Qualification Pack

Grain Miller

Electives: Milling of rice/ Milling of pulses

QP Code: FIC/Q1003

Version: 4.0

NSQF Level: 3

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Qualification Pack

FIC/Q1003: Grain Miller

Brief Job Description

A Grain Miller is responsible for operating and maintaining milling equipment used for processing wheat, pulses, or cereals under supervision. This includes tasks such as setting up machinery, adjusting controls for optimal milling, and conducting routine inspections to ensure product quality and consistency. The role also involves post-production cleaning, basic maintenance, and adhering to food safety and hygiene standards to ensure efficient and safe operations.

Personal Attributes

The individual should have attention-to-detail, problem-solving and coordination skills. The person should be physically fit to work for long durations. Safety awareness and appropriate verbal and written communication skills are the other important requirements for the job role.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. FIC/N9026: Prepare for production
2. FIC/N1005: Carry out wheat milling
3. FIC/N1007: Maintain the work area and grain mill
4. FIC/N9906: Apply food safety guidelines in Food Processing
5. DGT/VSQ/N0101: Employability Skills (30 Hours)

Electives*(mandatory to select at least one):*

Elective 1: Milling of rice

This NOS is about milling rice by following applicable processes and using different types of machinery

1. FIC/N1028: Carry out milling of rice

Elective 2: Milling of pulses

This NOS is about milling pulses by following applicable processes and using different types of machinery.

1. FIC/N1027: Carry out milling of pulses

Qualification Pack

Qualification Pack (QP) Parameters

Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
Country	India
NSQF Level	3
Credits	16
Aligned to NCO/ISCO/ISIC Code	NCO-2015/8160.1000
Minimum Educational Qualification & Experience	10th grade pass (or equivalent) OR 8th grade pass with 3 Years of experience in food processing OR Previous relevant Qualification of NSQF Level 2 with 3 Years of experience in food processing OR Previous relevant Qualification of NSQF Level 2.5 with 1.5 years of experience in food processing
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	NA
Next Review Date	22/10/2027
NSQC Approval Date	22/10/2024
Version	4.0
Reference code on NQR	QG-03-FI-03331-2024-V4-FICSI
NQR Version	4.0

Remarks:

Nil

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)

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

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan for production	**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	-	-
Clean and maintain work area, machineries, and tools for production	**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	-	-
Organize for production	**5**	**13**	**-**	**-**
PC11. organize tools and equipment	2	7	-	-

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**	**-**	**-**

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	08/05/2025
Next Review Date	08/05/2028
NSQC Clearance Date	08/05/2025

FIC/N1005: Carry out wheat milling

Description

This unit covers the milling process of wheat, including pre-processing, milling, and post-production cleaning and equipment maintenance

Scope

The scope covers the following :

- Set up and calibrate the equipment
- Carry out pre-processing of wheat
- Carry out wheat processing
- Carry out post-processing activities

Elements and Performance Criteria

Set up and calibrate the equipment

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

PC1. ensure all equipment is clean, free from infestation, and functioning properly

PC2. calibrate automatic measuring scales with standard weights and measures

PC3. examine the screens/sieves for damage

PC4. set up screens/sieves for cleaning, grading, and sieving machines (rotary screen cleaners, graders, plan sifters, etc

PC5. check the cleaning and effectiveness of magnets, ensuring proper calibration of metal detectors according to manufacturer's instructions

PC6. adjust and control the speed of screw or chain conveyors and motors to maintain wheat flow rate

PC7. check bucket elevators, chain conveyors, and screw conveyors for the appropriate condition, ensuring no damage

PC8. carry out lubrication of moving equipment parts using the recommended lubricants

PC9. check all sensors are in working condition to maintain the flow rate

PC10. set controls of blowers or suction fans to remove light impurities and dust particles from screens and sieves

PC11. ensure no leakage in blowers or suction fans

Carry out pre-processing of wheat

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

PC12. clean the received wheat using a winnowing machine to remove impurities like chaff, soil, and dirt

PC13. grade the wheat as per the desired size

PC14. inspect the fumigated wheat for the presence of any live infestation and take appropriate corrective measures

PC15. collect in-process samples and transfer them to the quality lab for testing

Carry out wheat processing

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

PC16. remove stones from the wheat using the de-stoner machine to prepare them for washing

PC17. set appropriate controls for water bath and conditioner time for soaking, conditioning, and tempering of wheat for further processing

PC18. monitor water level, temperature, inflow, and outflow rate during washing

PC19. dry wheat under the sun or using appropriate drying equipment, such as continuous flow dryer, batch dryer, solar dryer, etc

