



Fortified Rice Technician

QP Code: FIC/Q1010

Version: 1.0

NSQF Level: 4

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

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FIC/Q1010: Fortified Rice Technician

Brief Job Description

A fortified rice technician is responsible for producing fortified rice through extrusion method by operating extruder in synchronization with various tools and equipment as per the standard operating procedures of the organization to achieve uniform quality product with consistent output.

Personal Attributes

A Fortified Rice Technician must have the ability to plan, organize, prioritize the work. The individual must possess reading, writing, communication and problem-solving skills. In addition, the individual must be able to apply basic mathematical calculations, handle pressure, practice personal and professional hygiene.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [FIC/N9026: Prepare for production](#)
2. [FIC/N1036: Carry out production of fortified rice](#)
3. [FIC/N9901: Implement health and safety practices at the workplace](#)
4. [FIC/N9902: Work effectively in an organisation](#)
5. [SGJ/N1702: Optimize resource utilization at workplace](#)

Qualification Pack (QP) Parameters

Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL

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Minimum Educational Qualification & Experience	12th Class OR 10th Class with 2 Years of experience relevant experience OR 10th Class + I.T.I (1 year) with 1 Year of experience OR 10th Class + I.T.I (2 years) OR 10th Class (with 3 years of Diploma) OR 8th Class with 4 Years of experience relevant experience OR Certificate-NSQF (Level 3 Certification in relevant occupation) with 2 Years of experience relevant experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2022
Next Review Date	30/03/2025
NSQC Approval Date	31/03/2022
Version	1.0
Reference code on NQR	2022/FI/FICSI/05641
NQR Version	1.0

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FIC/N9026: Prepare for production

Description

This NOS unit is about performing various tasks prior to production in the food processing industry.

Scope

The scope covers the following :

- Plan for production
- Clean and maintain work area, machineries, and tools for production
- Organize for production

Elements and Performance Criteria

Plan for production

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

- PC1.** identify work requirements by obtaining instructions from the supervisor. Instructions: process chart, product flow chart, formulation, chart, etc.
- PC2.** plan and prioritize tasks as per work schedule. Tasks: inspect, clean, maintain, verify, etc.
- PC3.** estimate manpower and material requirements as per work requirement. Material: raw materials and packaging materials
- PC4.** ensure required quantity of raw materials, packaging materials, equipment, and manpower for production
- PC5.** plan capacity utilization of machinery with respect to the processing time, production order, and batch size for each product

Clean and maintain work area, machineries, and tools for production

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

- PC6.** clean and maintain the work area as per organizational procedures
- PC7.** clean and maintain the machines and tools and sanitize them as per the organization's specifications and standards
- PC8.** dispose of the waste material at designated place safely. Waste material: hazardous waste, food waste, packaging waste, etc.
- PC9.** inspect the tools, equipment, and machinery to ascertain suitability for use
- PC10.** report information such as faulty tools and equipment to the concerned authority

Organize for production

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

- PC11.** organize tools and equipment
- PC12.** receive and organize production materials appropriately. Production materials: raw materials, packaging materials, etc.
- PC13.** allot responsibilities/work to the assistants and helpers

Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** production planning process
- KU2.** analysis and interpretation of various process charts, product flow charts, etc.
- KU3.** resource management process
- KU4.** procedure to estimate manpower and raw material
- KU5.** capacity utilization calculation
- KU6.** organizational policies and SOP on cleanliness
- KU7.** operating procedure and general maintenance of food production machineries
- KU8.** waste management procedures
- KU9.** methods to inspect tools, equipment and machinery
- KU10.** procedure to allot work or responsibility to the team

Generic Skills (GS)

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

- GS1.** read and interpret organizational policies, SOP, production charts, etc.
- GS2.** communicate effectively with subordinates as well as supervisors
- GS3.** plan and prioritize various tasks
- GS4.** be always punctual and courteous
- GS5.** organize all process/equipment manuals to access information easily
- GS6.** discuss task lists, schedules, and activities with the senior/supervisor

