Squash and Juice Processing Technician

QP Code: FIC/Q0101

Version: 2.0

NSQF Level: 3

Food Industry Capacity & Skill Initiative || Shriram Bharatiya Kala kendra, 3rd floor, 1, Copernicus Marg, Mandi House, New Delhi
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Contents

FIC/Q0101: Squash and Juice Processing Technician

Brief Job Description

A Squash and Juice Processing Technician is responsible for preparation of squash and juice from fruits through the process of receiving, checking raw material quality, sorting, pulping, extracting juice, pasteurizing, filtering, sampling for quality analysis, filing, packaging and storing.

Personal Attributes

A Squash and Juice 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.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. FIC/N0101: Prepare and maintain work area and process machineries for squash and juice processing

2. FIC/N0102: Prepare for production of squash and juice

3. FIC/N0103: Produce Squash and Juice

4. FIC/N0104: Complete documentation and record keeping related to production of squash and juice

5. FIC/N9001: Ensure food safety, hygiene and sanitation for processing food products

Qualification Pack (QP) 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-2004/7414.90

Minimum Educational Qualification & Experience	10th Class with 1 Year of experience relevant experience OR 8th Class with 1 Year of experience relevant experience
Minimum Level of Education for Training in School	8th Class
Pre-Requisite License or Training	1. Method of preservation of fruits2. Handling fruits, packaging and storage techniques3. Quality assessment of raw material, packaging materialsand finished products4. Operation and maintenance of processing machineriesand equipments5. Waste management6. GMP7. HACCP8. QMS9. Computer basics and ERP system followed by theorganization10. Training in Food Safety Standards and Regulations (as perFSSAI) (Mandatory)
Minimum Job Entry Age	18 Years
Last Reviewed On	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Approval Date	30/09/2021
Version	2.0
Reference code on NQR	2021/FI/FICSI/04571
NQR Version	1

FIC/N0101: Prepare and maintain work area and process machineries for squash and juice processing

Description

This unit is about preparing work area for hygiene and safety, and ensuring performance, efficiency and maintenance of process machineries and tools for producing squash and juice, as per the specifications and standards of the organization

Elements and Performance Criteria

Prepare and maintain work area (for production of squash and juice)

To be competent, the user/individual on the job must be able to:

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 production of squash and juice)

To be competent, the user/individual on the job must be able to:

PC4. check the working and performance of all machineries and tools used 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 organization specifications and standards

PC6. place the necessary tools required for process

PC7. attend to the minor repairs/ faults of all machines, if required

Prepare and maintain work area (for drying/dehydration of fruits and vegetables)

To be competent, the user/individual on the job must be able to:

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 organisation standards and industry requirements

Prepare and maintain process machineries and tools (for drying/dehydration of fruits and vegetables)

To be competent, the user/individual on the job must be able to:

PC4. check the working and performance of all machineries and tools used for the process such as washer, peeler, corer, slicer, drier, packaging machines, etc.

PC5. clean the machineries and tools used with approved sanitizers following the specifications and standards of the organization

PC6. place the necessary tools required for process

PC7. attend minor repairs/faults of all machines, if required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organization standards, process standards and procedures followed in the organisation

KU2. types of products produced by the organisation

KU3. code of business conduct

KU4. dress code to be followed

KU5. job responsibilities/duties and standard operating procedures

KU6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution

KU7. provision of wages, working hours as per organisation policy

KU8. food safety and hygiene standards followed

KU9. types of chemicals, materials and equipment required for the cleaning and maintenance

KU10. cleaning process to disinfect equipment/ tools

KU11. supplier/manufacturers instructions related to cleaning and maintenance

KU12. knowledge of food safety standards and regulations (as per FSSAI)

KU13. knowledge of legal regulations pertaining to work place like 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.

KU14. job responsibilities/duties and standard operating procedures

KU15. cleaning process to disinfect equipment/ tools

KU16. knowledge of food safety standards and Regulations (as per HSSAI)

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note the information communicated by the supervisor

GS2. note the raw materials used for production and the finished products produced

GS3. note the readings of the process parameters and provide necessary information to fill the process chart

GS4. note down observations (if any) related to the process

GS5. write information documents to internal departments/ internal teams

GS6. note down the data for online ERP or as per applicability in the organization

GS7. read and interpret the process required for producing various types of products

GS8. read and interpret and process flowchart for all products produced

GS9. read equipment manuals and process documents to understand the equipments operation and process requirement

GS10. read internal information documents sent by internal teams

GS11. discuss task lists, schedules and activities with the supervisor

GS12. effectively communicate with the team members

GS13. question the supervisor in order to understand the nature of the problem and to clarify queries

GS14. attentively listen and comprehend the information given by the speaker

GS15. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS16. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

GS17. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

GS18. plan and organize the work order and jobs received from the supervisor

GS19. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor

GS20. plan and prioritize the work based on the instructions received from the supervisor

GS21. plan to utilise time and equipment's effectively

GS22. organize all process/ equipment manuals so as to access information easily

GS23. support the supervisor in scheduling tasks for helper(s)

GS24. understand customer requirements and their priority and respond as per their needs

GS25. support supervisor in solving problems by detailing out problems

GS26. discuss the possible solutions with the supervisor for problem solving

GS27. apply domain information about maintenance processes and technical knowledge about tools and equipment

GS28. use common sense and make judgments on day to day basis

GS29. use reasoning skills to identify and resolve basic problems

GS30. use intuition to detect any potential problems which could arise during operations

