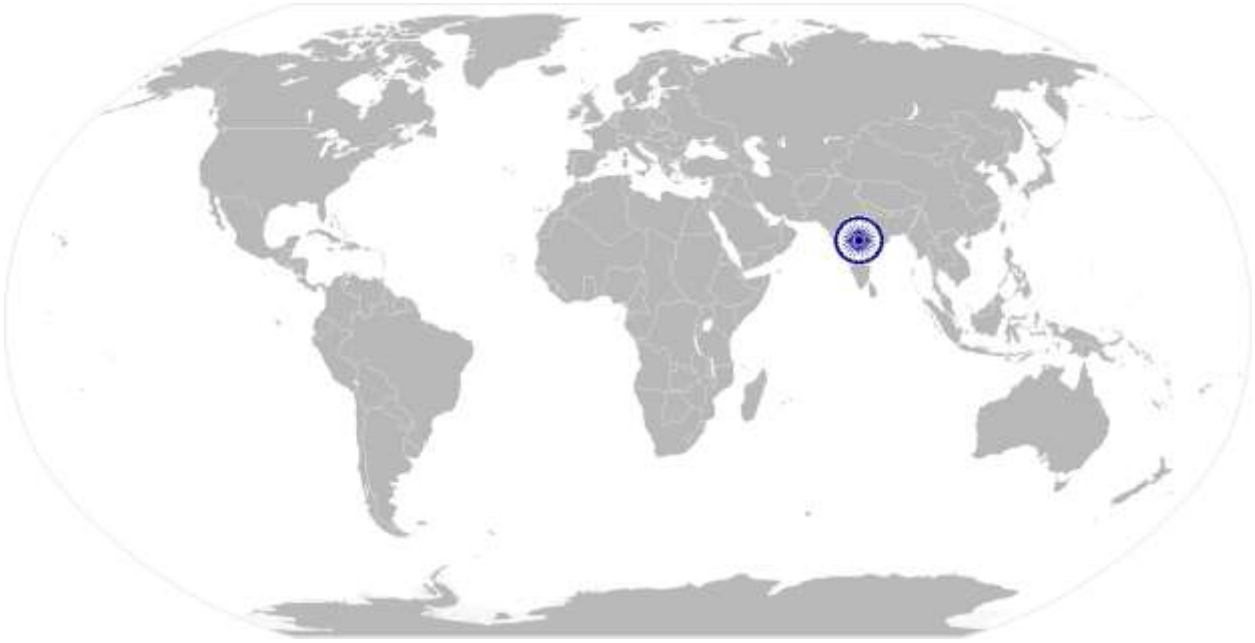


National Occupational Standard



Overview

This OS unit is about producing fruit and vegetable (tomato) products such as jam, jelly and ketchup using various machineries as per the specifications and standards of the organization.

National Occupational Standard

Unit Code	FIC/N0111
Unit Title (Task)	**Produce jam, jelly and ketchup**
Description	This unit is about production of jam, jelly and ketchup using various machineries as per the specifications and standards of the organization.
Scope	This unit/task covers the following: • Receive, wash and sort fruits and vegetables • Peel, cut, de-seed/de-stone fruits and vegetables • Pulp fruits and vegetables, extract fruit juice • Prepare jam and jelly • Prepare ketchup • Fill and pack jam, jelly and ketchup • Carry out post production cleaning and regular maintenance of equipments

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Receive, wash and sort fruits and vegetables	PC1. receive fruits and vegetables (tomato) from the supplier/vendor, check its weight and check the quality of fruits and veegtables through physical parameters such as appearance, colour, texture, maturity, etc. PC2. open valves or start pump to fill water in the washing tank and control water level, dump fruits and vegetables in the washing tank for washing PC3. switch on agitator of revolving screens/blades to immerse fruits and vegetables in water to remove dirt, soil and other impurities PC4. start the ladder conveyor to lift fruits and vegetables from the washing tank and transfer to the washing line conveyor PC5. open valves of the high pressure spraying system for fresh water and adjust pressure to spray water on fruits and vegetables on washing line conveyor for rinsing PC6. adjust controls to transfer washed fruit and vegetables to sorting/inspecting line, start and adjust speed of sorting/inspecting line conveyor to visually inspect and manually remove damaged, blemished and rotten fruits and vegetables
Peel, cut, deseed/de-stone fruits and vegetables	PC7. dump sorted fruits and vegetables in the peeler or corer (depending on the type of fruits), start machine , adjust speed to remove the peel or core of fruits or turn valves to introduce steam and adjust controls to maintain pressure for steam peeling fruits PC8. open valve or pump water or open spraying system to wash the peeled fruits and vegetables, observe fruits and vegetables emerging from peeling /coring

	machine to ensure removal of peel/core PC9. cut fruits and vegetables manually or load the fruits and vegetables in the chopper/cutter/slicer machine, adjust controls to cut fruits to required size, start machine, collect sliced fruits and vegetables from the discharge chute PC10. in case of mangoes, start conveyor and control speed to allow washed mangoes to pass through tip cutting line, cut the tip of the fruit manually, control conveyor speed to dump the tip cut mangoes into de-stoner machine to remove seed and peel PC11. control speed of waste disposal conveyor to dispose waste following SOP
Pulp fruits and vegetables, extract fruit juice	PC12. adjust and maintain speed of pulper conveyor to allow the fruits and vegetables to pass through the pulper cum finisher/ pulper refiner machine for pulping of fruits and vegetables and sieving pulp to required fineness, adjust position of discharge outlet to collect refined pulp in collection tank, check collected pulp to ensure it is free from seeds and fibre PC13. replace damaged or clogged filter screen of pulper cum finisher/ pulper refiner machine PC14. adjust controls of hydraulic press machine to extract juice, start machine and control speed/rotation, start conveyor to allow cut/grated fruit to pass through hydraulic press/juice extraction machine to extract juice, remove skin, seeds and fibre through filter sieves PC15. change sieves or clean sieves of hydraulic press/juice extraction machine to avoid clogging PC16. open valves or start pump to allow extracted juice through finer sieves to remove very small and undesirable particles and collect filtered juice in collection tanks PC17. check the quality of fruit pulp/ fruit juice through physical parameters such as appearance, colour, odour, etc. sample and transfer to quality lab for analysis
Prepare jam and jelly	PC18. pump measured quantity of fruit pulp for preparing jam and fruit juice for preparing jelly (pulp of various fruit as per formulation for preparing mixed fruit jam) from holding tank/ container into cooking kettle/tank PC19. set temperature, pressure, stirrer speed, etc. of the cooking kettle/tank, set mixing time, cooking time, cooking temperature, etc, open valves to admit steam through the kettle or light burner to heat fruit pulp / fruit juice to require temperature and thickness with continuous stirring to avoid sticking/scorching or stir manually PC20. monitor pressure and temperature gauge and adjust controls to achieve specified pressure and temperature to cook fruit pulp / fruit juice PC21. open valve or start pump to transfer measured quantity of water into pre-mixing tank, set speed of stirrer of pre-mixing tank to stir water, measure