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan for production</i>	11	25	-	-
PC1. identify work requirements by obtaining instructions from the supervisor. Instructions: process chart, product flow chart, formulation, chart, etc.	3	6	-	-
PC2. plan and prioritize tasks as per work schedule. Tasks: inspect, clean, maintain, verify, etc.	2	5	-	-
PC3. estimate manpower and material requirements as per work requirement. Material: raw materials and packaging materials	2	4	-	-
PC4. ensure required quantity of raw materials, packaging materials, equipment, and manpower for production	2	5	-	-
PC5. plan capacity utilization of machinery with respect to the processing time, production order, and batch size for each product	2	5	-	-
<i>Clean and maintain work area, machineries, and tools for production</i>	14	32	-	-
PC6. clean and maintain the work area as per organizational procedures	3	7	-	-
PC7. clean and maintain the machines and tools and sanitize them as per the organization's specifications and standards	3	7	-	-
PC8. dispose of the waste material at designated place safely. Waste material: hazardous waste, food waste, packaging waste, etc.	3	7	-	-
PC9. inspect the tools, equipment, and machinery to ascertain suitability for use	3	6	-	-
PC10. report information such as faulty tools and equipment to the concerned authority	2	5	-	-
<i>Organize for production</i>	5	13	-	-
PC11. organize tools and equipment	2	7	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. receive and organize production materials appropriately. Production materials: raw materials, packaging materials, etc.	2	4	-	-
PC13. allot responsibilities/work to the assistants and helpers	1	2	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9026
NOS Name	Prepare for production
Sector	Food Processing
Sub-Sector	Generic
Occupation	Production
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

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FIC/N1036: Carry out production of fortified rice

Description

This unit is about producing fortified rice kernels by the method of extrusion and then blending it by using different machineries to produce fortified rice as per the specifications and standards of the organization.

Scope

The scope covers the following :

- Prepare for selection of raw materials
- Perform production of fortified rice kernels
- Perform production of blended fortified rice
- Monitor losses during extrusion
- Ensure proper storage and packaging of fortified rice

Elements and Performance Criteria

Prepare for selection of raw materials

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

- PC1.** • identify food grade vitamin and mineral premix
• premix: Vitamin B12, Iron, folic acid
- PC2.** procure broken rice after rice milling to prepare for fortification process by checking the specification limit
- PC3.** • ensure the obtained rice meets the parameters as per standards of normal rice
• parameters: strong to sustain shelf life, cooking quality, etc.
- PC4.** pass the broken rice through a vibro separator to check the presence of foreign material as well as through magnets to assure absence of any magnetic particles
- PC5.** discard the raw material which does not meet the standards
- PC6.** ensure the obtained premix meets the standards set by FSSAI
- PC7.** • arrange and store the ingredients properly in a designated area
• ingredients: Rice, food grade vitamin and mineral premix, FSSAI approved acid regulators and emulsifiers, potable water
- PC8.** follow the flowchart prepared by the organization to carry out the production process

Perform production of fortified rice kernels

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

- PC9.** transfer the approved broken rice into a pulverizer to grind it further to a desired size
- PC10.** • sieve the broken rice to check the standard particle size and removal of foreign particles
• standard particle size: 150 µm
- PC11.** ensure the moisture content of broken rice before the mixing process should be in a range 11-12%
- PC12.** mix the vitamin and mineral premix with the broken rice in a flour mixer layer by layer
- PC13.** transfer the mixture into a preconditioner to add steam into the mixture for partial gelatinization of starch

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- PC14.** transfer the mixture into a feeding hopper with a screw conveyor or manually to incorporate water in it
- PC15.** monitor the temperature and moisture content of the mixture in the hopper with a temperature moisture detector gun
- PC16.** transfer the moist fortified flour into a twin screw extruder for partial cooking and extruding rice shaped kernels
- PC17.** ensure the main, feeding and cutting motor works properly in maintaining the shape and size of the kernels
- PC18.**
- monitor the extrusion parameters to achieve consistency throughout the process
 - parameters: Feed rate, temperature and rotation speed of motor
- PC19.** measure the length, thickness and width of the extruded kernel to match the specification
- PC20.** cool the extruded kernels to remove moisture and temperature in a vibratory pan conveyor
- PC21.** transfer the extruded fortified kernels into five layered dryer through a pneumatic line or manually to reduce the moisture content of fortified rice kernels to 11-12%
- PC22.** maintain the temperature parameter of the vibratory dryer
- PC23.** transfer the fortified rice kernels from the dryer into a vibro separator to check and remove any clumps and extraneous matter
- PC24.** pass the kernels through a permanent bar magnet to check the presence of metal in fortified rice kernels
- PC25.** send the sample to quality lab for analysis analysis: moisture, nutritional content, (vitamin and mineral in premix) kernel size, colour etc.