PC20. adjust the temperature, pressure, and speed of the dryer to maintain the required moisture content in the wheat

PC21. regulate the amount of grain conveyed into the dryer (parboiled grain) by adjusting the dryer valves

PC22. remove husks by adjusting roller speed, clearance, and emery size, as required

PC23. separate the de-husked wheat by setting the appropriate aspirator fan speed

PC24. cool the grain and blow off the bran at the recommended air pressure

PC25. grade the processed grain based on the applicable parameters by using the graders

PC26. remove the broken wheat by using the sifter at the recommended vibration speed

PC27. remove the hull from the grain using the decorticator/de-husker, as required

Carry out post-processing activities

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

PC28. collect samples of the processed grain and coordinate their quality analysis with the quality-testing lab for analysis

PC29. follow the Legal Metrology Act, 2009 for establishing weights and measures as per standards

PC30. select appropriate packaging materials as per the organizational standards to pack the milled grain

PC31. pack the milled grain using the appropriate packing machinery

PC32. carry out labelling of the processed grain packs with the necessary information as per the applicable FSSAI regulations

PC33. check the weight of the packed/bagged product to ensure conformance to the applicable standards

PC34. store the packed under the recommended temperature and humidity in a hygienic storage

PC35. maintain appropriate records concerning the grain milling operations and post-production activities, e.g. raw material records, production records, quality check records, etc

PC36. clean the work area, machinery, and tools using industry-approved cleaning procedures (e.g., dismantling, pressurized air cleaning

PC37. follow the Clean-in-Place (CIP) and Clean-out-of-Place (COP) procedures

PC38. carry out basic repair and maintenance of equipment to prevent equipment breakdown and malfunctions

PC39. follow the maintenance schedule and procedure for the tools, equipment and machinery prescribed by the Original Equipment Manufacturer (OEM)

PC40. coordinate with the OEM for complex equipment repair and maintenance needs

PC41. collect and dispose of the waste generated during grain milling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. different types of equipment used in milling, such as blowers, separators, screw conveyors, bucket elevators, and their working principles

KU2. the calibration procedures for automatic measuring scales, screens, sieves, and standard weights and measures

KU3. the types of screens and sieves used in milling machines and their application for cleaning and grading

KU4. the functionality and calibration of magnets and metal detectors

KU5. the methods to inspect and maintain the condition of conveyors, elevators, and sieves to ensure smooth operation

KU6. the proper lubrication techniques for moving equipment parts, and appropriate frequency of lubrication

KU7. the techniques for adjusting and controlling the speed of conveyors and motors to maintain wheat flow rate

KU8. the role and functionality of sensors in wheat milling operations for controlling flow rates

KU9. how to adjust blowers or suction fans to remove impurities, dust, and light materials from wheat

KU10. the processes of using winnowing machines, blowers, and separators to remove impurities like chaff, soil, and stones from wheat

KU11. the wheat grading techniques and the importance of wheat size for processing

KU12. the importance of inspecting fumigated wheat for infestation and corrective actions in case of live infestations

KU13. the sampling procedures and in-process testing of wheat for quality checks in accordance with SOPs

KU14. the types of contaminants and food safety hazards associated with the wheat cleaning process and control measures to prevent contamination

KU15. the stone removal processes using de-stoner machines and how to set them up for efficient stone removal

KU16. the techniques for soaking, conditioning, and tempering of wheat, including the role of water baths, temperature control, and conditioning duration

KU17. the methods to monitor and adjust water level, inflow, outflow rate, and temperature during wheat washing

KU18. the operation of dryers, including temperature, pressure, and speed settings to maintain required moisture levels in wheat

KU19. the parboiling procedures and how to adjust dryer valves for controlling the flow of parboiled wheat

KU20. the methods to remove husks from wheat by adjusting roller speed, clearance, and emery size in huskers

KU21. the techniques for separating de-husked wheat using aspirators and controlling fan speed for optimal separation