	specified quantity of pectin following formulation and add to water in the pre-mixing tank, control speed of mixer for uniform mixing of pectin in water to prepare pectin solution PC22. measure ingredients such as sugar, pectin solution, flavour, colour etc for batch referring to the formulation chart and add in sequence into pulp/juice in kettle following SOP and continue cooking along with stirring PC23. observe the cooking process and check the product in refractometer to ensure completeness of cooking process PC24. check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to quality lab for analysis and conformance to standards PC25. start pump or open valve to transfer product into filling tank of the packaging machine or tilt kettle and scoop contents out of kettle into container, manually transfer into hopper of the filling machine for packaging or manually fill hot product in packaging containers
Prepare ketchup	PC26. pump measured quantity of tomato pulp/puree from holding tank/ container into cooking kettle PC27. set temperature, pressure, stirrer speed, etc. of the cooking kettle, set mixing time, cooking time, cooking temperature etc, open valves to admit steam through the kettle or light burner to heat tomato paste to required temperature and thickness with continuous stirring to avoid sticking /scorching or stir manually PC28. monitor pressure and temperature gauge and adjust controls to achieve specified temperature to cook tomato paste PC29. measure ingredients such as sugar, salt, spice powder, vinegar, etc. required for batch, by referring to the formulation chart and add as per sequence into the tomato pulp/puree in kettle following SOP and continue cooking PC30. observe cooking process and check the quality of cooked product through feel, consistency, test the viscosity using viscometer to ensure completeness of the cooking process PC31. check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to quality lab for analysis and conformance to standards PC32. start pump or open valve to transfer product into filling tank of the packaging machine or tilt kettle or scoop contents out of kettle into container, manually transfer into hopper of the filling machine for packaging or manually filling hot product in packaging containers
Fill and pack jam, jelly and ketchup	PC33. open valves or start pump to transfer hot product into the packaging machine to pack jam/jelly

	PC34. load packing materials such as glass bottle, plastic bottle, pouches, etc. and sealing materials such as lid, closures, etc. in packaging machines PC35. set packaging machine for filling volume, speed, etc,, start automatic packaging machine for forming, washing bottles, filling, sealing container (or) fill measured quantity of hot product in packaging containers , place lid and close manually/ mechanically PC36. start machine to fill hot product in the container, check weight of packed product periodically to ensure its conformance to standards PC37. start cooling line conveyor and control speed to allow packed contianers to pass through the cooling tunnel, set controls of water temperature, pressure etc. and start machine to spray water on containers to cool and set product (setting in case of jam and jelly) or arrange filled jam/jelly containers in rack and allow to stand for specified time following SOP to cool and set product PC38. start drying line conveyor and control speed to allow the cooled bottles to pass through the drying tunnel, set controls of air temperature, air flow rate etc. and start machine to dry bottle before labelling PC39. load labels in labelling machine, set date coding machine for batch number, date of manufacture, date of expiry, etc., start labelling line conveyor and control speed to allow packed container to pass through labelling and date coding machine for labelling and date coding packed products PC40. place the packed and labelled products in cartons and transfer to storage area and store maintaining storage conditions following SOP PC41. report discrepancies/concerns to department supervisor for immediate action
Carry out post production cleaning and regular maintenance of equipments	PC42. clean the work area, machineries, equipment and tools using approved cleaning agents and sanitizers PC43. attend minor repairs/faults of all machines (if any) PC44. ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or following suppliers instructions/manuals
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. organization standards, process standards and procedures followed in the organisation KA2. types of products produced by the organisation KA3. code of business conduct KA4. dress code to be followed KA5. job responsibilities/duties and SOPs KA6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query

	resolution KA7. provision of wages, working hours as per organisation policy KA8. food safety and hygiene standards followed
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. types and varities of raw materials (fruits and vegetable) and products produced from each raw material KB2. production process, process parameters and product formulation for production of various products KB3. types of machineries used in processing and machineries used in the organisation KB4. handling all process machineries KB5. maintenance of machineries, equipments and tools KB6. basic mathematics KB7. procedures for disposal of waste from agricultural produce KB8. quality parameters, basic food microbiology and quality assessment based on physical parameters KB9. types and category of packaging materials, packaging machineries KB10. storage procedures for raw materials, packaging materials and finished goods KB11. cleaning procedures like CIP and COP KB12. knowledge of sanitizers and disinfectants and their handling and storing methods KB13. food laws and regulations on product, packaging and labelling KB14. food safety and hygiene KB15. GMP KB16. HACCP
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor SA2. note the raw materials used for production and the finished products produced SA3. note the readings of the process parameters and provide necessary information to fill the process chart SA4. note down observations (if any) related to the process SA5. write information documents to internal departments/ internal teams SA6. note down the data for ERP or as required by the organization
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA7. read and interpret the process required for producing various types of products SA8. read and interpret the process flowchart for all products produced SA9. read equipment manuals and process documents to understand the equipments operation and process requirement SA10. read internal information documents sent by internal teams
	Oral Communication (Listening and Speaking skills)

	The user/individual on the job needs to know and understand how to: SA11. discuss task lists, schedules and activities with the supervisor SA12. effectively communicate with team members SA13. question the supervisor in order to understand the nature of the problem and to clarify queries SA14. attentively listen and comprehend the information given by the speaker SA15. communicate clearly with the supervisor and cross department teams on the issues faced during the process
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue SB2. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan and organize the work order and jobs received from the supervisor SB4. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor SB5. plan and prioritize work based on instructions received from the supervisor SB6. plan to utilise time and equipment's effectively SB7. organize all process/ equipment manuals so as to access information easily SB8. support the supervisor in scheduling tasks for helper(s)
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB9. understand customer requirements and their priority and respond as per their needs
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. support supervisor in solving problems by detailing out problems SB11. discuss the possible solutions with the supervisor for problem solving
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain information about maintenance processes and technical knowledge about tools and equipment
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. use common sense and make judgments on day to day basis SB14. use reasoning skills to identify and resolve basic problems SB15. use intuition to detect any potential problems which could arise during operations SB16. use acquired knowledge of the process for identifying and handling issues

NOS Version Control

NOS Code	FIC/N0111		
Credits (NSQF)	TBD	Version number	1.0
Industry	Food Processing	Drafted on	23/08/15
Industry Sub-sector	Fruits and Vegetables	Last reviewed on	04/09/18
Occupation	Processing	Next review date	30/06/19