Perform production of blended fortified rice

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

- PC26.** fill one hopper with fortified rice kernel and other with normal rice for batch blending
- PC27.** ensure the dosing system feeds the fortified rice kernel to normal rice in a designated ratio or as required to meet the fortified rice specification
- PC28.** set the combination of dosing parameters of a vibratory feeder in a continuous blending process
- PC29.** ensure the helical ribbon blender blends the mixture to produce homogenous fortified rice
- PC30.** ensure the steps of blending are performed just prior to packaging the fortified rice
- PC31.**
- send the sample of finished product to quality lab to check quality parameters
 - parameters: moisture content, texture, broken kernels, organoleptic quality, pesticide residue, etc.

Monitor losses during extrusion

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

- PC32.**
- monitor the process loss by controlling the factors affecting stability during the fortification process
 - process loss: applied heat, humidity during heating, drying steps, presence, or absence of air
- PC33.** monitor the stability of fortified rice during storage by using antioxidant for stabilization of vitamin A
- PC34.** ensure the mixture is properly blended during mixing to avoid washing loss
- PC35.** monitor the loss of water-soluble vitamins during cooking process by using FSSAI approved emulsifiers

Ensure proper storage and packaging of fortified rice

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

- PC36.** dispose the rejected batch safely following the standard practice of the organization
- PC37.** pack the fortified rice in two-layer bag with inner layer of poly lining or equivalent packaging material
- PC38.** ensure the packed bag passes the butt drop and flat drop test
- PC39.** perform shelf-life study of fortified rice to maintain its shelf stability
- PC40.** report any non-conformity in the process to the higher authority
- PC41.**
 - ensure the mandatory information are printed on the label of the bag
 - Information: Name, Net weight, name of supplier, production date, list of ingredients in descending order, country of origin, lot identification, storage instructions, '+F' logo, etc.
- PC42.** store the fortified rice under dry, ventilated, and hygienic conditions for further transportation
- PC43.** store the tools, equipment and materials used for production safely in designated places
- PC44.** maintain the tools, equipment and materials used for production as per standard practices

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** policies and procedures related to fortified rice production
- KU2.** types of vitamin and mineral premix
- KU3.** tasks to be performed and processes involved in fortification production
- KU4.** types of tools, equipment and machinery used in fortified rice production
- KU5.** method to measure parameters like antioxidants, emulsifiers, premix, etc.
- KU6.** various signs of damaged kernels and their inspection techniques
- KU7.** technique for performing hot or cold extrusion
- KU8.** process of blending and different types of blending
- KU9.** importance of preconditioning of kernels
- KU10.** different types of fortification like dusting and coating
- KU11.** instruments used for monitoring temperature and moisture content of rice
- KU12.** process of checking the dosing system
- KU13.** types of dryer and their parameters
- KU14.** optimal conditions required for drying the fortified kernels
- KU15.** different tests performed to check the quality
- KU16.** different losses during production and how to overcome them
- KU17.** procedure for storing, packing and labelling the fortified rice and the materials used in the process
- KU18.** instances that need to be reported to the concerned personnel and the methods used
- KU19.** types of information that is documented and the organisational practices for documenting them
- KU20.** Food Safety and Standards Authority of India (FSSAI) guidelines for production, packaging, labelling, storing, handling fortified rice and raw material

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- KU21.** procedure to store the tools, equipment and materials used for production safely
- KU22.** procedure to maintain the tools, equipment and materials used for fortified rice production
- KU23.** how to coordinate with vendors for vitamin and mineral premix transportation and delivery
- KU24.** which matter to be reported to the higher authority and when
- KU25.** safe disposal of waste and unwanted materials at the workplace
- KU26.** SOP to record the information (such as type of FRK produced, its characteristics, batches produced, quantity to be dispatched, etc.) as required in the job

Generic Skills (GS)