GS31. use acquired knowledge of the process for identifying and handling issues

GS32. note the information communicated by the supervisor

GS33. read internal information documents sent by internal teams

GS34. discuss task lists, schedules and activities with the supervisor

GS35. effectively communicate with the team members

GS36. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS37. plan and prioritize the work based on the instructions received from the supervisor

GS38. support the supervisor in scheduling tasks for helper(s)

GS39. apply domain information about maintenance Processes and technical knowledge about tools and equipment

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare and maintain work area (for production of squash and juice)	**18**	**32**	**-**	**-**
PC1. clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests	10	15	-	-
PC2. ensure that work area is safe and hygienic for food processing	3	7	-	-
PC3. dispose waste materials as per defined SOP'S and industry requirements	5	10	-	-
Prepare and maintain process machineries and tools (for production of squash and juice)	**17**	**33**	**-**	**-**
PC4. check the working and performance of all machineries and tools used such as fruit washer, peeler, fruit pulper, juice extractor, clarifier, filter, pasteurizer, steam jacketed kettles, packaging machines, etc	5	10	-	-
PC5. clean the machineries and tools used with approved sanitizers following organization specifications and standards	5	10	-	-
PC6. place the necessary tools required for process	2	3	-	-
PC7. attend to the minor repairs/ faults of all machines, if required	5	10	-	-
Prepare and maintain work area (for drying/dehydration of fruits and vegetables)	**18**	**32**	**-**	**-**
PC1. clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests	10	15	-	-
PC2. ensure that work area is safe and hygienic for food processing	3	7	-	-
PC3. dispose waste materials as per organisation standards and industry requirements	5	10	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare and maintain process machineries and tools (for drying/dehydration of fruits and vegetables)	**17**	**33**	**-**	**-**
PC4. check the working and performance of all machineries and tools used for the process such as washer, peeler, corer, slicer, drier, packaging machines, etc.	5	10	-	-
PC5. clean the machineries and tools used with approved sanitizers following the specifications and standards of the organization	5	10	-	-
PC6. place the necessary tools required for process	2	3	-	-
PC7. attend minor repairs/faults of all machines, if required	5	10	-	-
NOS Total	**70**	**130**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N0101
NOS Name	Prepare and maintain work area and process machineries for squash and juice processing
Sector	Food Processing
Sub-Sector	Fruits and Vegetables
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Clearance Date	30/09/2021

FIC/N0102: Prepare for production of squash and juice

Description

This unit is about preparing for the production of squash and juice from various fruits by planning production and machinery utilization, and organizing raw materials, packaging materials and machineries for production

Elements and Performance Criteria

Provide support in production planning (for production of squash and juice)

To be competent, the user/individual on the job must be able to:

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 production of squash and juice)

To be competent, the user/individual on the job must be able to:

PC7. ensure the 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 carrying out production (for squash and juice)

To be competent, the user/individual on the job must be able to:

PC12. refer to the 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. sharpen cutter blades and change the cutter/slicer blades

PC16. fix, change, clean filters and sieves of processing machineries

PC17. ensure working and performance of required machineries and tools

PC18. keep the tools accessible to attend repairs/faults in case of breakdown

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1.	organization standards, process standards and procedures followed in the organisation
KU2.	types of products produced by the organisation
KU3.	code of business conduct
KU4.	dress code to be followed
KU5.	job responsibilities/duties and standard operating procedures
KU6.	internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution
KU7.	provision of wages, working hours as per organisation policy
KU8.	food safety and hygiene standards followed
KU9.	types of raw materials (various fruits) and products obtained from each raw material
KU10.	types of machineries used in processing and machineries used in the organisation
KU11.	maintenance of process equipments
KU12.	supplier/manufacturers instructions related to machineries
KU13.	process for producing each product
KU14.	basic mathematics
KU15.	calculation of raw material for required quantity of finished product
KU16.	quality parameters, basic food microbiology and quality assessment based on physical parameters
KU17.	food safety and hygiene
KU18.	GMP
KU19.	HACCP

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1.	note the information communicated by the supervisor
GS2.	note the raw materials used for production and the finished products produced
GS3.	note the readings of the process parameters and provide necessary information to fill the process chart
GS4.	note down observations (if any) related to the process
GS5.	write information documents to internal departments/ internal teams
GS6.	note down the data for online ERP or as per applicability in the organization
GS7.	read and interpret the process required for producing various types of products
GS8.	read and interpret and process flowchart for all products produced
GS9.	read equipment manuals and process documents to understand the equipments operation and process requirement
GS10.	read internal information documents sent by internal teams

GS11. discuss task lists, schedules and activities with the supervisor

GS12. effectively communicate with the team members

GS13. question the supervisor in order to understand the nature of the problem and to clarify queries

GS14. attentively listen and comprehend the information given by the speaker

GS15. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS16. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

GS17. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

GS18. plan and organize the work order and jobs received from the supervisor

GS19. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor

GS20. plan and prioritize the work based on the instructions received from the supervisor

GS21. plan to utilise time and equipment's effectively

GS22. organize all process/ equipment manuals so as to access information easily

GS23. support the supervisor in scheduling tasks for helper(s)

GS24. understand customer requirements and their priority and respond as per their needs

GS25. support supervisor in solving problems by detailing out problems

GS26. discuss the possible solutions with the supervisor for problem solving

GS27. apply domain information about maintenance processes and technical knowledge about tools and equipment