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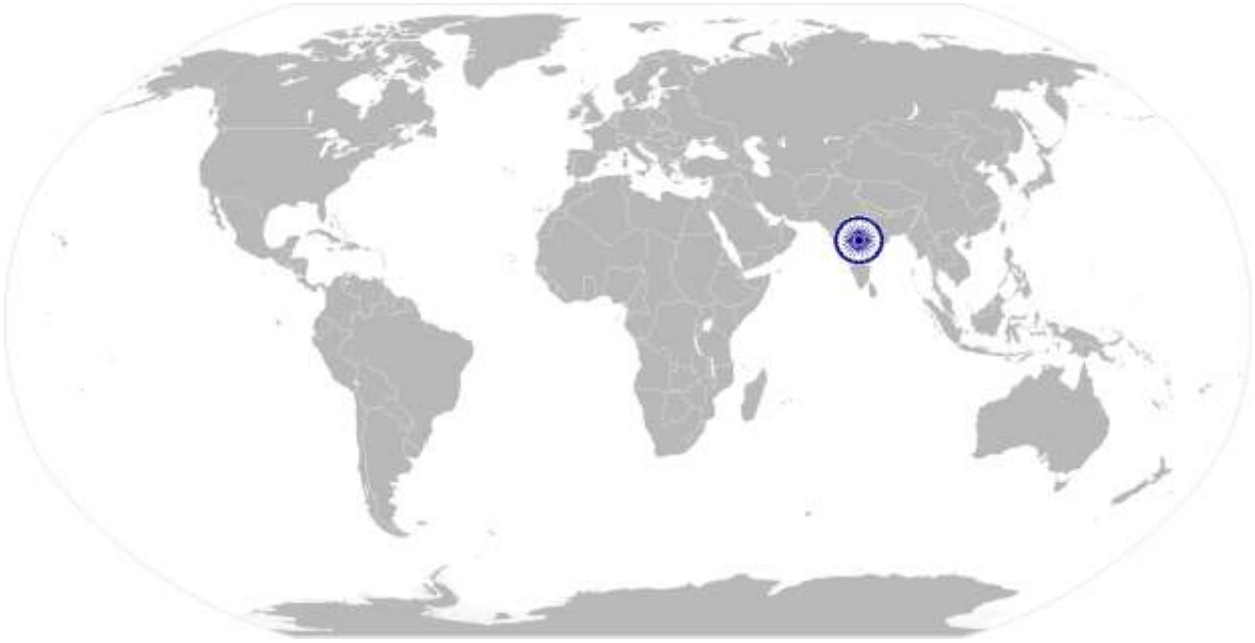
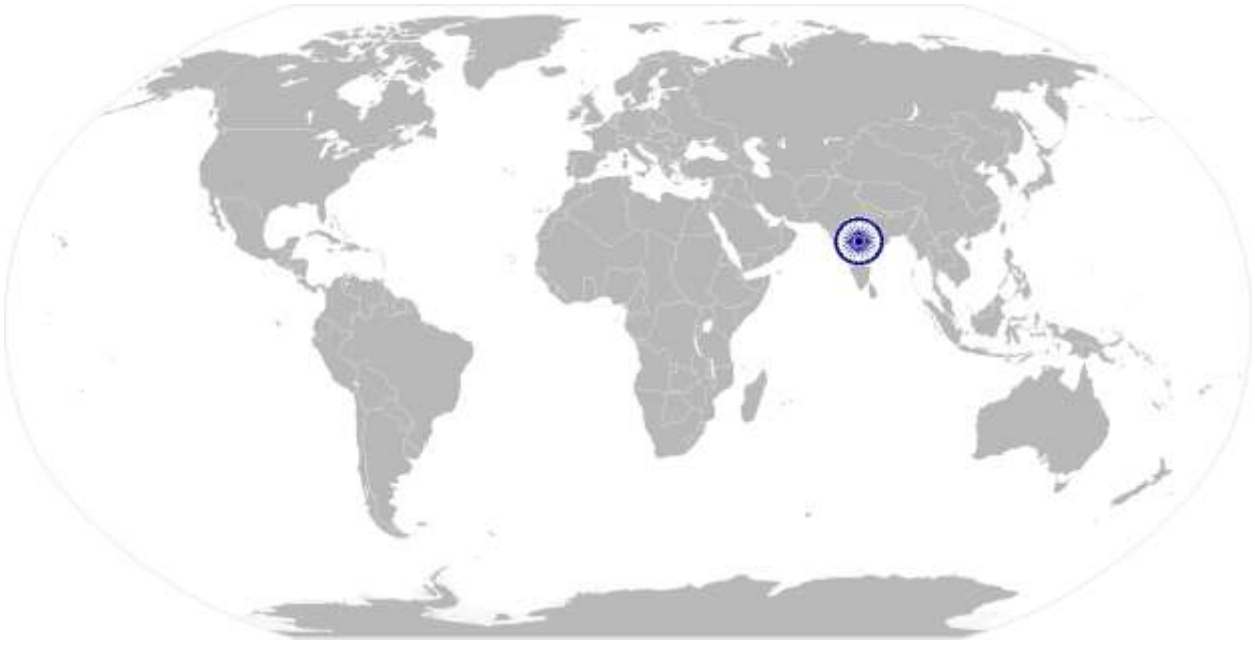


FIC/N0112 **Complete documentation and record keeping related to production of jam, jelly and ketchup**

National Occupational Standard



Overview

This OS unit is about documenting and maintaining records of raw materials, process and finished products related to production of jam, jelly and ketchup.

FIC/N0112 **Complete documentation and record keeping related to production of jam, jelly and ketchup**

National Occupational Standard

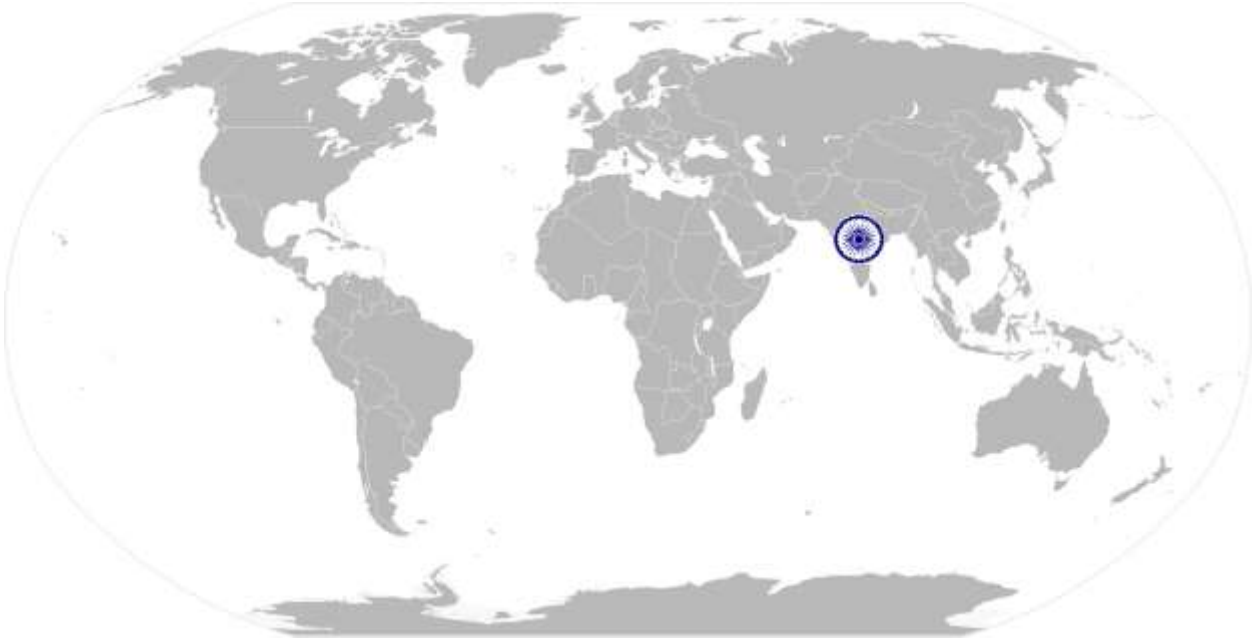
Unit Code	FIC/N0112
Unit Title (Task)	**Complete documentation and record keeping related to production of jam, jelly and ketchup.**
Description	This unit is about documenting and maintaining records of raw materials, process and finished products related to production of jam, jelly and ketchup.
Scope	This unit/task covers the following: • Document and maintain records of raw materials (related to production of jam, jelly and ketchup) • Document and maintain records of production and process parameters (related to production of jam, jelly and ketchup) • Document and maintain records of finished products (related to production of jam, jelly and ketchup)
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Document and maintain records of raw materials (related to production of jam, jelly and ketchup)	PC1. document and maintain recordsof details of raw materials and packaging materials such as name or raw materials, type and variety, vendor/supplier details, grown area, grown season, quantity, receiving date, supplier details, receiving date/ date of manufacture, expiry date, supplier quality document, quality parameters of all raw materials, internal quality analysis report, etc. as per organisation standards PC2. document and maintain record of observations (if any) related to raw materials and packaging materials PC3. load the raw materials details in ERP for future reference PC4. verify the documents and track from finished product to raw materials, in case of quality concerns and during quality management system audits
Document and maintain records of production and process parameters (related to production of jam, jelly and ketchup)	PC5. document and maintain records of production plan with details such as the product details, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment PC6. document and maintain records of process details such as type of raw material used, process parameters (temperature, time, pressure, etc. as applicable) for entire production and packaging in process chart or production log for all products produced PC7. document and maintain records of batch size, production yield, wastage of raw materials, energy utilization and final products produced PC8. document and maintain record of observations (if any) or deviations related to process and production PC9. load the production plan and process details in ERP for future reference PC10. verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits