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

- GS1.** note the raw materials used for production and the finished products produced
- GS2.** note the readings of the process parameters and necessary information to fill the process chart
- GS3.** note down observations (if any) related to the process
- GS4.** write information documents to internal departments/ internal teams
- GS5.** note down the data for ERP or as required by the organization
- GS6.** read and interpret the process required for producing various types of products
- GS7.** read and interpret and process flowcharts for all products produced
- GS8.** read equipment manuals and process documents to understand the equipment operations
- GS9.** read internal information documents sent by internal teams
- GS10.** discuss task lists, schedules, and activities with the higher authority
- GS11.** effectively communicate with the team members
- GS12.** question the higher authority to understand the nature of the problem and to clarify
- GS13.** note down the information gathered from the higher authority
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the internal team and cross-department team on the issues
- GS16.** plan and organize the work order and jobs received from the higher authority
- GS17.** organize raw materials and packaging materials required for making fortified rice
- GS18.** plan and prioritize work based on the instructions received from the higher authority
- GS19.** plan to utilize time and equipment effectively
- GS20.** organize all process / equipment manuals to access information easily
- GS21.** support higher authority in solving problems by detailing out problems
- GS22.** discuss the possible solutions with the higher authority for problem-solving
- GS23.** apply information about maintenance processes & knowledge about tools
- GS24.** use common sense and make judgments on a day-to-day basis
- GS25.** use reasoning skills to identify and resolve basic problems
- GS26.** use intuition to detect any potential problems which could arise during operations
- GS27.** use acquired knowledge of the process for identifying and handling issues
- GS28.** Identify critical points in daily tasks and apply control measures to solve the issue



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GS29. support the higher authority in scheduling tasks for helper(s)

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for selection of raw materials</i>	5	10	-	5
PC1. • identify food grade vitamin and mineral premix • premix: Vitamin B12, Iron, folic acid	-	-	-	-
PC2. procure broken rice after rice milling to prepare for fortification process by checking the specification limit	-	-	-	-
PC3. • ensure the obtained rice meets the parameters as per standards of normal rice • parameters: strong to sustain shelf life, cooking quality, etc.	-	-	-	-
PC4. pass the broken rice through a vibro separator to check the presence of foreign material as well as through magnets to assure absence of any magnetic particles	-	-	-	-
PC5. discard the raw material which does not meet the standards	-	-	-	-
PC6. ensure the obtained premix meets the standards set by FSSAI	-	-	-	-
PC7. • arrange and store the ingredients properly in a designated area • ingredients: Rice, food grade vitamin and mineral premix, FSSAI approved acid regulators and emulsifiers, potable water	-	-	-	-
PC8. follow the flowchart prepared by the organization to carry out the production process	-	-	-	-
<i>Perform production of fortified rice kernels</i>	10	20	-	5
PC9. transfer the approved broken rice into a pulverizer to grind it further to a desired size	-	-	-	-
PC10. • sieve the broken rice to check the standard particle size and removal of foreign particles • standard particle size: 150 µm	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. ensure the moisture content of broken rice before the mixing process should be in a range 11-12%	-	-	-	-
PC12. mix the vitamin and mineral premix with the broken rice in a flour mixer layer by layer	-	-	-	-
PC13. transfer the mixture into a preconditioner to add steam into the mixture for partial gelatinization of starch	-	-	-	-
PC14. transfer the mixture into a feeding hopper with a screw conveyor or manually to incorporate water in it	-	-	-	-
PC15. monitor the temperature and moisture content of the mixture in the hopper with a temperature moisture detector gun	-	-	-	-
PC16. transfer the moist fortified flour into a twin screw extruder for partial cooking and extruding rice shaped kernels	-	-	-	-
PC17. ensure the main, feeding and cutting motor works properly in maintaining the shape and size of the kernels	-	-	-	-
PC18. <ul style="list-style-type: none"> • monitor the extrusion parameters to achieve consistency throughout the process • parameters: Feed rate, temperature and rotation speed of motor 	-	-	-	-
PC19. measure the length, thickness and width of the extruded kernel to match the specification	-	-	-	-
PC20. cool the extruded kernels to remove moisture and temperature in a vibratory pan conveyor	-	-	-	-
PC21. transfer the extruded fortified kernels into five layered dryer through a pneumatic line or manually to reduce the moisture content of fortified rice kernels to 11-12%	-	-	-	-
PC22. maintain the temperature parameter of the vibratory dryer	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. transfer the fortified rice kernels from the dryer into a vibro separator to check and remove any clumps and extraneous matter	-	-	-	-
PC24. pass the kernels through a permanent bar magnet to check the presence of metal in fortified rice kernels	-	-	-	-
PC25. send the sample to quality lab for analysis analysis: moisture, nutritional content, (vitamin and mineral in premix) kernel size, colour etc.	-	-	-	-
<i>Perform production of blended fortified rice</i>	5	5	-	-
PC26. fill one hopper with fortified rice kernel and other with normal rice for batch blending	-	-	-	-
PC27. ensure the dosing system feeds the fortified rice kernel to normal rice in a designated ratio or as required to meet the fortified rice specification	-	-	-	-
PC28. set the combination of dosing parameters of a vibratory feeder in a continuous blending process	-	-	-	-
PC29. ensure the helical ribbon blender blends the mixture to produce homogenous fortified rice	-	-	-	-
PC30. ensure the steps of blending are performed just prior to packaging the fortified rice	-	-	-	-
PC31. <ul style="list-style-type: none"> send the sample of finished product to quality lab to check quality parameters parameters: moisture content, texture, broken kernels, organoleptic quality, pesticide residue, etc. 	-	-	-	-
<i>Monitor losses during extrusion</i>	5	5	-	5
PC32. <ul style="list-style-type: none"> monitor the process loss by controlling the factors affecting stability during the fortification process process loss: applied heat, humidity during heating, drying steps, presence, or absence of air 	-	-	-	-
PC33. monitor the stability of fortified rice during storage by using antioxidant for stabilization of vitamin A	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC34. ensure the mixture is properly blended during mixing to avoid washing loss	-	-	-	-
PC35. monitor the loss of water-soluble vitamins during cooking process by using FSSAI approved emulsifiers	-	-	-	-
<i>Ensure proper storage and packaging of fortified rice</i>	5	10	-	5
PC36. dispose the rejected batch safely following the standard practice of the organization	-	-	-	-
PC37. pack the fortified rice in two-layer bag with inner layer of poly lining or equivalent packaging material	-	-	-	-
PC38. ensure the packed bag passes the butt drop and flat drop test	-	-	-	-
PC39. perform shelf-life study of fortified rice to maintain its shelf stability	-	-	-	-
PC40. report any non-conformity in the process to the higher authority	-	-	-	-
PC41. <ul style="list-style-type: none"> ensure the mandatory information are printed on the label of the bag Information: Name, Net weight, name of supplier, production date, list of ingredients in descending order, country of origin, lot identification, storage instructions, '+F' logo, etc. 	-	-	-	-
PC42. store the fortified rice under dry, ventilated, and hygienic conditions for further transportation	-	-	-	-
PC43. store the tools, equipment and materials used for production safely in designated places	-	-	-	-
PC44. maintain the tools, equipment and materials used for production as per standard practices	-	-	-	-
NOS Total	30	50	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	FIC/N1036
NOS Name	Carry out production of fortified rice
Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2022
Next Review Date	30/03/2025
NSQC Clearance Date	31/03/2022