KU22. the cooling and bran removal processes using controlled air pressure

KU23. the wheat grading systems, including the use of graders to assess wheat quality parameters
KU24. the techniques to remove broken wheat using sifters and recommended vibration speeds for different wheat
KU25. the sampling techniques and coordination with the quality lab for testing and analysis of processed wheat
KU26. the Legal Metrology Act, 2009, and its requirements for establishing weights and measures
KU27. the types of packaging materials (e.g., HDPE, LDPE, jute bags) and selection criteria based on organizational standards
KU28. the operation of packing machinery and the proper setup of batch codes, date coding, and filling quantities
KU29. the labelling procedures as per FSSAI regulations, including the mandatory information required on wheat packages
KU30. the methods to check the weight of packed products and ensure compliance with standards
KU31. the storage conditions required for storing packed wheat, including temperature and humidity controls
KU32. the record-keeping procedures for wheat milling operations, including raw material records, production details, and quality control data
KU33. the techniques for controlling Operational Prerequisite Programs (OPRPs) and Critical Control Points (CCPs) in wheat milling
KU34. the industry-approved cleaning procedures for machinery and tools (CIP and COP)
KU35. the basic repair and maintenance techniques for milling equipment to prevent malfunctions
KU36. the waste disposal procedures for byproducts generated during milling processes
KU37. the food safety risks associated with the cleaning process and related control measures
KU38. the food fraud prevention measures and various types of PRP

Generic Skills (GS)

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

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 prioritise tasks to ensure timely completion
GS8. make quick decisions in case of an emergency/ accident

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Set up and calibrate the equipment	**10**	**16**	**-**	**6**
PC1. ensure all equipment is clean, free from infestation, and functioning properly	1	1	-	0.5
PC2. calibrate automatic measuring scales with standard weights and measures	1	2	-	1
PC3. examine the screens/sieves for damage	0.5	1	-	0.5
PC4. set up screens/sieves for cleaning, grading, and sieving machines (rotary screen cleaners, graders, plan sifters, etc	1	2	-	0.5
PC5. check the cleaning and effectiveness of magnets, ensuring proper calibration of metal detectors according to manufacturer's instructions	1	1	-	0.5
PC6. adjust and control the speed of screw or chain conveyors and motors to maintain wheat flow rate	1	2	-	0.5
PC7. check bucket elevators, chain conveyors, and screw conveyors for the appropriate condition, ensuring no damage	1	2	-	0.5
PC8. carry out lubrication of moving equipment parts using the recommended lubricants	1	2	-	0.5
PC9. check all sensors are in working condition to maintain the flow rate	1	1	-	0.5
PC10. set controls of blowers or suction fans to remove light impurities and dust particles from screens and sieves	1	1	-	0.5
PC11. ensure no leakage in blowers or suction fans	0.5	1	-	0.5
Carry out pre-processing of wheat	**3**	**6**	**-**	**2**
PC12. clean the received wheat using a winnowing machine to remove impurities like chaff, soil, and dirt	0.5	1	-	0.5
PC13. grade the wheat as per the desired size	1	2	-	0.5

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. inspect the fumigated wheat for the presence of any live infestation and take appropriate corrective measures	1	2	-	0.5
PC15. collect in-process samples and transfer them to the quality lab for testing	0.5	1	-	0.5
Carry out wheat processing	**10**	**18**	**-**	**6**
PC16. remove stones from the wheat using the de-stoner machine to prepare them for washing	1	2	-	0.5
PC17. set appropriate controls for water bath and conditioner time for soaking, conditioning, and tempering of wheat for further processing	1	2	-	0.5
PC18. monitor water level, temperature, inflow, and outflow rate during washing	1	2	-	0.5
PC19. dry wheat under the sun or using appropriate drying equipment, such as continuous flow dryer, batch dryer, solar dryer, etc	1	2	-	0.5
PC20. adjust the temperature, pressure, and speed of the dryer to maintain the required moisture content in the wheat	1	2	-	0.5
PC21. regulate the amount of grain conveyed into the dryer (parboiled grain) by adjusting the dryer valves	1	2	-	0.5
PC22. remove husks by adjusting roller speed, clearance, and emery size, as required	1	1	-	0.5
PC23. separate the de-husked wheat by setting the appropriate aspirator fan speed	1	1	-	0.5
PC24. cool the grain and blow off the bran at the recommended air pressure	0.5	1	-	0.5
PC25. grade the processed grain based on the applicable parameters by using the graders	0.5	1	-	0.5
PC26. remove the broken wheat by using the sifter at the recommended vibration speed	0.5	1	-	0.5
PC27. remove the hull from the grain using the decorticator/de-husker, as required	0.5	1	-	0.5