Document and maintain records of the finished products (related to production of jam, jelly and ketchup)	PC11. document and maintain records of the types of finished products produced PC12. document and maintain records of the finished products detailssuch as batch number, time of packing, date of manufacture, date of expiry, other label details, primary, secondary and tertiary packaging materials for all finished products, storage conditions, etc. as per organisation standards PC13. document and maintain record of observations or deviations (if any) related to finished products PC14. load the finished product details in ERP for future reference PC15. verify the documents and track from finished product to raw materials (in case of quality concerns) and for quality management system audits
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. organization standards, process standards and procedures followed in the organisation KA2. types of products produced by the organisation KA3. code of business conduct KA4. dress code to be followed KA5. job responsibilities/duties and standard operating procedures KA6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution KA7. provision of wages, working hours as per organisation policy KA8. food safety and hygiene standards followed
B. Technical Knowledge	The user/individual on the job needs to know and understand: KA9. documentation system followed in the organization such as production chart, process chart and finished products chart KA10. details to be recorded of raw materials and finished products KA11. details to be recorded and maintained of production plan and process parameters KA12. methods to record and maintain records of observations (if any) related to raw material, process and finished products KA13. methods to track back the record from finished product to raw material KA14. basic computer knowledge KA15. entering the details in ERP system followed by the organisation
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor SA2. note the raw materials used for production and the finished products produced SA3. note the readings of the process parameters and provide necessary information to fill the process chart SA4. note down observations (if any) related to the process

	SA5. write information documents to internal departments/ internal teams SA6. note down the data for ERP or as required by the organization
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA7. read and interpret the process required for producing various types of products SA8. read and interpret the process flowchart for all products produced SA9. read equipment manuals and process documents to understand the equipments operation and process requirement SA10. read internal information documents sent by internal teams
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA11. discuss task lists, schedules and activities with the supervisor SA12. effectively communicate with team members SA13. question the supervisor in order to understand the nature of the problem and to clarify queries SA14. attentively listen and comprehend the information given by the speaker SA15. communicate clearly with the supervisor and cross department teams on the issues faced during the process
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue SB2. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan and organize the work order and jobs received from the supervisor SB4. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor SB5. plan and prioritize work based on instructions received from the supervisor SB6. plan to utilise time and equipment's effectively SB7. organize all process/ equipment manuals so as to access information easily SB8. support the supervisor in scheduling tasks for helper(s)
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB9. understand customer requirements and their priority and respond as per their needs
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. support supervisor in solving problems by detailing out problems SB11. discuss the possible solutions with the supervisor for problem solving
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain information about maintenance processes and technical knowledge about tools and equipment

FIC/N0112 **Complete documentation and record keeping related to production of jam, jelly and ketchup**

	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. use common sense and make judgments on day to day basis SB14. use reasoning skills to identify and resolve basic problems SB15. use intuition to detect any potential problems which could arise during operations SB16. use acquired knowledge of the process for identifying and handling issues



NOS Version Control

NOS Code	FIC/N0112		
Credits (NSQF)	TBD	Version number	1.0
Industry	Food Processing	Drafted on	23/08/15
Industry Sub-sector	Fruits and Vegetables	Last reviewed on	04/09/18
Occupation	Processing	Next review date	30/06/19

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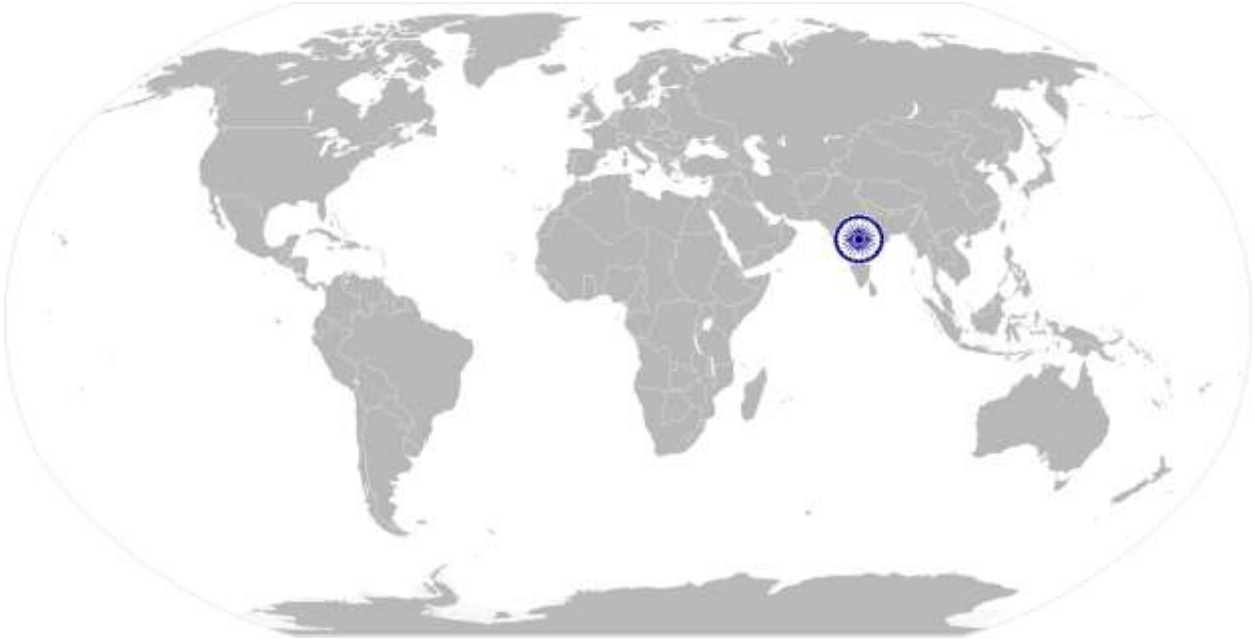
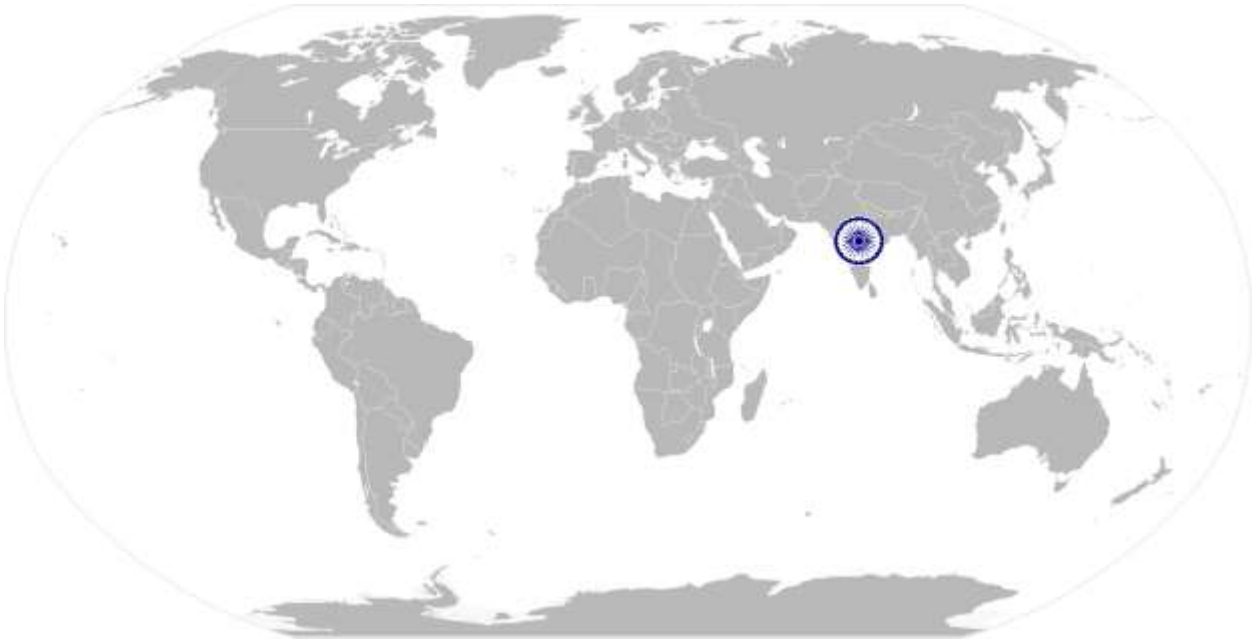