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FIC/N9901: Implement health and safety practices at the workplace

Description

This unit is about following health and safety procedures at the workplace.

Scope

The scope covers the following :

- Ensure food safety and personal hygiene
- Follow safety measures to avoid accidents
- Follow emergency procedures
- Manage infection control

Elements and Performance Criteria

Ensure food safety and personal hygiene

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

- PC1.** follow relevant practices to avoid cross contamination at all stages of food processing operations
- PC2.** follow organisational procedures for handling items that may cause allergic reactions
- PC3.** follow Good Manufacturing Practices (GMP) at the workplace. Good Manufacturing Practices: location and layout (ergonomics), cleaning and sanitation, equipment and containers, pest control, facilities (lighting, water supply, drainage and waste disposal, air quality and ventilation), food storage, transportation, and distribution (Source: Schedule IV, FSSAI Licensing and Registration, 2011)
- PC4.** follow Good Hygiene Practices (GHP) at the workplace appropriately. Good Hygiene Practices: use of gloves, hairnets, masks, ear plugs, goggles, shoes etc; washing hands regularly; treating injuries such as cuts, boils, skin infections and grazes; preventive health check-ups ; getting vaccinated whenever required. (Source: Schedule IV, FSSAI Licensing and Registration, 2011)

Follow safety measures to avoid accidents

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

- PC5.** use protective clothing/equipment for specific tasks and work conditions
- PC6.** identify job-site hazardous work and possible causes of risk or accident at the workplace
- PC7.** deal with hazards safely and appropriately to ensure safety of self and others as per organisational protocol
- PC8.** use various types of fire extinguishers effectively
- PC9.** respond promptly and appropriately to an accident situation or medical emergency
- PC10.** provide cardio-pulmonary resuscitation (CPR) as per the requirement (e.g. cardiac arrest)

Follow emergency procedures

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

- PC11.** follow workplace emergency and evacuation procedures
- PC12.** use safe methods to free a person from electrocution

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PC13. administer appropriate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc.