GS28. use common sense and make judgments on day to day basis

GS29. use reasoning skills to identify and resolve basic problems

GS30. use intuition to detect any potential problems which could arise during operations

GS31. use acquired knowledge of the process for identifying and handling issues

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Provide support in production planning (for production of squash and juice)	**17**	**28**	**-**	**-**
PC1. read and understand the production order from the supervisor	4	6	-	-
PC2. check the availability of raw materials, packaging materials, equipment and manpower	2	3	-	-
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	5	10	-	-
PC4. calculate the batch size based on the production order and machine capacity	2	3	-	-
PC5. calculate the raw material requirement (considering the process loss) to produce the required quantity of finished product(s)	2	3	-	-
PC6. calculate the raw materials (including ingredients, if any), packaging materials and manpower requirement for completing the order	2	3	-	-
Plan equipment utilization (for production of squash and juice)	**8**	**17**	**-**	**-**
PC7. ensure the working and performance of each equipment required for process	2	5	-	-
PC8. calculate the process time for effective utilization of machineries	2	5	-	-
PC9. plan batch size considering full capacity utilization of machineries	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. plan to utilize machineries for multiple products without affecting the quality of the finished products, and to optimize production and saving energy	1	2	-	-
PC11. allot responsibilities/ work to the assistants and helpers	2	3	-	-
Organize and check equipments and raw material for carrying out production (for squash and juice)	**10**	**20**	**-**	**-**
PC12. refer to the process chart/ product flow chart/formulation chart for product(s) produced	1	2	-	-
PC13. weigh the raw materials (including ingredients, if any) required for the batch	1	2	-	-
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	4	6	-	-
PC15. sharpen cutter blades and change the cutter/slicer blades	0.5	1.5	-	-
PC16. fix, change, clean filters and sieves of processing machineries	2	3	-	-
PC17. ensure working and performance of required machineries and tools	1	4	-	-
PC18. keep the tools accessible to attend repairs/faults in case of breakdown	0.5	1.5	-	-
NOS Total	**35**	**65**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N0102
NOS Name	Prepare for production of squash and juice
Sector	Food Processing
Sub-Sector	Fruits and Vegetables
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Clearance Date	30/09/2021

FIC/N0103: Produce Squash and Juice

Description

This unit is about producing squash and juice using various machineries as per specifications and standards of the organization

Elements and Performance Criteria

Receive, wash, sort and slice fruits

To be competent, the user/individual on the job must be able to:

PC1. receive fruits from the supplier/vendor, check weight and quality through physical parameters such as appearance, colour, texture, maturity, etc

PC2. open valves or start pump to fill water into the washing tank and control water level, dump fruits manually or start elevator conveyor to transfer fruits into washing tank for washing or wash and rinse manually

PC3. switch on agitator of revolving screens/blades to immerse each fruit into water to remove dirt, soil and other impurities

PC4. start ladder conveyor and control speed to lift fruits from the washing tank and transfer to washing line conveyor

PC5. open valves of the high pressure spraying system for fresh water and adjust pressure to spray water on fruits for rinsing

PC6. start and adjust speed of sorting/inspecting line conveyor to transfer fruits to inspection station, inspect visually and remove damaged, blemished and rotten fruit; dispose waste following SOP

PC7. cut fruits manually or load the fruits in the chopper/cutter/slicer/grating or grinding machine, adjust controls to cut/grate fruits to required size, start machine and then collect sliced/grated fruits from the discharge chute

Extract fruit juice

To be competent, the user/individual on the job must be able to:

PC8. start the conveyor and control speed to transfer fruits to juice extractors (in case of citrus fruits), crusher and fruit mills (for fruits such as apples, pear, etc.), or stem and seed remover (grapes and berries)

PC9. set controls such as speed/rotation of stem and seed remover machine, start machine and feed fruits such as grapes and berries though conveyor to remove stem and seed; dispose waste following SOP

PC10. set controls such as speed/rotation, feed rate, etc. of citrus fruit extractor or rotary press machine to extract juice from citrus juice (citrus fruit extractor), start machine and open valves to allow citrus fruits to pass though machine to extract juice; simultaneously remove peel and seeds, collect juice flowing though the discharge outlet in collection tank; dispose waste following SOP

PC11. set controls such as speed/rotation of fruit mills (fruit grinding mill/grater mill/ hammer mill) depending on the type of fruit, start machine and open valves to allow fruits such as apple, pear, etc. to pass through machine for grinding fruit into fine gratings

PC12. measure enzymes required for batch following formulation chart, pump cut/ grated fruit into reservoir tank and add measured quantity of enzymes (for selected fruits like apple), set timer for fruit-enzyme contact time following SOP and allow to stand for specified time for enzyme activity

PC13. adjust controls such as speed/rotation of pressing machines (hydraulic press/ cloth press/ continuous belt press / screw press, etc.), start machine and open valves to allow (enzyme treated) fruits such as apple, pear, etc. to pass through machine for extraction of juice and removal of peel, stem and seeds, collect juice in collection tank; dispose waste following SOP

PC14. open valve of start pump to transfer fruit juice to filter for removing small suspended particles (in case of apple, pear, etc.), collect filtered juice in collection tank

PC15. change sieves or clean sieves of juice extraction machines to avoid clogging; change or sharpen blades of fruit mills for better grinding

PC16. check the quality of extracted juice through physical parameters such as appearance, colour, consistency, flavour, taste, etc., sample and transfer to quality lab for analysis

