

National Occupational Standards

Introduction to Jam Processing & Packaging

Unit Code: FIC/N0211

Version: 1.0

NSQF Level: 3

Food Industry Capacity & Skill Initiative || Shriram Bharatiya Kala Kendra, 3rd floor, 1, Copernicus Marg, Mandi House, New Delhi
Delhi 110001 || email:santosh@ficsi.in

National Occupational Standards

Description

This OS is about processing fruits and vegetables to make jam by receiving, checking raw material quality, sorting, pulping, pasteurizing, cooking, juice extracting, clarifying, filtering, sampling for quality analysis, cooling, packaging and storing.

Scope

The scope covers the following :

- Prepare for the process
- Processing of jams
- Food safety practices

Elements and Performance Criteria

Prepare for the process

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

- PC1.** estimate manpower and material requirements as per work requirement
- PC2.** ensure required quantity of raw materials, packaging materials, equipment, and manpower for production
- PC3.** plan capacity utilization of machinery with respect to the processing time, production order, and batch size
- PC4.** inspect the tools, equipment, and machinery to ascertain suitability for use
- PC5.** organize tools and equipment before starting the process

Processing of jams

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

- PC6.** wash the fruits and vegetables using appropriate washing methods
- PC7.** transfer washed fruits and vegetables to the sorting/inspecting line
- PC8.** sort/grade fruits and vegetables according to size, quality etc.
- PC9.** feed sorted fruits and vegetables in the peeler or corer
- PC10.** transfer the fruits for pulping and Select the appropriate method and equipment for pulping based on the type of produce
- PC11.** operate the pulping equipment according to the manufacturer's instructions, ensuring consistent and efficient operation
- PC12.** check the quality of fruit pulp/ fruit juice through physical parameters such as appearance, colour, odour, etc. sample and transfer to the quality lab for analysis
- PC13.** transfer a measured quantity of fruit pulp for preparing jam
- PC14.** set temperature, pressure, stirrer speed, etc. of the cooking kettle/tank, set mixing time, cooking time, cooking temperature, etc,
- PC15.** 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

National Occupational Standards

- PC16.** check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to the quality lab for analysis and conformance to standards
- PC17.** open valves or start the pump to transfer the hot product into the packaging machine to pack jam
- PC18.** load packing materials such as glass bottles, plastic bottles, pouches, etc., and sealing materials such as lids, closures, etc. in packaging machines
- PC19.** place the packed and labelled products in cartons and transfer them to the storage area and store maintaining storage conditions following SOP

Post-production activities

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

- PC20.** clean the work area, types of machinery, equipment, and tools using approved cleaning agents and sanitizers
- PC21.** attend minor repairs/faults of all machines (if any)
- PC22.** ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or suppliers instructions/manuals
- PC23.** ensure that all equipment surfaces that come into contact with food are thoroughly cleaned and sanitized using CIP methods, with no visible residues or contamination
- PC24.** follow the prescribed CIP protocols, including the correct sequence of cleaning steps, appropriate use of cleaning agents, and adherence to specified times and temperatures

Food safety practices

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

- PC25.** follow Good Manufacturing Practices (GMP) at the workplace
- PC26.** follow Good Hygiene Practices (GHP) at the workplace appropriately
- PC27.** ensure to properly tag and number all the equipment, machinery, tools, and other processing aids to keep proper traceability of the product being manufactured and handled at the site
- PC28.** ensure the record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameter
- PC29.** follow FSSAI Schedule IV requirements related to pest Control, Cleaning, and Sanitation, Utilities, Waste Disposal, Prevention of Cross-Contamination, allergen management, corrective action, preventive actions, food operation control etc.
- PC30.** report any food safety and GMP issues to the supervisor, if any

Employability Skills

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

- PC31.** understand the significance of employability skills in meeting job requirements
- PC32.** identify constitutional values, civic rights, duties, personal values and ethics, and environmentally sustainable practices
- PC33.** explain 21st Century Skills such as Self-awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset, etc.
- PC34.** speak with others using some basic English phrases or sentences
- PC35.** follow good manners while communicating with others
- PC36.** work with others in a team
- PC37.** communicate and behave appropriately with all genders and PwD