Manage infection control

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

PC14. use appropriate disinfectants to disinfect the work area and equipment as per organisational protocol

PC15. ensure personal hygiene by washing hands regularly using alcohol based sanitisers and wearing personal protective equipment (PPE)

PC16. report illness of self and others to the supervisor or concerned authority

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. meaning of hazards and risks

KU2. possible causes of risk, hazard or accident in the workplace

KU3. where to find all the general health and safety equipment in the workplace

KU4. health and safety policy and procedures of the organization

KU5. health and safety hazards commonly present in the work environment

KU6. work practices and precautions used to control and prevent risks, hazards and accidents

KU7. applicable standards and regulations as listed in The Food Safety and Standards Act, 2006

KU8. importance of each personal protective equipment used such as eye protection, hard hats, gloves apron, rubber boots, etc.

KU9. importance of ensuring personal hygiene at the workplace

KU10. ways to prevent cross contamination at the workplace

KU11. importance of storing food at specified temperatures

KU12. various dangers associated with the use of electrical and other equipment

KU13. preventive and remedial actions to be taken in the case of exposure to toxic materials

KU14. various causes of fire and the ways to prevent them

KU15. techniques of using the different fire extinguishers

KU16. procedure followed for providing cardio-pulmonary resuscitation (CPR) to the affected

KU17. rescue techniques applied during a fire hazard

KU18. various types of safety signs and what they mean

KU19. workplace emergency and evacuation procedures

KU20. appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries

KU21. potential injuries and ill health conditions associated with incorrect manual handling

KU22. safe lifting and carrying practices

KU23. safe practices to be followed for ensuring sanitisation of self and work area

KU24. procedure for storing the sanitising materials appropriately

Generic Skills (GS)

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

- GS1.** write an accident/incident report in local language or English
- GS2.** read and comprehend basic content to read labels, charts, signages, symbols and product manuals
- GS3.** communicate with coworkers appropriately in order to clarify instructions and other issues
- GS4.** make appropriate decisions pertaining to the concerned area of work regarding the work objective, span of authority, responsibility, laid down procedure and guidelines
- GS5.** plan and organize the work schedule, work area, tools, equipment and materials for improved productivity
- GS6.** identify probable solutions to the problems in hand and evaluate them
- GS7.** seek official and authorised sources of help and guidance to resolve problems that cannot be solved at one's level of authority

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure food safety and personal hygiene</i>	7	19	-	-
PC1. follow relevant practices to avoid cross contamination at all stages of food processing operations	1	4	-	-
PC2. follow organisational procedures for handling items that may cause allergic reactions	1	4	-	-
PC3. follow Good Manufacturing Practices (GMP) at the workplace. Good Manufacturing Practices: location and layout (ergonomics), cleaning and sanitation, equipment and containers, pest control, facilities (lighting, water supply, drainage and waste disposal, air quality and ventilation), food storage, transportation, and distribution (Source: Schedule IV, FSSAI Licensing and Registration, 2011)	3	7	-	-
PC4. follow Good Hygiene Practices (GHP) at the workplace appropriately. Good Hygiene Practices: use of gloves, hairnets, masks, ear plugs, goggles, shoes etc; washing hands regularly; treating injuries such as cuts, boils, skin infections and grazes; preventive health check-ups ; getting vaccinated whenever required. (Source: Schedule IV, FSSAI Licensing and Registration, 2011)	2	4	-	-
<i>Follow safety measures to avoid accidents</i>	11	24	-	-
PC5. use protective clothing/equipment for specific tasks and work conditions	2	4	-	-
PC6. identify job-site hazardous work and possible causes of risk or accident at the workplace	2	4	-	-
PC7. deal with hazards safely and appropriately to ensure safety of self and others as per organisational protocol	2	4	-	-
PC8. use various types of fire extinguishers effectively	2	4	-	-
PC9. respond promptly and appropriately to an accident situation or medical emergency	1	4	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. provide cardio-pulmonary resuscitation (CPR) as per the requirement (e.g. cardiac arrest)	2	4	-	-
<i>Follow emergency procedures</i>	6	12	-	-
PC11. follow workplace emergency and evacuation procedures	2	4	-	-
PC12. use safe methods to free a person from electrocution	2	4	-	-
PC13. administer appropriate first aid to victims in case of cuts, bleeding, burns, choking, electric shock, poisoning etc.	2	4	-	-
<i>Manage infection control</i>	6	15	-	-
PC14. use appropriate disinfectants to disinfect the work area and equipment as per organisational protocol	3	7	-	-
PC15. ensure personal hygiene by washing hands regularly using alcohol based sanitisers and wearing personal protective equipment (PPE)	1	4	-	-
PC16. report illness of self and others to the supervisor or concerned authority	2	4	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9901
NOS Name	Implement health and safety practices at the workplace
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