Pasteurize Juice

To be competent, the user/individual on the job must be able to:

PC17. set controls such as temperature, steam pressure, etc. of vacuum concentrate machine; start pump to allow fruit juice to pass thorough machine to concentrate fruit juice and recover aroma (aroma stripping

PC18. set process parameters such as pressure, temperature, flow rate, time, etc. of pasteurizer

PC19. open valves to allow steam to pass through pasteurizer, observe temperature and pressure gauge and adjust controls to achieve required pressure and temperature

PC20. open valves to allow juice to pass to the pasteurizer, monitor and maintain process parameters throughout the pasteurization process (pasteurize cloudy juice immediately after pressing)

PC21. open valves or start pump to circulate water through heat exchangers to cool pasteurized juice, open valves to allow pasteurised juice to pass through heat exchangers to cool to required temperature, collect in collection tank

Clarify Juice

To be competent, the user/individual on the job must be able to:

PC22. measure enzymes required for clarification of juice following formulation chart, add to the pasteurized juice in the collection tank (for obtaining clear juice), start stirrer and control speed for uniform mixing of enzymes

PC23. open valves or start pump to allow enzyme treated juice to pass through ultra filtration unit to remove smallest particles and obtain clear juice

PC24. check quality of juice through physical parameters such as colour, appearance, flavour, taste, etc., sample and transfer to lab for quality analysis and to ensure conformance to standards

PC25. pump processed juice to the holding /reservoir tanks and store maintaining storage parameters until packaging or further processing (to prepare squash)

Prepare Squash

To be competent, the user/individual on the job must be able to:

PC26. open valve to admit measured quantity of water into steam jacketed kettle/tank, observe gauge or designated mark for filled quantity

PC27. measure sugar (add acids if specified in the formulation) and add it to water in the kettle/tank to prepare sugar syrup, turn on mixer/agitator and control speed to mix ingredients

PC28. turn valves to admit steam into kettle/tank, set required pressure, temperature and time to heat the solution following sop, observe pressure and temperature gauge, adjust valves to maintain set parameters

PC29. check sugar syrup using refractometer instrument to conform its specifications to standards, open valves or start pump to allow sugar syrup to pass through filter to remove undesirable particles and sediments, collect filtered sugar syrup in storage or holding tanks

PC30. start pump to transfer measured quantity of (single or multiple fruit) juice concentrate or clarified juice (depending on type of product produced) , water, sugar syrup into blending tank; check pumped quantity through the level indicator and glass windows of the tank, add measured quantity of acids, preservatives, colour, flavor, etc. following sop, set controls of stirrer/agitator (mixing speed, mixing time, etc.) and start mixer, observe mixing process, collect sample and check physical parameters to ensure uniform mixing

PC31. adjust controls to set temperature, pressure, etc. of pasteurizer/heat exchanger; turn valves to admit steam, start pump to transfer blended product into pasteurizer/heat exchanger, check dials and adjust gauges to control process parameters, open valves to allow water to pass thorough heat exchanger to cool product, open valves to collect finished product in storage tank, to hold until packaging

PC32. check the quality of finished product through physical parameters (appearance, colour, consistency, flavour, taste etc.), sample and transfer to quality lab for analysis and to ensure conformance to quality standards

Fill, pack and store juice and squash

To be competent, the user/individual on the job must be able to:

PC33. start pump to transfer finished product into the filling tank of packaging machine

PC34. load packing materials (tetra packs, glass bottles, plastic containers, etc.) in packaging machine, sealing materials (caps, lids, crowns, etc.) in sealing machine, labels in labelling machine; set machine for filling volume, set date coding machine for date code details (batch number, date of manufacture, date of expiry, etc.)

PC35. start automatic packaging machine to form packaging materials, wash bottle/plastic containers, fill measured quantity of finished products, close/seal and label, check the weight of packed product periodically to ensure its conformance to standards

PC36. set controls of straw attaching machine and start machine to attach straw in the packaging material (like tetra pack) of packed product

PC37. place packed and labelled products in cartons and transfer to storage area and store maintaining storage conditions following SOP

PC38. report discrepancies/concerns to department supervisor for immediate action

Carry out post production cleaning and regular maintenance of equipment

To be competent, the user/individual on the job must be able to:

PC39. clean the work area, machineries, equipment and tools using approved cleaning agents and sanitizers

PC40. attend minor repairs/faults of all machines (if any)

PC41. 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 (KU)

The individual on the job needs to know and understand:

KU1. organization standards, process standards and procedures followed in the organisation
KU2. types of products produced by the organisation
KU3. code of business conduct
KU4. dress code to be followed
KU5. job responsibilities/duties and standard operating procedures
KU6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution
KU7. provision of wages, working hours as per organisation policy
KU8. food safety and hygiene standards followed
KU9. types and varieties of raw materials (fruits) and products produced from eachraw material
KU10. production process, process parameters and product formulation for production of various products produced
KU11. types of machineries used in processing and machineries used in the organisation
KU12. handling all processing machineries
KU13. maintenance of machineries, equipments and too
KU14. basic mathematics
KU15. aseptic packaging process and parameters, handling aseptic packaging machineries
KU16. procedure for disposal of waste from agricultural produce
KU17. quality parameters, basic food microbiology and quality assessment based on physical parameters
KU18. types and category of packaging materials, packaging machineries
KU19. storage procedures for raw materials, packaging materials and finished goods
KU20. cleaning procedures such as CIP and COP
KU21. knowledge of sanitizers and disinfectants and its handling and storing methods
KU22. food laws and regulations on product, packaging and labelling
KU23. food safety and hygiene
KU24. GMP
KU25. HACCP