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out post-processing activities	**7**	**10**	**-**	**6**
PC28. collect samples of the processed grain and coordinate their quality analysis with the quality-testing lab for analysis	0.5	1	-	0.5
PC29. follow the Legal Metrology Act, 2009 for establishing weights and measures as per standards	0.5	1	-	0.5
PC30. select appropriate packaging materials as per the organizational standards to pack the milled grain	0.5	1	-	0.5
PC31. pack the milled grain using the appropriate packing machinery	0.5	1	-	0.5
PC32. carry out labelling of the processed grain packs with the necessary information as per the applicable FSSAI regulations	0.5	1	-	0.5
PC33. check the weight of the packed/bagged product to ensure conformance to the applicable standards	0.5	1	-	0.5
PC34. store the packed under the recommended temperature and humidity in a hygienic storage	0.5	0.5	-	0.5
PC35. maintain appropriate records concerning the grain milling operations and post-production activities, e.g. raw material records, production records, quality check records, etc	0.5	0.5	-	0.5
PC36. clean the work area, machinery, and tools using industry-approved cleaning procedures (e.g., dismantling, pressurized air cleaning	0.5	0.5	-	0.5
PC37. follow the Clean-in-Place (CIP) and Clean-out-of-Place (COP) procedures	0.5	0.5	-	0.5
PC38. carry out basic repair and maintenance of equipment to prevent equipment breakdown and malfunctions	0.5	0.5	-	0.5
PC39. follow the maintenance schedule and procedure for the tools, equipment and machinery prescribed by the Original Equipment Manufacturer (OEM)	0.5	0.5	-	0.5

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC40. coordinate with the OEM for complex equipment repair and maintenance needs	0.5	0.5	-	-
PC41. collect and dispose of the waste generated during grain milling	0.5	0.5	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N1005
NOS Name	Carry out wheat milling
Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
NSQF Level	3
Credits	4
Version	2.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

FIC/N1007: Maintain the work area and grain mill

Description

This unit is about maintaining the work area and grain milling equipment

Scope

The scope covers the following :

- Maintain the work area
- Maintain the milling equipment

Elements and Performance Criteria

Maintain the work area

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

PC1. maintain the cleanliness of the work area using the approved sanitizers to keep it free from dust, waste, flies and pests

PC2. check for potential safety hazards, such as spills or misplaced items, and address them appropriately

PC3. ensure the work area is well-ventilated and hygienic for food processing

PC4. organise the inventory, ensuring grains and other supplies are stored properly

PC5. check storage areas for signs of pests or moisture and address any issues as per health and safety guidelines

PC6. dispose of the waste materials as per defined procedures and industry requirements

Maintain the milling equipment

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

PC7. disassemble the relevant parts of the grain mill as per the manufacturer’s instructions and clean them appropriately

PC8. check the power cord and motor of the electric mill for any signs of damage

PC9. test the equipment’s safety features to ensure their correct and effective functioning

PC10. clean the hopper, grinding mechanism, and collection bin after each use to remove any grain residue

PC11. inspect the grinding plates or burrs for signs of wear and replace them if necessary

PC12. apply appropriate lubricants to moving parts as recommended by the manufacturer

PC13. check and tighten any loose screws or bolts

PC14. check all equipment in the work area for signs of damage or wear

PC15. identify and replace the worn-out parts or the parts that have reached the end of their recommended service life

PC16. coordinate with a professional for complex equipment repair and maintenance

PC17. carry out appropriate upgrades in the equipment through coordination with the supervisor

PC18. follow the equipment maintenance guidelines provided by the manufacturer

PC19. maintain the record of all maintenance activities, including dates and actions taken

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. proper cleaning techniques for the work area and equipment
KU2. the safety guidelines to prevent accidents and ensure a safe working environment
KU3. the use of tools and equipment used for maintenance tasks
KU4. how to identify and resolve common issues that may arise during maintenance
KU5. how to identify and address potential safety hazards such as spills, clutter, or equipment malfunctions
KU6. the proper disposal methods for waste products
KU7. the pest control measures to prevent infestations in grain storage and processing areas
KU8. the parts of the grain mill, e.g., hopper, grinding mechanism, collection bin, and motor
KU9. how to disassemble and reassemble the mill for thorough cleaning and maintenance
KU10. how to clean, inspect, and maintain the grinding mechanism, e.g., burrs, stones, etc
KU11. the parts of the grain mill that require lubrication and the type of lubricants to be used
KU12. basic electrical maintenance of electrical components of an electric grain mill
KU13. how to calibrate the mill to achieve the desired grain consistency
KU14. the signs of wear and tear on components and when and how to replace them
KU15. the importance of following the manufacturers maintenance guidelines and recommendations for the maintenance of grain mill
KU16. the applicable documentation and record-keeping requirements
KU17. the inventory management for maintenance supplies and replacement parts of the mill
KU18. the health and safety regulations pertaining to food processing and equipment maintenance
KU19. the sanitation standards and best practices for maintaining a clean and safe work environment