FIC/N9902: Work effectively in an organisation

Description

This unit is about working effectively with others.

Scope

The scope covers the following :

- Communicate effectively
- Work in a team effectively
- Respect diversity

Elements and Performance Criteria

Communicate effectively

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

- PC1.** obtain complete information and instructions from designated personnel
- PC2.** reciprocate understanding and seek clarifications whenever required
- PC3.** provide information accurately and clearly
- PC4.** use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive

Work in a team effectively

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

- PC5.** plan tasks to be performed as per priority and need
- PC6.** consult with and assist others to maximize effectiveness and efficiency at work
- PC7.** escalate problems and grievances beyond own scope to the concerned authority
- PC8.** take appropriate action to resolve conflicts at the workplace

Respect diversity

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

- PC9.** maintain a gender-neutral behaviour with everyone at the workplace
- PC10.** empathise with People with Disabilities (PwD) and offer help, if required
- PC11.** recognise and report incidents of harassment and discrimination to appropriate authority

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organizational quality procedures and processes associated with work
- KU2.** standards, policies, and procedures followed in the organization relevant to employment, harassment, discrimination and performance conditions
- KU3.** reporting structure, inter-dependent functions, lines, and procedures applicable at the workplace

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- KU4.** different types of harassment and discrimination based on gender, disability, caste, religion, and culture
- KU5.** components of effective communication and its importance
- KU6.** importance of teamwork in organizational and individual success
- KU7.** importance of ethics and discipline for professional success
- KU8.** how to express and address grievances appropriately and effectively
- KU9.** importance and ways of managing interpersonal conflict effectively
- KU10.** different types of disabilities and the challenges faced by persons with disability (PwD)
- KU11.** laws, acts and provisions defined for PwD
- KU12.** importance of gender sensitivity and equality
- KU13.** legislations, grievance redressal mechanisms, and penalties against harassment in the workplace

Generic Skills (GS)

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

- GS1.** communicate information, doubts and concerns about work related matters in local language or Hindi/English
- GS2.** read and interpret information given in local language or Hindi/English
- GS3.** establish priorities and deadlines in consultation with other and record them
- GS4.** be punctual
- GS5.** listen to others concerns and doubts carefully and address them
- GS6.** be courteous

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively</i>	8	13	-	-
PC1. obtain complete information and instructions from designated personnel	2	3	-	-
PC2. reciprocate understanding and seek clarifications whenever required	2	3	-	-
PC3. provide information accurately and clearly	2	3	-	-
PC4. use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive	2	4	-	-
<i>Work in a team effectively</i>	8	14	-	-
PC5. plan tasks to be performed as per priority and need	2	4	-	-
PC6. consult with and assist others to maximize effectiveness and efficiency at work	2	3	-	-
PC7. escalate problems and grievances beyond own scope to the concerned authority	2	3	-	-
PC8. take appropriate action to resolve conflicts at the workplace	2	4	-	-
<i>Respect diversity</i>	6	12	-	-
PC9. maintain a gender-neutral behaviour with everyone at the workplace	2	4	-	-
PC10. empathise with People with Disabilities (PwD) and offer help, if required	2	4	-	-
PC11. recognise and report incidents of harassment and discrimination to appropriate authority	2	4	-	-
NOS Total	22	39	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9902
NOS Name	Work effectively in an organisation
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Qualification Pack