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note the information communicated by the supervisor
GS2. note the raw materials used for production and the finished products produced
GS3. note the readings of the process parameters and provide necessary information to fill the process chart
GS4. note down observations (if any) related to the process

GS5. write information documents to internal departments/ internal teams

GS6. note down the data for online erp or as per applicability in the organization

GS7. read and interpret the process required for producing various types of products

GS8. read and interpret and process flowchart for all products produced

GS9. read equipment manuals and process documents to understand the equipments operation and process requirement

GS10. read internal information documents sent by internal teams

GS11. discuss task lists, schedules and activities with the supervisor

GS12. effectively communicate with the team members

GS13. question the supervisor in order to understand the nature of the problem and to clarify queries

GS14. attentively listen and comprehend the information given by the speaker

GS15. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS16. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

GS17. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

GS18. plan and organize the work order and jobs received from the supervisor

GS19. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor

GS20. plan and prioritize the work based on the instructions received from the supervisor

GS21. plan to utilise time and equipment's effectively

GS22. organize all process/ equipment manuals so as to access information easily

GS23. support the supervisor in scheduling tasks for helper(s)

GS24. understand customer requirements and their priority and respond as per their needs

GS25. support supervisor in solving problems by detailing out problems

GS26. discuss the possible solutions with the supervisor for problem solving

GS27. apply domain information about maintenance processes and technical knowledge about tools and equipment

GS28. use common sense and make judgments on day to day basis

GS29. use reasoning skills to identify and resolve basic problems

GS30. use intuition to detect any potential problems which could arise during operations