Generic Skills (GS)

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

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 prioritise tasks to ensure timely completion
GS8. make quick decisions in case of an emergency/ accident

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain the work area	**9**	**15**	**-**	**6**
PC1. maintain the cleanliness of the work area using the approved sanitizers to keep it free from dust, waste, flies and pests	2	3	-	1
PC2. check for potential safety hazards, such as spills or misplaced items, and address them appropriately	1	2	-	1
PC3. ensure the work area is well-ventilated and hygienic for food processing	1	2	-	1
PC4. organise the inventory, ensuring grains and other supplies are stored properly	2	3	-	1
PC5. check storage areas for signs of pests or moisture and address any issues as per health and safety guidelines	1	2	-	1
PC6. dispose of the waste materials as per defined procedures and industry requirements	2	3	-	1
Maintain the milling equipment	**21**	**35**	**-**	**14**
PC7. disassemble the relevant parts of the grain mill as per the manufacturer's instructions and clean them appropriately	2	3	-	1
PC8. check the power cord and motor of the electric mill for any signs of damage	2	3	-	1
PC9. test the equipment's safety features to ensure their correct and effective functioning	2	3	-	2
PC10. clean the hopper, grinding mechanism, and collection bin after each use to remove any grain residue	2	3	-	1
PC11. inspect the grinding plates or burrs for signs of wear and replace them if necessary	2	3	-	1
PC12. apply appropriate lubricants to moving parts as recommended by the manufacturer	2	3	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check and tighten any loose screws or bolts	2	3	-	1
PC14. check all equipment in the work area for signs of damage or wear	1	3	-	1
PC15. identify and replace the worn-out parts or the parts that have reached the end of their recommended service life	2	3	-	1
PC16. coordinate with a professional for complex equipment repair and maintenance	1	2	-	1
PC17. carry out appropriate upgrades in the equipment through coordination with the supervisor	1	2	-	1
PC18. follow the equipment maintenance guidelines provided by the manufacturer	1	2	-	1
PC19. maintain the record of all maintenance activities, including dates and actions taken	1	2	-	1
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N1007
NOS Name	Maintain the work area and grain mill
Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Bread and Bakery
NSQF Level	3
Credits	2
Version	2.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

FIC/N9906: Apply food safety guidelines in Food Processing

Description

This unit covers the essential components of food safety, Good Manufacturing Practices (GMP), and personal hygiene in the food industry. It emphasizes the importance of individuals working in the food industry in protecting the health and well-being of consumers by following food safety protocols and procedures and ensuring the production of safe and high-quality food products.

Scope

The scope covers the following :

- Apply personal hygiene and follow Good Manufacturing practices at the workplace.
- Implement Food Safety and pre-requisite programs (PRP) at the workplace.

Elements and Performance Criteria

Apply personal hygiene and follow Good Manufacturing practices at workplace

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

PC1. PC1. follow a site relevant documented procedure for Personal Hygiene and Visitor/ Contractor rules.

PC2. PC2. follow work instructions at levels of employees inside a food manufacturing site and ensure that the relevant instructions are well communicated and being followed at the fixed timelines.

PC3. PC3. ensure timely participate and carry out the relevant training and awareness sessions on personal hygiene, GMP, and related topics.

PC4. PC4.ensure timely medical examination from a prescribed and authorized doctor and comply with the guidelines of Schedule IV as described in Food Safety Standard Authority of India (FSSAI) guidelines.

PC5. PC5. fill in data in the daily monitoring checklist related to personal hygiene, food safety, and GMP.

PC6. • PC6. follow a site-relevant documented procedure and area-wise work instructions for Good Manufacturing Practices (GMP) to be followed on the site.
• procedure: Hand washing requirements, Gowning & De gowning protocols, cleaning, and sanitation of employee lockers, follow the protocols as laid down in the different categories of processing areas like Low Risk, High Risk, High Care areas, etc.

PC7. PC7. follow all validated Do’s & Don’ts inside a food manufacturing firm.

PC8. PC8. follow man and materials movement throughout the production facility, to restrict unwanted hazards to cross-contaminate the products which are being manufactured in the facility.

PC9. PC9. refer to the process flow charts, HACCP summary plan, and critical process parameters in each and respective areas of the production line.

PC10. PC10. identify the material requirements such as manufacturing equipments, Utensils, and other processing aids, cleaning chemicals, and cleaning work instructions in all the relevant areas of the manufacturing facility. Also, a special focus shall be given to Allergens and their risks. Wherever required, the allergen requirements shall be separately addressed.