FIC/N9001 **Food safety, hygiene and sanitation for processing food products**

National Occupational Standard



Overview

This OS unit is about maintaining food safety, hygiene and sanitation in work area and processing unit while processing food products.

National Occupational Standard

Unit Code	FIC/N9001
Unit Title (Task)	Food safety, hygiene and sanitation for processing food products
Description	This unit is about maintaining food safety, hygiene and sanitation in work area and processing unit for processing food products.
Scope	The scope of this role will include: • Perform safety and sanitation related functions (for processing food products) • Apply food safety practices (for processing food products)
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Perform safety and sanitation related functions (for processing food products)	PC1. comply with food safety and hygiene procedures followed in the organisation PC2. ensure personal hygiene by use of gloves, hairnets, masks, ear plugs, goggles, shoes, etc. PC3. ensure hygienic production of food by inspecting raw materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters PC4. pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations PC5. clean, maintain and monitor food processing equipment periodically, using it only for the specified purpose PC6. use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required PC7. follow housekeeping practices by having designated area for materials/tools PC8. follow industry standards such as GMP and HACCP and product recall process PC9. attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them PC10. identify, document and report problems such as rodents and pests to management PC11. conduct workplace checklist audits before and after work to ensure safety and hygiene PC12. document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system
Apply food safety practices (for processing food products)	PC13. determine the quality of food using criteria such as odour, appearance, taste and best before date, and take immediate measures to prevent spoilage PC14. store raw materials, finished products, allergens separately to prevent cross-contamination PC15. label raw materials and finished products and store them in designated storage areas according to safe food practices

	PC16. follow stock rotation based on FEFO/ FIFO
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. organization standards, process standards and procedures followed in the organisation KA2. types of products produced by the organisation KA3. code of business conduct KA4. dress code to be followed KA5. job responsibilities/duties and standard operating procedures KA6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution KA7. provision of wages, working hours as per organisation policy KA8. food safety and hygiene standards followed
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. possible physical, chemical and biological hazards and methods of prevention of various hazards KB2. personal hygiene requirement KB3. different types of sanitizers used for process area, equipment and the procedure to use them KB4. knowledge on Food Safety Standards and Regulations (as per FSSAI) KB5. quality parameters and quality assessment based on physical parameters, basic food microbiology KB6. labelling/marking requirements for raw materials, finished goods, stored materials, packaging materials and their designated storage area KB7. cleaning and sanitation of equipment and work area KB8. CIP and COP methods and procedures KB9. storage norms for raw materials, packaging material and finished products KB10. stock rotation of ingredients and finished products based on FEFO/FIFO KB11. method of maintaining safety check lists for all machineries KB12. GHP KB13. GMP KB14. HACCP
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Writing Skills** The user/ individual on the job needs to know and understand how to: SA1. note the information communicated by the supervisor SA2. note the raw materials used for production and the finished products produced SA3. note the readings of the process parameters and provide necessary information to fill the process chart SA4. note down observations (if any) related to the process SA5. write information documents to internal departments/ internal teams SA6. note down the data for ERP or as required by the organization
	Reading Skills

	The user/individual on the job needs to know and understand how to: SA7. read and interpret the process required for producing various types of products SA8. read and interpret and process flowchart for all products produced SA9. read equipment manuals and process documents to understand the equipment operation and process requirement SA10. read internal information documents sent by internal teams
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B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue SB2. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
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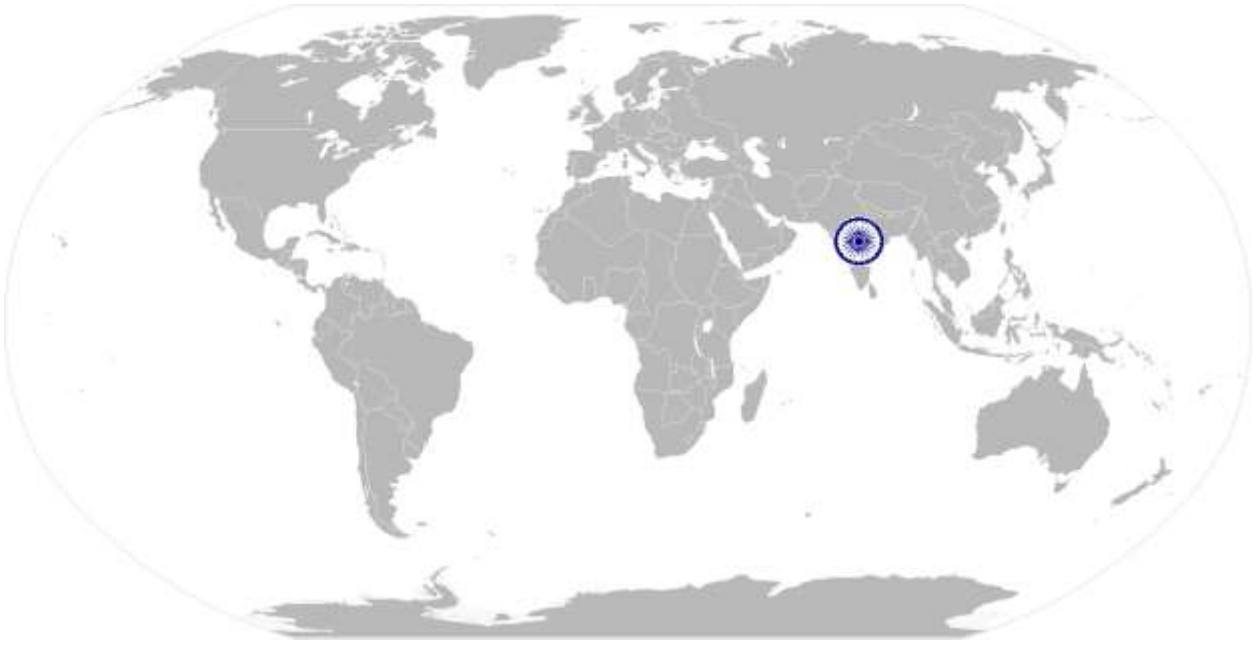
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB9. understand customer requirements and their priority and respond as per their needs
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. support supervisor in solving problems by detailing out problems SB11. discuss the possible solutions with the supervisor for problem solving
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB12. apply domain information about maintenance processes and technical knowledge about tools and equipment
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB13. use common sense and make judgments on day to day basis