GS31. use acquired knowledge of the process for identifying and handling issues

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Receive, wash, sort and slice fruits	**19**	**33**	**-**	**-**
PC1. receive fruits from the supplier/vendor, check weight and quality through physical parameters such as appearance, colour, texture, maturity, etc	4	6	-	-
PC2. open valves or start pump to fill water into the washing tank and control water level, dump fruits manually or start elevator conveyor to transfer fruits into washing tank for washing or wash and rinse manually	2	3	-	-
PC3. switch on agitator of revolving screens/blades to immerse each fruit into water to remove dirt, soil and other impurities	5	10	-	-
PC4. start ladder conveyor and control speed to lift fruits from the washing tank and transfer to washing line conveyor	2	3	-	-
PC5. open valves of the high pressure spraying system for fresh water and adjust pressure to spray water on fruits for rinsing	2	3	-	-
PC6. start and adjust speed of sorting/inspecting line conveyor to transfer fruits to inspection station, inspect visually and remove damaged, blemished and rotten fruit; dispose waste following SOP	2	3	-	-
PC7. cut fruits manually or load the fruits in the chopper/cutter/slicer/grating or grinding machine, adjust controls to cut/grate fruits to required size, start machine and then collect sliced/grated fruits from the discharge chute	2	5	-	-
Extract fruit juice	**14.5**	**26.5**	**-**	**-**
PC8. start the conveyor and control speed to transfer fruits to juice extractors (in case of citrus fruits), crusher and fruit mills (for fruits such as apples, pear, etc.), or stem and seed remover (grapes and berries)	2	5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. set controls such as speed/rotation of stem and seed remover machine, start machine and feed fruits such as grapes and berries though conveyor to remove stem and seed; dispose waste following SOP	1	2	-	-
PC10. set controls such as speed/rotation, feed rate, etc. of citrus fruit extractor or rotary press machine to extract juice from citrus juice (citrus fruit extractor), start machine and open valves to allow citrus fruits to pass though machine to extract juice; simultaneously remove peel and seeds, collect juice flowing though the discharge outlet in collection tank; dispose waste following SOP	1	2	-	-
PC11. set controls such as speed/rotation of fruit mills (fruit grinding mill/grater mill/ hammer mill) depending on the type of fruit, start machine and open valves to allow fruits such as apple, pear, etc. to pass through machine for grinding fruit into fine gratings	2	3	-	-
PC12. measure enzymes required for batch following formulation chart, pump cut/ grated fruit into reservoir tank and add measured quantity of enzymes (for selected fruits like apple), set timer for fruit-enzyme contact time following SOP and allow to stand for specified time for enzyme activity	1	2	-	-
PC13. adjust controls such as speed/rotation of pressing machines (hydraulic press/ cloth press/ continuous belt press / screw press, etc.), start machine and open valves to allow (enzyme treated) fruits such as apple, pear, etc. to pass through machine for extraction of juice and removal of peel, stem and seeds, collect juice in collection tank; dispose waste following SOP	1	2	-	-
PC14. open valve of start pump to transfer fruit juice to filter for removing small suspended particles (in case of apple, pear, etc.), collect filtered juice in collection tank	4	6	-	-
PC15. change sieves or clean sieves of juice extraction machines to avoid clogging; change or sharpen blades of fruit mills for better grinding	0.5	1.5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC16. check the quality of extracted juice through physical parameters such as appearance, colour, consistency, flavour, taste, etc., sample and transfer to quality lab for analysis	2	3	-	-
Pasteurize Juice	**1.5**	**5.5**	**-**	**-**
PC17. set controls such as temperature, steam pressure, etc. of vacuum concentrate machine; start pump to allow fruit juice to pass thorough machine to concentrate fruit juice and recover aroma (aroma stripping	1	4	-	-
PC18. set process parameters such as pressure, temperature, flow rate, time, etc. of pasteurizer	0.5	1.5	-	-
PC19. open valves to allow steam to pass through pasteurizer, observe temperature and pressure gauge and adjust controls to achieve required pressure and temperature	-	-	-	-
PC20. open valves to allow juice to pass to the pasteurizer, monitor and maintain process parameters throughout the pasteurization process (pasteurize cloudy juice immediately after pressing)	-	-	-	-
PC21. open valves or start pump to circulate water through heat exchangers to cool pasteurized juice, open valves to allow pasteurised juice to pass through heat exchangers to cool to required temperature, collect in collection tank	-	-	-	-
Clarify Juice	-	-	-	-
PC22. measure enzymes required for clarification of juice following formulation chart, add to the pasteurized juice in the collection tank (for obtaining clear juice), start stirrer and control speed for uniform mixing of enzymes	-	-	-	-
PC23. open valves or start pump to allow enzyme treated juice to pass through ultra filtration unit to remove smallest particles and obtain clear juice	-	-	-	-
PC24. check quality of juice through physical parameters such as colour, appearance, flavour, taste, etc., sample and transfer to lab for quality analysis and to ensure conformance to standards	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. pump processed juice to the holding /reservoir tanks and store maintaining storage parameters until packaging or further processing (to prepare squash)	-	-	-	-
Prepare Squash	-	-	-	-
PC26. open valve to admit measured quantity of water into steam jacketed kettle/tank, observe gauge or designated mark for filled quantity	-	-	-	-
PC27. measure sugar (add acids if specified in the formulation) and add it to water in the kettle/tank to prepare sugar syrup, turn on mixer/agitator and control speed to mix ingredients	-	-	-	-
PC28. turn valves to admit steam into kettle/tank, set required pressure, temperature and time to heat the solution following sop, observe pressure and temperature gauge, adjust valves to maintain set parameters	-	-	-	-
PC29. check sugar syrup using refractometer instrument to conform its specifications to standards, open valves or start pump to allow sugar syrup to pass through filter to remove undesirable particles and sediments, collect filtered sugar syrup in storage or holding tanks	-	-	-	-
PC30. start pump to transfer measured quantity of (single or multiple fruit) juice concentrate or clarified juice (depending on type of product produced) , water, sugar syrup into blending tank; check pumped quantity through the level indicator and glass windows of the tank, add measured quantity of acids, preservatives, colour, flavor, etc. following sop, set controls of stirrer/agitator (mixing speed, mixing time, etc.) and start mixer, observe mixing process, collect sample and check physical parameters to ensure uniform mixing	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC31. adjust controls to set temperature, pressure, etc. of pasteurizer/heat exchanger; turn valves to admit steam, start pump to transfer blended product into pasteurizer/heat exchanger, check dials and adjust gauges to control process parameters, open valves to allow water to pass thorough heat exchanger to cool product, open valves to collect finished product in storage tank, to hold until packaging	-	-	-	-
PC32. check the quality of finished product through physical parameters (appearance, colour, consistency, flavour, taste etc.), sample and transfer to quality lab for analysis and to ensure conformance to quality standards	-	-	-	-
Fill, pack and store juice and squash	**-**	**-**	**-**	**-**
PC33. start pump to transfer finished product into the filling tank of packaging machine	-	-	-	-
PC34. load packing materials (tetra packs, glass bottles, plastic containers, etc.) in packaging machine, sealing materials (caps, lids, crowns, etc.) in sealing machine, labels in labelling machine; set machine for filling volume, set date coding machine for date code details (batch number, date of manufacture, date of expiry, etc.)	-	-	-	-
PC35. start automatic packaging machine to form packaging materials, wash bottle/plastic containers, fill measured quantity of finished products, close/seal and label, check the weight of packed product periodically to ensure its conformance to standards	-	-	-	-
PC36. set controls of straw attaching machine and start machine to attach straw in the packaging material (like tetra pack) of packed product	-	-	-	-
PC37. place packed and labelled products in cartons and transfer to storage area and store maintaining storage conditions following SOP	-	-	-	-
PC38. report discrepancies/concerns to department supervisor for immediate action	-	-	-	-
Carry out post production cleaning and regular maintenance of equipment	**-**	**-**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC39. clean the work area, machineries, equipment and tools using approved cleaning agents and sanitizers	-	-	-	-
PC40. attend minor repairs/faults of all machines (if any)	-	-	-	-
PC41. ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the sop or following suppliers instructions/manuals	-	-	-	-
NOS Total	**35**	**65**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N0103
NOS Name	Produce Squash and Juice
Sector	Food Processing
Sub-Sector	Fruits and Vegetables, Bread and Bakery, Packaged Goods
Occupation	GENERIC
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Clearance Date	30/09/2021

FIC/N0104: Complete documentation and record keeping related to production of squash and juice

Description

This unit is about documenting and maintaining records on raw materials, process and finished products related to production of squash and juice.