SGJ/N1702: Optimize resource utilization at workplace

Description

This unit is about adopting sustainable practices and optimizing use of resources, especially material, energy and waste, in day-to-day operations at work

Scope

The scope covers the following :

- Material conservation practices
- Energy/electricity conservation practices
- Effective waste management/recycling practices

Elements and Performance Criteria

Material conservation practices

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

- PC1.** identify ways to optimize usage of material including water in various tasks/activities/processes
- PC2.** check for spills/leakages in various tasks/activities/processes
- PC3.** plug spills/leakages and escalate to appropriate authority if unable to rectify
- PC4.** carry out routine cleaning of tools, machines and equipment

Energy/electricity conservation practices

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

- PC5.** identify ways to optimize usage of electricity/energy in various tasks/activities/processes
- PC6.** check if the equipment/machine is functioning normally before commencing work and rectify wherever required
- PC7.** report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment
- PC8.** ensure electrical equipment and appliances are properly connected and turned off when not in use

Effective waste management/recycling practices

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

- PC9.** identify recyclable and non-recyclable, and hazardous waste generated
- PC10.** segregate waste into different categories
- PC11.** dispose non-recyclable waste appropriately
- PC12.** deposit recyclable and reusable material at identified location
- PC13.** follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** potential hazards, risks and threats based on the nature of work
- KU2.** layout of the workstation and electrical and thermal equipment used
- KU3.** organizations procedures for minimizing waste
- KU4.** efficient and inefficient utilization of material and water
- KU5.** ways of efficiently managing material and water in the process
- KU6.** basics of electricity and prevalent energy efficient devices
- KU7.** ways to recognize common electrical problems
- KU8.** common practices of conserving electricity
- KU9.** usage of different colours of dustbins
- KU10.** categorization of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU11.** waste management and methods of waste disposal
- KU12.** common sources of pollution and ways to minimize it

Generic Skills (GS)

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

- GS1.** record data on waste disposal at workplace
- GS2.** complete statutory documents relevant to safety and hygiene
- GS3.** read Standard Operating Practices (SOP) documents
- GS4.** communicate with colleagues on the significance of greening of jobs
- GS5.** make timely decisions for efficient utilization of resources
- GS6.** complete tasks efficiently and accurately within stipulated time
- GS7.** work with supervisors/team members to carry out work related tasks
- GS8.** identify cause and effect of greening of jobs

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Material conservation practices</i>	4	8	-	-
PC1. identify ways to optimize usage of material including water in various tasks/activities/processes	1	2	-	-
PC2. check for spills/leakages in various tasks/activities/processes	1	2	-	-
PC3. plug spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	-
PC4. carry out routine cleaning of tools, machines and equipment	1	2	-	-
<i>Energy/electricity conservation practices</i>	4	8	-	-
PC5. identify ways to optimize usage of electricity/energy in various tasks/activities/processes	1	2	-	-
PC6. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
PC7. report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment	1	2	-	-
PC8. ensure electrical equipment and appliances are properly connected and turned off when not in use	1	2	-	-
<i>Effective waste management/recycling practices</i>	5	10	-	-
PC9. identify recyclable and non-recyclable, and hazardous waste generated	1	2	-	-
PC10. segregate waste into different categories	1	2	-	-
PC11. dispose non-recyclable waste appropriately	1	2	-	-
PC12. deposit recyclable and reusable material at identified location	1	2	-	-
PC13. follow processes specified for disposal of hazardous waste	1	2	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	13	26	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N1702
NOS Name	Optimize resource utilization at workplace
Sector	Green Jobs
Sub-Sector	Other Green Jobs
Occupation	Resource Optimization
NSQF Level	3
Credits	TBD
Version	1.0
Last Reviewed Date	28/04/2022
Next Review Date	28/04/2025
NSQC Clearance Date	28/04/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

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, 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 this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

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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/N9026.Prepare for production	30	70	-	-	100	30
FIC/N1036.Carry out production of fortified rice	30	50	-	20	100	45
FIC/N9901.Implement health and safety practices at the workplace	30	70	-	-	100	10
FIC/N9902.Work effectively in an organisation	22	39	-	-	61	10
SGJ/N1702.Optimize resource utilization at workplace	13	26	-	-	39	5
Total	125	255	-	20	400	100

Qualification Pack

Acronyms

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

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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.

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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.