	SB14. use reasoning skills to identify and resolve basic problems SB15. use intuition to detect any potential problems which could arise during operations SB16. use acquired knowledge of the process for identifying and handling issues



NOS Version Control

NOS Code	FIC/N9001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Food Processing	Drafted on	23/08/15
Industry Sub-sector	Fruits and Vegetables	Last reviewed on	04/09/18
Occupation	Processing	Next review date	30/06/19

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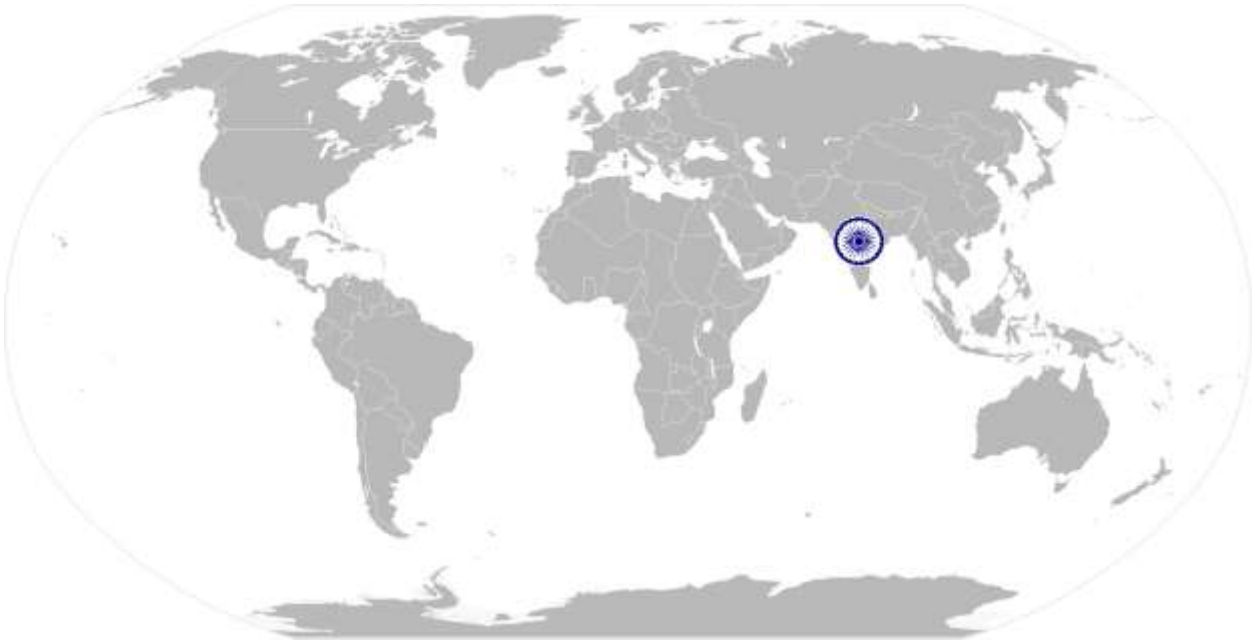
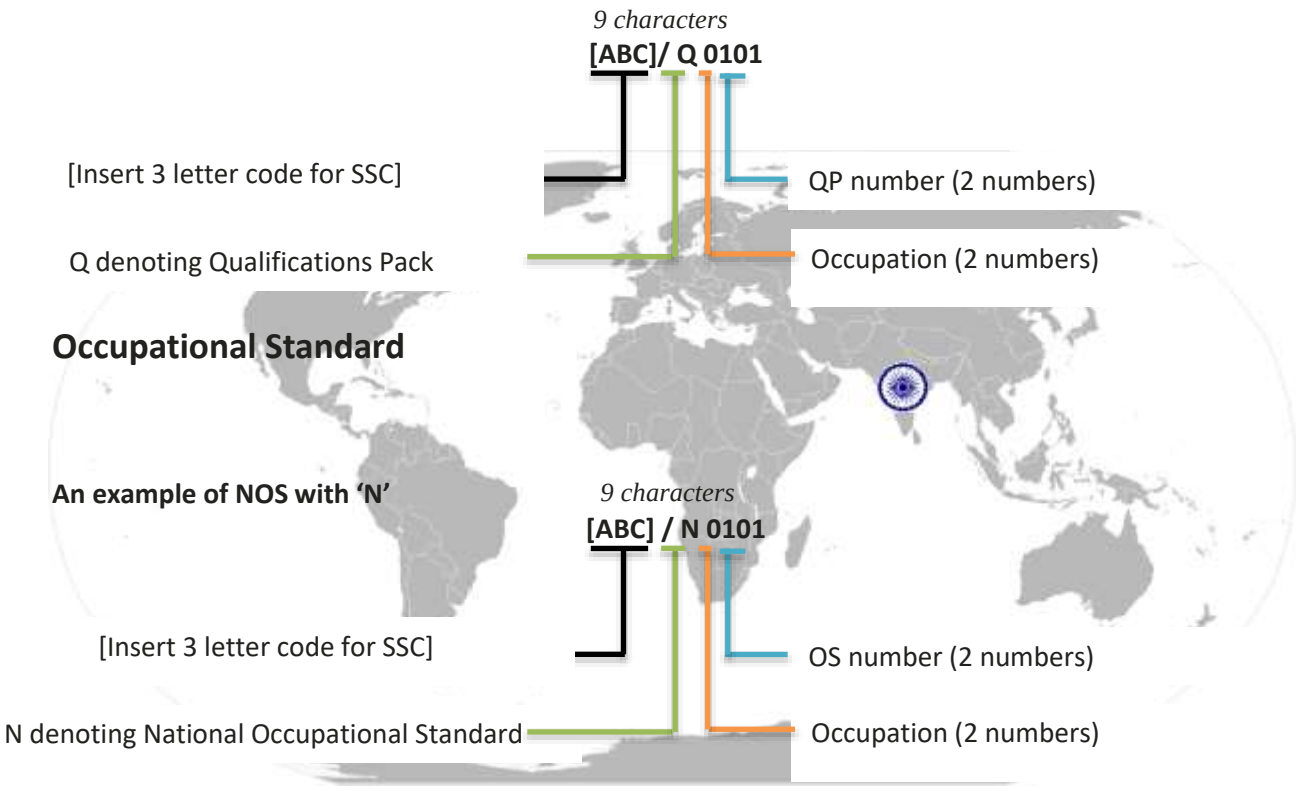


Annexure

Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'

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The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Fruit and Vegetable	01 – 09
Food Grain Milling (including Oilseeds)	10 - 19
Dairy products	20 - 30
Meat and Poultry	30 – 40
Fish and Sea Food	40 - 49
Bread and Bakery	50 - 59
Alcoholic Beverages	60 - 69
Aerated water/ soft drinks	
Quality Analysis (involving physical and chemical lab analysis)	76 – 79
Packaging, Refrigeration and Procurement	70 – 75
Miscellaneous	80 – 84
Packaged Foods	85 - 90
Soya Food Processing	90 - 95