Elements and Performance Criteria

Document and maintain records of raw materials (for production of squash and juice)

To be competent, the user/individual on the job must be able to:

PC1. document and maintain record of details of raw materials and packaging materials (name of raw materials, type and variety, vendor/supplier details, season, grown area, 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 on 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 schedule and process parameters (for production of squash and juice)

To be competent, the user/individual on the job must be able to:

PC5. document and maintain records of production plan with details (product details, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment)

PC6. document and maintain records of process details (type or raw material used, process parameters such as temperature, time, pressure, etc. as applicable) for entire production 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 (for production of squash and juice)

To be competent, the user/individual on the job must be able to:

PC11. document and maintain records of the types of finished products produced

PC12. document and maintain records of the finished products details (batch number, time of packing, date of manufacture, date of expiry, other label details, primary,secondary and tertiary packaging materials, storage conditions, etc.)as per organisation standards

PC13. document and maintain record on 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 ingredients, in case of quality concerns and for quality management system audits

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organization standards, process standards and procedures followed in the organisation

KU2. types of products produced by the organisation

KU3. code of business conduct

KU4. dress code to be followed

KU5. job responsibilities/duties and standard operating procedures

KU6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution

KU7. provision of wages, working hours and accident compensation as per organisation policy

KU8. food safety and hygiene standards followed

KU9. documentation system followed in the organization such as production chart, process chart and finished products chart

KU10. details to be recorded on raw materials and finished products

KU11. details to be recorded and maintained on production plan and process parameters

KU12. methods to docuemnt and maintain records on observations (if any) related to raw materials, process and finished products

KU13. methods to track back the record from finished product to raw material

KU14. basic computer knowledge

KU15. entering details in the ERP system followed by the organisation

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note the information communicated by the supervisor

GS2. note the raw materials used for production and the finished products produced

GS3. note the readings of the process parameters and provide necessary information to fill the process chart

GS4. note down observations (if any) related to the process

GS5. write information documents to internal departments/ internal teams

GS6. note down the data for online ERP or as per applicability in the organization

GS7. read and interpret the process required for producing various types of products

GS8. read and interpret and process flowchart for all products produced

GS9. read equipment manuals and process documents to understand the equipments operation and process requirement

GS10. read internal information documents sent by internal teams

GS11. discuss task lists, schedules and activities with the supervisor

GS12. effectively communicate with the team members

GS13. question the supervisor in order to understand the nature of the problem and to clarify queries

GS14. attentively listen and comprehend the information given by the speaker

GS15. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS16. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

GS17. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

GS18. plan and organize the work order and jobs received from the supervisor

GS19. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor

GS20. plan and prioritize the work based on the instructions received from the supervisor

GS21. plan to utilise time and equipment's effectively

GS22. organize all process/ equipment manuals so as to access information easily

GS23. support the supervisor in scheduling tasks for helper(s)

GS24. understand customer requirements and their priority and respond as per their needs

GS25. support supervisor in solving problems by detailing out problems

GS26. discuss the possible solutions with the supervisor for problem solving

GS27. apply domain information about maintenance processes and technical knowledge about tools and equipment

GS28. use common sense and make judgments on day to day basis

GS29. use reasoning skills to identify and resolve basic problems

GS30. use intuition to detect any potential problems which could arise during operations

GS31. use acquired knowledge of the process for identifying and handling issues

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Document and maintain records of raw materials (for production of squash and juice)	**15**	**10**	**-**	**-**
PC1. document and maintain record of details of raw materials and packaging materials (name of raw materials, type and variety, vendor/supplier details, season, grown area, 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	6	4	-	-
PC2. document and maintain record on observations (if any) related to raw materials and packaging materials	3	2	-	-
PC3. load the raw materials details in ERP for future reference	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	3	2	-	-
Document and maintain records of production schedule and process parameters (for production of squash and juice)	**30**	**20**	**-**	**-**
PC5. document and maintain records of production plan with details (product details, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment)	6	4	-	-
PC6. document and maintain records of process details (type or raw material used, process parameters such as temperature, time, pressure, etc. as applicable) for entire production in process chart or production log for all products produced	9	6	-	-
PC7. document and maintain records of batch size, production yield, wastage of raw materials, energy utilization and final products produced	6	4	-	-
PC8. document and maintain record of observations (if any) or deviations related to process and production	3	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. load the production plan and process details in ERP for future reference	3	2	-	-
PC10. verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits	3	2	-	-
Document and maintain records of the finished products (for production of squash and juice)	**15**	**10**	**-**	**-**
PC11. document and maintain records of the types of finished products produced	2	1	-	-
PC12. document and maintain records of the finished products details (batch number, time of packing, date of manufacture, date of expiry, other label details, primary,secondary and tertiary packaging materials, storage conditions, etc.)as per organisation standards	4	3	-	-
PC13. document and maintain record on observations or deviations (if any) related to finished products	3	2	-	-
PC14. load the finished product details in ERP for future reference	3	2	-	-
PC15. verify the documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits	3	2	-	-
NOS Total	**60**	**40**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N0104
NOS Name	Complete documentation and record keeping related to production of squash and juice
Sector	Food Processing
Sub-Sector	Fruits and Vegetables
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Clearance Date	30/09/2021

FIC/N9001: Ensure 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

Elements and Performance Criteria

Perform safety and sanitation related functions (for processing food products)

To be competent, the user/individual on the job must be able to:

PC1. comply with food safety and hygiene procedures followed in the organization

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, eye wash unit, first aid kit when required

PC7. follow housekeeping practices by having designated area for machines/tools

PC8. follow industry standards like GMP, 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 andprevent them

PC10. Identify, document and report problems such as rodents and pests to management

PC11. conduct workplace checklist audit 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)

To be competent, the user/individual on the job must be able to:

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 and allergens separately to prevent cross contamination