National Occupational Standards

- PC38.** report any issues related to sexual harassment
- PC39.** use various financial products and services safely and securely
- PC40.** calculate income, expenses, savings etc.
- PC41.** approach the concerned authorities for any exploitation as per legal rights and laws
- PC42.** operate digital devices and use their features and applications securely and safely
- PC43.** Use the internet and social media platforms securely and safely
- PC44.** identify and assess opportunities for potential business
- PC45.** identify sources for arranging money and associated financial and legal challenges
- PC46.** follow appropriate hygiene and grooming standards
- PC47.** create a basic biodata
- PC48.** search for suitable jobs and apply

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** resource management process
- KU2.** procedure to estimate manpower and raw material
- KU3.** methods to inspect tools, equipment, and machinery
- KU4.** Knowledge about drinking water specifications and the relevant standards required for washing fruits and vegetables
- KU5.** standard methods used for drying fruits and vegetables after washing
- KU6.** how to carry out processes such as peeling and slicing without damaging the fruits and vegetables
- KU7.** sorting and grading the fruits and vegetables based on size, shape, color, appearance, etc.
- KU8.** inspection techniques to detect spoilages, damaged fruits and vegetables, and procedure followed to discard them appropriately
- KU9.** food laws and regulations applicable to the product packaging and labeling and the information to be printed on the packet labels
- KU10.** different types of packaging material to be used for packaging of jams
- KU11.** Different methods of jam processing
- KU12.** organizational procedure for disposal of waste material from the processing area in an environmentally safe manner
- KU13.** awareness of layout which would help to demarcate the defined movements of RM, PM, FG, and wastes generated during the processing of goods.
- KU14.** Understanding of Schedule IV of FSSAI, Good Manufacturing Practices (GMP), and Good Hygiene Practices successfully and effectively on-site
- KU15.** understand the manufacturing process, product parameters, and process control parameters such as CCPs

Generic Skills (GS)

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

National Occupational Standards

- GS1.** maintain work-related notes and records
- GS2.** read the relevant guides and literature to get the latest information about the field of work
- GS3.** communicate clearly and politely
- GS4.** perform basic calculations
- GS5.** listen attentively to understand the instructions being given
- GS6.** identify solutions to work-related issues
- GS7.** plan and prioritize tasks to ensure timely completion
- GS8.** make quick decisions in case of an emergencies

National Occupational Standards

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for the process</i>	5	10	-	4
PC1. estimate manpower and material requirements as per work requirement	-	-	-	-
PC2. ensure required quantity of raw materials, packaging materials, equipment, and manpower for production	-	-	-	-
PC3. plan capacity utilization of machinery with respect to the processing time, production order, and batch size	-	-	-	-
PC4. inspect the tools, equipment, and machinery to ascertain suitability for use	-	-	-	-
PC5. organize tools and equipment before starting the process	-	-	-	-
<i>Processing of jams</i>	10	30	-	5
PC6. wash the fruits and vegetables using appropriate washing methods	-	-	-	-
PC7. transfer washed fruits and vegetables to the sorting/inspecting line	-	-	-	-
PC8. sort/grade fruits and vegetables according to size, quality etc.	-	-	-	-
PC9. feed sorted fruits and vegetables in the peeler or corer	-	-	-	-
PC10. transfer the fruits for pulping and Select the appropriate method and equipment for pulping based on the type of produce	-	-	-	-
PC11. operate the pulping equipment according to the manufacturer's instructions, ensuring consistent and efficient operation	-	-	-	-
PC12. check the quality of fruit pulp/ fruit juice through physical parameters such as appearance, colour, odour, etc. sample and transfer to the quality lab for analysis	-	-	-	-