PC11. PC11. 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.

PC12. PC12. follow and implement all training and awareness guidelines in the manufacturing area and regularly participate in training effectiveness for evaluation.

PC13. PC13. participate in audits and address the aspects of Good Manufacturing Procedures, personal hygiene, and food safety.

PC14. PC14. ensure the record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameters, etc.

Implement food safety practices at the workplace

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

PC15. PC15. maintain updated facilities, equipment, and tool and design requirements to minimize the risks associated with the products being handled at the site.

PC16. PC16. follow the instruction in the raw and packaging materials warehouse and ensure receiving material parameters match all the laid requirements. parameters: Incoming vehicles Visual report, storage, and handling requirements, hazardous and non-hazardous goods, allergens, cross-contamination risks, Quarantine, Accepted & rejected goods, monitoring temperature and humidity, etc.

PC17. PC17. 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.

PC18. PC18. ensure timely check of the critical control points and product parameters.

PC19. PC19. record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters, etc.

PC20. PC20. report any food safety and GMP issue to the supervisor, if any.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. importance of personal hygiene, GMP, visitors & contractor's rules. Associated risk in case of deviation from the standard policies and how the requirement is linked with the site's FSSAI License.

KU2. KU2. importance of training and work instruction delivered by the supervisors.

KU3. KU3. importance of filling the records and checklists, formats and how to ensure that the timely and effective completion is achieved.

KU4. KU4. knowledge of trainings and skills required to perform in food processing premises.

KU5. KU5. understand FSSAI Schedule IV requirements of food handlers and PRPs within the processing area

KU6. KU6. importance of timely medical examinations and awareness of communicable diseases

KU7. Understanding of Do's & Don'ts, intellect mindset to understand the visual illustrations

KU8. KU8. understanding about Site Zoning plans.

KU9. KU9. awareness of layout which would help to demarcate the defined movements of RM, PM, FG, and wastes generated during the processing of goods. This one lays a framework to launch Good Manufacturing Practices (GMP) successfully and effectively on site.

KU10. KU10. understand the manufacturing process, product parameters and process control parameters such as CCPs

KU11. KU11. understanding about Hazard Analysis and Critical Control Points (HACCP)

KU12. KU12. understanding about Allergens and their types and controls to monitor effective handling of allergen raw materials on site.

KU13. KU13. basic understanding of traceability and mock recall

KU14. KU14. awareness about Internal & external Audits

KU15. KU15. understanding for RCA CAPA, cleaning and sanitation

KU16. KU16. awareness about record keeping and data monitoring in various sheets as per organizational requirement

Generic Skills (GS)

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

GS1. GS1. read and comprehend basic content to read labels, charts, signages, symbols and product manuals

GS2. GS2. communicate with coworkers appropriately to clarify instructions and other issues

GS3. GS3. plan and organize the work schedule, work area, tools, equipment, and materials for improved productivity