PC15. label raw materials and finished products and store them in different storage areas according to safe food practices

PC16. follow stock rotation based on FEFO/FIFO

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organization standards, process standards and procedures followed in the organisation

KU2. types of products produced by the organisation

KU3. code of business conduct

KU4. dress code to be followed

KU5. job responsibilities/duties and standard operating procedures

KU6. internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution

KU7. provision of wages, working hours as per organisation policy

KU8. food safety and hygiene standards followed

KU9. possible physical, chemical and biological hazards and methods of prevention of various hazards

KU10. personal hygiene requirement

KU11. different types of sanitizers used for process area, equipment and the procedure to use them

KU12. knowledge on food safety standards and regulations (as per fssai)

KU13. quality parameters and quality assessment based on physical parameters, basic food microbiology

KU14. labelling/marking requirements for raw materials, finished goods, stored materials, packaging materials and their designated storage area

KU15. cleaning and sanitation of equipment and work area

KU16. CIP and COP methods and procedures

KU17. storage norms for raw materials, packaging material and finished products

KU18. stock rotation of ingredients and finished products based on FEFO/FIFO

KU19. method of maintaining safety check lists for all machineries

KU20. GHP

KU21. GMP

KU22. HACCP

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note the information communicated by the supervisor

GS2. note the raw materials used for production and the finished products produced

GS3. note the readings of the process parameters and provide necessary information to fill the process chart

GS4. note down observations (if any) related to the process

GS5. write information documents to internal departments/ internal teams

GS6. note down the data for online ERP or as per applicability in the organization

GS7. read and interpret the process required for producing various types of products

GS8. read and interpret and process flowchart for all products produced

GS9. read equipment manuals and process documents to understand the equipment operation and process requirement

GS10. read internal information documents sent by internal teams

GS11. discuss task lists, schedules and activities with the supervisor

GS12. effectively communicate with the team members

GS13. question the supervisor in order to understand the nature of the problem and to clarify queries

GS14. attentively listen and comprehend the information given by the speaker

GS15. communicate clearly with the supervisor and cross department teams on the issues faced during process

GS16. analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

GS17. handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)

GS18. plan and organize the work order and jobs received from the supervisor

GS19. organize raw materials and packaging materials required for all products following the instruction provided by the supervisor

GS20. plan and prioritize the work based on the instructions received from the supervisor

GS21. plan to utilise time and equipment's effectively

GS22. organize all process/ equipment manuals so as to access information easily

GS23. support the supervisor in scheduling tasks for helper(s)

GS24. understand customer requirements and their priority and respond as per their needs

GS25. support supervisor in solving problems by detailing out problems

GS26. discuss the possible solutions with the supervisor for problem solving

GS27. apply domain information about maintenance processes and technical knowledge about tools and equipment

GS28. use common sense and make judgments on day to day basis

GS29. use reasoning skills to identify and resolve basic problems

GS30. use intuition to detect any potential problems which could arise during operations

GS31. use acquired knowledge of the process for identifying and handling issues

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform safety and sanitation related functions (for processing food products)	**25**	**50**	-	-
PC1. comply with food safety and hygiene procedures followed in the organization	2	3	-	-
PC2. ensure personal hygiene by use of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.	1	5	-	-
PC3. ensure hygienic production of food by inspecting raw materials, ingredients, finished products etc. for compliance to physical, chemical and microbiological parameters	2	3	-	-
PC4. pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations	4	6	-	-
PC5. clean, maintain and monitor food processing equipment periodically, using it only for the specified purpose	2	3	-	-
PC6. use safety equipment such as fire extinguisher, eye wash unit, first aid kit when required	4	6	-	-
PC7. follow housekeeping practices by having designated area for machines/tools	2	3	-	-
PC8. follow industry standards like GMP, HACCP and product recall process	4	6	-	-
PC9. attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control andprevent them	1	4	-	-
PC10. Identify, document and report problems such as rodents and pests to management	1	4	-	-
PC11. conduct workplace checklist audit before and after work to ensure safety and hygiene	1	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system	1	3	-	-
Apply food safety practices (for processing food products)	**10**	**15**	**-**	**-**
PC13. determine the quality of food using criteria such as odour, appearance, taste and best before date, and take immediate measures to prevent spoilage	2	3	-	-
PC14. store raw materials, finished products and allergens separately to prevent cross contamination	2	3	-	-
PC15. label raw materials and finished products and store them in different storage areas according to safe food practices	2	3	-	-
PC16. follow stock rotation based on FEFO/FIFO	4	6	-	-
NOS Total	**35**	**65**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9001
NOS Name	Ensure food safety, hygiene and sanitation for processing food products
Sector	Food Processing
Sub-Sector	Fruits and Vegetables
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	30/09/2021
Next Review Date	30/07/2024
Deactivation Date	30/07/2024
NSQC Clearance Date	30/09/2021

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ 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, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FIC/N0101.Prepare and maintain work area and process machineries for squash and juice processing	70	130	-	-	200	25
FIC/N0102.Prepare for production of squash and juice	35	65	-	-	100	25
FIC/N0103.Produce Squash and Juice	35	65	-	-	100	20
FIC/N0104.Complete documentation and record keeping related to production of squash and juice	60	40	-	-	100	20
FIC/N9001.Ensure food safety, hygiene and sanitation for processing food products	35	65	-	-	100	10
Total	**235**	**365**	**-**	**-**	**600**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business 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.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications 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.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation 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/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.