Sequence	Description	Example
Three letters	Industry name	FIC
Slash	/	/
Next letter	Whether QP or NOS	Q or N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

Note:

- The range of occupation numbers have been decided based on the number of existing and future occupations in a segment

Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Jam, Jelly and Ketchup Processing Technician

Qualification Pack FIC/Q0103

Sector Skill Council Food Processing

Guidelines for Assessment

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 evaulations 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

		Marks Allocation			
		Total Marks	**Out Of**	**Theory**	**Skills Practical**
1. FIC/N0109 (Prepare and maintain work area and process machineries for jam, jelly and ketchup processing)	PC1. Clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests	**100**	25	10	15
	PC2. Ensure that work area is safe and hygienic for food processing		10	3	7
	PC3. Dispose waste materials as per defined sop's and industry requirements		15	5	10
	PC4. Check the working and performance of all machineries and tools such as fruit washer, peeler, fruit pulper , juice extractor, clarifier, filter, pasteurizer, steam jacketed kettles, packaging machines, etc.		15	5	10
	PC5. Clean the machineries and tools used with approved sanitizers following the company specifications and SOPs		15	5	10
	PC6. Place the necessary tools required for process		5	2	3

Assessment Criteria

	PC7. Attend minor repairs/faults of all machines, if required		15	5	10
			100	**35**	**65**
2. FIC/N0110 (Prepare for production of jam, jelly and ketchup)	PC1. Read and understand the production order from the supervisor	**100**	10	4	6
	PC2. Check the availability of raw materials, packaging materials, equipment and manpower		5	2	3
	PC3. Support in planning production sequence by:		15	5	10
	• Grouping products from types of fruits (pulpy fruits, citrus fruits etc),				
	• Selecting raw materials that do not impact the quality of the other				
	• Avoiding CIP after each product				
	• Using the same equipment and machinery for various products				
	• Planning maximum capacity utilization of machineries				
	• Considering the process time for each product				
	• Planning efficient utilization of resources/manpower				
	• Prioritizing urgent orders				
	PC4. Calculate the batch size based on the production order and machine capacity		5	2	3
	PC5. Calculate the raw material requirement (considering the process loss) to produce the required quantity of finished product(s)		5	2	3
	PC6. Calculate the raw materials (including ingredients, if any), packaging materials and manpower requirement for completing the order		5	2	3
	PC7. Ensure working and performance of each equipment required for process		7	2	5
	PC8. Calculate the process time for effective utilization of machineries		7	2	5
	PC9. Plan batch size considering full capacity utilization of machineries		3	1	2

Assessment Criteria

	PC10. Plan to utilize machineries for multiple products without affecting the quality of the finished products, and to optimize production and saving energy		3	1	2
	PC11. Allot responsibilities/ work to the assistants and helpers		5	1.5	3.5
	PC12. Refer process chart/ product flow chart/formulation chart for product(s) produced		3	1	2
	PC13. Weigh the raw materials (including ingredients, if any) required for the batch		5	1	4
	PC14. Check the conformance of raw material quality to company standards, through physical analysis and by referring to the quality analysis report from the supplier / internal lab analysis report		10	4	6
	PC15. Ensure working and performance of required machineries and tools		10	4	6
	PC16. Keep the tools accessible to attend repairs/faults in case of breakdown		2	0.5	1.5
			100	**35**	**65**
3. FIC/N0111 (Produce jam, jelly and ketchup)	PC1. Receive fruits and vegetables (tomato) from the supplier/vendor, check its weight and check the quality of fruits and veegtables through physical parameters such as appearance, colour, texture, maturity, etc.	**100**	3	1.5	1.5
	PC2. Open valves or start pump to fill water in the washing tank and control water level, dump fruits and vegetables in the washing tank for washing		1	0.5	0.5
	PC3. Switch on agitator of revolving screens/blades to immerse fruits and vegetables in water to remove dirt, soil and other impurities		1	0.5	0.5
	PC4. Start the ladder conveyor to lift fruits and vegetables from the washing tank and transfer to the washing line conveyor		1	0.5	0.5
	PC5. Open valves of the high pressure spraying system for fresh water and adjust pressure to spray water on fruits and vegetables on washing line conveyor for rinsing		1	0.5	0.5

Assessment Criteria

	PC6. Adjust controls to transfer washed fruit and vegetables to sorting/inspecting line, start and adjust speed of sorting/inspecting line conveyor to visually inspect and manually remove damaged, blemished and rotten fruits and vegetables		3	1	2
	PC7. Dump sorted fruits and vegetables in the peeler or corer (depending on the type of fruits), start machine , adjust speed to remove the peel or core of fruits or turn valves to introduce steam and adjust controls to maintain pressure for steam peeling fruits		3	1	2
	PC8. Open valve or pump water or open spraying system to wash the peeled fruits and vegetables, observe fruits and vegetables emerging from peeling /coring machine to ensure removal of peel/core		1	0.5	0.5
	PC9. Cut fruits and vegetables manually or load the fruits and vegetables in the chopper/cutter/slicer machine, adjust controls to cut fruits to required size, start machine, collect sliced fruits and vegetables from the discharge chute		3	1	2
	PC10. In case of mangoes, start conveyor and control speed to allow washed mangoes to pass through tip cutting line, cut the tip of the fruit manually, control conveyor speed to dump the tip cut mangoes into de-stoner machine to remove seed and peel		2	0.5	1.5
	PC11. Control speed of waste disposal conveyor to dispose waste following SOP		1	0.5	0.5
	PC12. Adjust and maintain speed of pulper conveyor to allow the fruits and vegetables to pass through the pulper cum finisher/ pulper refiner machine for pulping of fruits and vegetables and sieving pulp to required fineness, adjust position of discharge outlet to collect refined pulp in collection tank, check collected pulp to ensure it is free from seeds and fibre		2	0.5	1.5

Assessment Criteria

PC13. Replace damaged or clogged filter screen of pulper cum finisher/ pulper refiner machine		1	0.5	0.5
PC14. Adjust controls of hydraulic press machine to extract juice, start machine and control speed/rotation, start conveyor to allow cut/grated fruit to pass through hydraulic press/juice extraction machine to extract juice, remove skin, seeds and fibre through filter sieves		2	0.5	1.5
PC15. Change sieves or clean sieves of hydraulic press/juice extraction machine to avoid clogging		1	0.5	0.5
PC16. Open valves or start pump to allow extracted juice through finer sieves to remove very small and undesirable particles and collect filtered juice in collection tanks		2	0.5	1.5
PC17. Check the quality of fruit pulp/ fruit juice through physical parameters such as appearance, colour, odour, etc. sample and transfer to quality lab for analysis		2	1	1
PC18. Pump measured quantity of fruit pulp for preparing jam and fruit juice for preparing jelly (pulp of various fruit as per formulation for preparing mixed fruit jam) from holding tank/ container into cooking kettle/tank		3	1	2
PC19. Set temperature, pressure, stirrer speed, etc. of the cooking kettle/tank, set mixing time, cooking time, cooking temperature, etc, open valves to admit steam through the kettle or light burner to heat fruit pulp / fruit juice to require temperature and thickness with continuous stirring to avoid sticking/scorching or stir manually		5	2	3
PC20. Monitor pressure and temperature gauge and adjust controls to achieve specified pressure and temperature to cook fruit pulp / fruit juice		3	1	2
PC21. Open valve or start pump to transfer measured quantity of water into pre-mixing tank, set speed of stirrer of pre-mixing tank to stir water, measure specified quantity of pectin following formulation and add to water in the pre-mixing tank, control		3	1	2