National Occupational Standards

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. transfer a measured quantity of fruit pulp for preparing jam	-	-	-	-
PC14. set temperature, pressure, stirrer speed, etc. of the cooking kettle/tank, set mixing time, cooking time, cooking temperature, etc,	-	-	-	-
PC15. 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	-	-	-	-
PC16. check the quality of cooked product through physical parameters such as colour, appearance, texture, taste, etc., sample and transfer to the quality lab for analysis and conformance to standards	-	-	-	-
PC17. open valves or start the pump to transfer the hot product into the packaging machine to pack jam	-	-	-	-
PC18. load packing materials such as glass bottles, plastic bottles, pouches, etc., and sealing materials such as lids, closures, etc. in packaging machines	-	-	-	-
PC19. place the packed and labelled products in cartons and transfer them to the storage area and store maintaining storage conditions following SOP	-	-	-	-
<i>Post-production activities</i>	5	10	-	2
PC20. clean the work area, types of machinery, equipment, and tools using approved cleaning agents and sanitizers	-	-	-	-
PC21. attend minor repairs/faults of all machines (if any)	-	-	-	-
PC22. ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or suppliers instructions/manuals	-	-	-	-
PC23. ensure that all equipment surfaces that come into contact with food are thoroughly cleaned and sanitized using CIP methods, with no visible residues or contamination	-	-	-	-

National Occupational Standards

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC24. follow the prescribed CIP protocols, including the correct sequence of cleaning steps, appropriate use of cleaning agents, and adherence to specified times and temperatures	-	-	-	-
<i>Food safety practices</i>	5	8	-	3
PC25. follow Good Manufacturing Practices (GMP) at the workplace	-	-	-	-
PC26. follow Good Hygiene Practices (GHP) at the workplace appropriately	-	-	-	-
PC27. ensure to properly tag and number all the equipment, machinery, tools, and other processing aids to keep proper traceability of the product being manufactured and handled at the site	-	-	-	-
PC28. ensure the record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameter	-	-	-	-
PC29. follow FSSAI Schedule IV requirements related to pest Control, Cleaning, and Sanitation, Utilities, Waste Disposal, Prevention of Cross-Contamination, allergen management, corrective action, preventive actions, food operation control etc.	-	-	-	-
PC30. report any food safety and GMP issues to the supervisor, if any	-	-	-	-
<i>Employability Skills</i>	3	-	-	-
PC31. understand the significance of employability skills in meeting job requirements	-	-	-	-
PC32. identify constitutional values, civic rights, duties, personal values and ethics, and environmentally sustainable practices	-	-	-	-
PC33. explain 21st Century Skills such as Self-awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset, etc.	-	-	-	-

National Occupational Standards

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC34. speak with others using some basic English phrases or sentences	-	-	-	-
PC35. follow good manners while communicating with others	-	-	-	-
PC36. work with others in a team	-	-	-	-
PC37. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC38. report any issues related to sexual harassment	-	-	-	-
PC39. use various financial products and services safely and securely	-	-	-	-
PC40. calculate income, expenses, savings etc.	-	-	-	-
PC41. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
PC42. operate digital devices and use their features and applications securely and safely	-	-	-	-
PC43. Use the internet and social media platforms securely and safely	-	-	-	-
PC44. identify and assess opportunities for potential business	-	-	-	-
PC45. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
PC46. follow appropriate hygiene and grooming standards	-	-	-	-
PC47. create a basic biodata	-	-	-	-
PC48. search for suitable jobs and apply	-	-	-	-
NOS Total	28	58	-	14

National Occupational Standards

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N0211
NOS Name	Introduction to Jam Processing & Packaging
Sector	Food Processing
Sub-Sector	
Occupation	Processing-Fruits and Vegetables
NSQF Level	3
Credits	3
Minimum Job Entry Age	16
Minimum Educational Qualification & Experience	10th grade pass OR 8th grade pass with 3 Years of experience of relevant experience in Food Processing Industry OR Previous relevant Qualification of NSQF Level 2.5 with 1.5 years of experience of relevant experience in in Food Processing OR Previous relevant Qualification of NSQF Level 2 with 3 Years of experience of relevant experience in Food Processing
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025
Reference code on NQR	NG-03-FI-03746-2025-V1-FICSI
NQR Version	1.0
CCN Category	1