GS4. GS4. plan and prioritize tasks as per work requirements

GS5. GS5. always be punctual and courteous

GS6. GS6. good observations and intellect mindset

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Apply personal hygiene and follow Good Manufacturing practices at workplace	**22**	**44**	**-**	**6**
PC1. PC1. follow a site relevant documented procedure for Personal Hygiene and Visitor/ Contractor rules.	2	4	-	-
PC2. PC2. follow work instructions at levels of employees inside a food manufacturing site and ensure that the relevant instructions are well communicated and being followed at the fixed timelines.	2	4	-	2
PC3. PC3. ensure timely participate and carry out the relevant training and awareness sessions on personal hygiene, GMP, and related topics.	2	4	-	-
PC4. PC4.ensure timely medical examination from a prescribed and authorized doctor and comply with the guidelines of Schedule IV as described in Food Safety Standard Authority of India (FSSAI) guidelines.	2	4	-	-
PC5. PC5. fill in data in the daily monitoring checklist related to personal hygiene, food safety, and GMP.	2	4	-	-
PC6. • PC6. follow a site-relevant documented procedure and area-wise work instructions for Good Manufacturing Practices (GMP) to be followed on the site. • procedure: Hand washing requirements, Gowning & De gowning protocols, cleaning, and sanitation of employee lockers, follow the protocols as laid down in the different categories of processing areas like Low Risk, High Risk, High Care areas, etc.	2	4	-	2
PC7. PC7. follow all validated Do's & Don'ts inside a food manufacturing firm.	1	2	-	1
PC8. PC8. follow man and materials movement throughout the production facility, to restrict unwanted hazards to cross-contaminate the products which are being manufactured in the facility.	2	4	-	-
PC9. PC9. refer to the process flow charts, HACCP summary plan, and critical process parameters in each and respective areas of the production line.	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. PC10. identify the material requirements such as manufacturing equipments, Utensils, and other processing aids, cleaning chemicals, and cleaning work instructions in all the relevant areas of the manufacturing facility. Also, a special focus shall be given to Allergens and their risks. Wherever required, the allergen requirements shall be separately addressed.	2	4	-	-
PC11. PC11. 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.	1	2	-	-
PC12. PC12. follow and implement all training and awareness guidelines in the manufacturing area and regularly participate in training effectiveness for evaluation.	1	2	-	-
PC13. PC13. participate in audits and address the aspects of Good Manufacturing Procedures, personal hygiene, and food safety.	1	2	-	-
PC14. PC14. ensure the record keeping and documentation such as Daily Monitoring Sheets, Batch Traceability Records, machine records, product parameters, process control parameters, etc.	1	2	-	-
Implement food safety practices at the workplace	**8**	**16**	**-**	**4**
PC15. PC15. maintain updated facilities, equipment, and tool and design requirements to minimize the risks associated with the products being handled at the site.	2	4	-	-
PC16. PC16. follow the instruction in the raw and packaging materials warehouse and ensure receiving material parameters match all the laid requirements. parameters: Incoming vehicles Visual report, storage, and handling requirements, hazardous and non-hazardous goods, allergens, cross-contamination risks, Quarantine, Accepted & rejected goods, monitoring temperature and humidity, etc.	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC17. PC17. 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.	2	4	-	2
PC18. PC18. ensure timely check of the critical control points and product parameters.	1	2	-	-
PC19. PC19. record keeping and documentation such as daily monitoring sheets, cleaning sheets, parameters, etc.	1	2	-	1
PC20. PC20. report any food safety and GMP issue to the supervisor, if any.	1	2	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N9906
NOS Name	Apply food safety guidelines in Food Processing
Sector	Food Processing
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	1
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

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

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

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

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

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

PC3. 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.

Basic English Skills

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

PC4. speak with others using some basic English phrases or sentences

Communication Skills

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

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

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

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

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

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

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

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

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

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

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

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

KU10. how to compute income and expenses
KU11. importance of maintaining safety and security in financial transactions
KU12. different legal rights and laws
KU13. how to operate digital devices and applications safely and securely
KU14. ways to identify business opportunities
KU15. types of customers and their needs
KU16. how to apply for a job and prepare for an interview
KU17. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. communicate effectively using appropriate language
GS2. behave politely and appropriately with all
GS3. perform basic calculations
GS4. solve problems effectively
GS5. be careful and attentive at work
GS6. use time effectively
GS7. maintain hygiene and sanitisation to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	1	3	-	-
PC3. 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.	-	-	-	-
Basic English Skills	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	**4**	**6**	**-**	**-**
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
Entrepreneurship	**3**	**5**	**-**	**-**
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	**2**	**2**	**-**	**-**
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**1**	**3**	**-**	**-**
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	08/05/2028
NSQC Clearance Date	08/05/2025

FIC/N1028: Carry out milling of rice

Description

This unit covers the milling process of cereals, including rice and wheat

Scope

The scope covers the following :

- Carry out pre-milling preparation and parboiling
- Carry out rice milling and processing
- Perform post-milling quality control and storage

Elements and Performance Criteria

Carry out pre-milling preparation and parboiling

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

PC1. grade and clean paddy using appropriate machines (winnowers, graders) to remove impurities like stones, dust, and foreign material before soaking

PC2. adjust water bath controls to soak paddy for the recommended duration for parboiling

PC3. maintain the appropriate temperature and pressure of the steam by adjusting water bath valves

PC4. pass steam through soaked paddy to gelatinize starch for parboiled rice

PC5. dry the parboiled rice using the dryer at the appropriate temperature and airspeed to achieve the desired moisture level

Carry out rice milling and processing

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

PC6. remove stones from paddy using de-stoner machines before milling

PC7. remove husk from parboiled rice using husker machines

PC8. transfer brown rice to water polisher and adjust water and airflow to polish rice

PC9. inspect and replace polisher rollers periodically to ensure product uniformity

PC10. transfer polished rice to the whitener for final whitening

PC11. feed white rice into the hopper to control the quantity entering the milling machinery