Assessment Criteria

	speed of mixer for uniform mixing of pectin in water to prepare pectin solution				
	PC22. Measure ingredients such as sugar, pectin solution, flavour, colour etc for batch referring to the formulation chart and add in sequence into pulp/juice in kettle following SOP and continue cooking along with stirring		3	1	2
	PC23. Observe the cooking process and check the product in refractometer to ensure completeness of cooking process		3	1	2
	PC24. Check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to quality lab for analysis and conformance to standards		3	1	2
	PC25. Start pump or open valve to transfer product into filling tank of the packaging machine or tilt kettle and scoop contents out of kettle into container, manually transfer into hopper of the filling machine for packaging or manually fill hot product in packaging containers		2	0.5	1.5
	PC26. Pump measured quantity of tomato pulp/puree from holding tank/ container into cooking kettle		2	0.5	1.5
	PC27. Set temperature, pressure, stirrer speed, etc. of the cooking kettle, set mixing time, cooking time, cooking temperature etc, open valves to admit steam through the kettle or light burner to heat tomato paste to required temperature and thickness with continuous stirring to avoid sticking /scorching or stir manually		5	2	3
	PC28. Monitor pressure and temperature gauge and adjust controls to achieve specified temperature to cook tomato paste		4	1.5	2.5
	PC29. Measure ingredients such as sugar, salt, spice powder, vinegar, etc. required for batch, by referring to the formulation chart and add as per sequence into the tomato pulp/puree in kettle following SOP and continue cooking		4	1.5	2.5

Assessment Criteria

	PC30. Observe cooking process and check the quality of cooked product through feel, consistency, test the viscosity using viscometer to ensure completeness of the cooking process		4	1	3
	PC31. Check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to quality lab for analysis and conformance to standards		4	2	2
	PC32. Start pump or open valve to transfer product into filling tank of the packaging machine or tilt kettle or scoop contents out of kettle into container, manually transfer into hopper of the filling machine for packaging or manually filling hot product in packaging containers		2	0.5	1.5
	PC33. Open valves or start pump to transfer hot product into the packaging machine to pack jam/jelly		1	0.5	0.5
	PC34. Load packing materials such as glass bottle, plastic bottle, pouches, etc. and sealing materials such as lid, closures, etc. in packaging machines		1	0.5	0.5
	PC35. Set packaging machine for filling volume, speed, etc,, start automatic packaging machine for forming, washing bottles, filling, sealing container (or) fill measured quantity of hot product in packaging containers , place lid and close manually/ mechanically		2	0.5	1.5
	PC36. Start machine to fill hot product in the container, check weight of packed product periodically to ensure its conformance to standards		2	0.5	1.5
	PC37. Start cooling line conveyor and control speed to allow packed contianers to pass through the cooling tunnel, set controls of water temperature, pressure etc. and start machine to spray water on containers to cool and set product (setting in case of jam and jelly) or arrange filled jam/jelly containers in rack and allow to stand for specified time following SOP to cool and set product		2	0.5	1.5

Assessment Criteria

	PC38. Start drying line conveyor and control speed to allow the cooled bottles to pass through the drying tunnel, set controls of air temperature, air flow rate etc. and start machine to dry bottle before labelling		2	0.5	1.5
	PC39. Load labels in labelling machine, set date coding machine for batch number, date of manufacture, date of expiry, etc., start labelling line conveyor and control speed to allow packed container to pass through labelling and date coding machine for labelling and date coding packed products		2	0.5	1.5
	PC40. Place the packed and labelled products in cartons and transfer to storage area and store maintaining storage conditions following SOP		2	0.5	1.5
	PC41. Report discrepancies/concerns to department supervisor for immediate action		1	0.5	0.5
	PC42. Clean the work area, machineries, equipment and tools using approved cleaning agents and sanitizers		2	0.5	1.5
	PC43. Attend minor repairs/faults of all machines (if any)		2	0.5	1.5
	PC44. Ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or following suppliers instructions/manuals		1	0.5	0.5
			100	**35**	**65**
4. FIC/N0112 (Complete documentation and record keeping related to production of jam, jelly and ketchup)	PC1. Document and maintain recordsof details of raw materials and packaging materials such as name or raw materials, type and variety, vendor/supplier details, grown area, grown season, quantity, receiving date, supplier details, receiving date/ date of manufacture, expiry date, supplier quality document, quality parameters of all raw materials, internal quality analysis report, etc. as per organisation standards	**100**	10	6	4
	PC2. Document and maintain record of observations (if any) related to raw materials and packaging materials		5	3	2

Assessment Criteria

PC3.	Load the raw materials details in ERP for future reference	5	3	2
PC4.	Verify the documents and track from finished product to raw materials, in case of quality concerns and during quality management system audits	5	3	2
PC5.	Document and maintain records of production plan with details such as the product details, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment	10	6	4
PC6.	Document and maintain records of process details such as type of raw material used, process parameters (temperature, time, pressure, etc. as applicable) for entire production and packaging in process chart or production log for all products produced	15	9	6
PC7.	Document and maintain records of batch size, production yield, wastage of raw materials, energy utilization and final products produced	10	6	4
PC8.	Document and maintain record of observations (if any) or deviations related to process and production	5	3	2
PC9.	Load the production plan and process details in ERP for future reference	5	3	2
PC10.	Verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits	5	3	2
PC11.	Document and maintain records of the types of finished products produced	3	2	1
PC12.	Document and maintain records of the finished products details such as batch number, time of packing, date of manufacture, date of expiry, other label details, primary, secondary and tertiary packaging materials for all finished products, storage conditions, etc. as per organisation standards	7	4	3
PC13.	Document and maintain record of observations or deviations (if any) related to finished products	5	3	2
PC14.	Load the finished product details in ERP for future reference	5	3	2

Assessment Criteria

	PC15. Verify the documents and track from finished product to raw materials (in case of quality concerns) and for quality management system audits		5	3	2
			100	**60**	**40**
5. FIC/N9001 (Food safety hygiene and sanitation for processing food products)	PC1. Comply with food safety and hygiene procedures followed in the organisation		5	2	3
	PC2. Ensure personal hygiene by using of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.		6	1	5
	PC3. Ensure hygienic production of food by inspecting raw materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters		5	2	3
	PC4. Pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations		10	4	6
	PC5. Clean maintain and monitor food processing equipment periodically, using it only for specified purpose		5	2	3
	PC6. Use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required		10	4	6
	PC7. Follow housekeeping practices by having designated area for materials/tools		5	2	3
	PC8. Follow industry standards like GMP and HACCP and product recall process		10	4	6
	PC9. Attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them	**100**	5	1	4
	PC10. Identify, document and report problems such as rodents and pests to management		5	1	4
	PC11. Conduct workplace checklist audits before and after work to ensure safety and hygiene		5	1	4

Assessment Criteria

	PC12. Document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system		4	1	3
	PC13. Determine the quality of food using criteria such as aroma, appearance, taste and best before date, and take immediate measures to prevent spoilage		5	2	3
	PC14. Store raw materials, finished products, allergens separately to prevent cross-contamination		5	2	3
	PC15. Label raw materials and finished products and store them in designated storage areas according to safe food practices		5	2	3
	PC16. Follow stock rotation based on FEFO / FIFO		10	4	6
			100	**35**	**65**