PC12. spread grains evenly on the grinding rollers to ensure consistent quality

PC13. operate roller mills to reduce the size of processed grains

PC14. adjust roller clearance and speed for optimal fineness and yield, based on grain size and hardness

PC15. separate broken rice from whole grains using sifters or graders at the appropriate settings

Perform post-milling quality control and storage

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

PC16. remove chaff and inspect the milled rice yield for quality and consistency

PC17. coordinate the quality analysis of milled rice with the quality-testing lab

PC18. test the moisture content of milled rice to ensure it meets storage requirements

PC19. store the milled rice under the recommended conditions for further processing or packaging

PC20. select and operate appropriate packaging machinery to pack milled rice according to organizational standards

PC21. ensure packed rice is labelled with the necessary information according to applicable regulations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the basic operating principles of milling equipment such as separators, destoners, gravity selectors, dampeners, scourers, emery rollers, aspirators, blowers, sifters, huskers, polishers, and whiteners

KU2. the calibration procedures for standard weights and measures, and types of screens and sieves used in rice milling machines

KU3. the moisture control techniques specific to rice milling, including how to manage moisture during drying and parboiling to achieve desired product characteristics

KU4. the process of parboiling paddy, including soaking, steaming, and drying procedures to gelatinize starch and maintain the desired moisture level

KU5. the factors influencing the colour and texture improvement of milled rice, and how to operate polishing and whitening equipment for enhanced product appearance

KU6. the water bath controls and appropriate adjustments for soaking paddy during parboiling

KU7. the temperature and pressure control needed for steam gelatinization of starch in soaked paddy

KU8. the relevant drying techniques, including the use of continuous flow and batch dryers, as well as dryer settings (temperature, airspeed) to achieve the required moisture level in rice

KU9. the use of husker machines to efficiently remove husk from parboiled and raw rice

KU10. the water polisher operations, including air and water flow adjustments to ensure consistent polishing of rice

KU11. the maintenance of polisher rollers, including inspection and replacement for uniform product quality

KU12. the rice whitening processes, including the use of whiteners to achieve the desired appearance of polished rice

KU13. the roller mill operations, including clearance and speed adjustments for grinding rice grains to the desired size and hardness

KU14. the techniques for separating broken rice from whole grains using sifters or graders

KU15. the quality testing parameters for milled rice, and how to coordinate with the quality lab to inspect yield and compliance with standards

KU16. the appropriate storage conditions for milled rice, including humidity and temperature control to preserve product quality

KU17. the safety protocols involved in handling and operating rice milling machinery to prevent accidents and ensure safe production

KU18. the rice packaging techniques, including FFS (form-fill-seal) machine operations, maintenance, and adjustments for product packaging and labeling (batch numbers, manufacturing dates, pricing)

KU19. the printing techniques, including inkjet and ribbon printing on packaging materials, and how to identify and rectify common packaging printing errors

KU20. the use of colour sorters to separate discolored or defective rice grains from the final product

KU21. the process of testing the moisture content of rice before and after milling to ensure it meets storage and quality standards

KU22. the role of aspirators and blowers in removing light impurities and dust during the milling process

Generic Skills (GS)

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

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 prioritise tasks to ensure timely completion

GS8. make quick decisions in case of an emergency/ accident

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out pre-milling preparation and parboiling	**5**	**5**	**-**	**4**
PC1. grade and clean paddy using appropriate machines (winnowers, graders) to remove impurities like stones, dust, and foreign material before soaking	1	1	-	1
PC2. adjust water bath controls to soak paddy for the recommended duration for parboiling	1	1	-	1
PC3. maintain the appropriate temperature and pressure of the steam by adjusting water bath valves	1	1	-	1
PC4. pass steam through soaked paddy to gelatinize starch for parboiled rice	1	1	-	0.5
PC5. dry the parboiled rice using the dryer at the appropriate temperature and airspeed to achieve the desired moisture level	1	1	-	0.5
Carry out rice milling and processing	**15**	**30**	**-**	**10**
PC6. remove stones from paddy using de-stoner machines before milling	1	3	-	1
PC7. remove husk from parboiled rice using husker machines	1	3	-	1
PC8. transfer brown rice to water polisher and adjust water and airflow to polish rice	2	3	-	1
PC9. inspect and replace polisher rollers periodically to ensure product uniformity	2	3	-	1
PC10. transfer polished rice to the whitener for final whitening	2	3	-	1
PC11. feed white rice into the hopper to control the quantity entering the milling machinery	2	3	-	1
PC12. spread grains evenly on the grinding rollers to ensure consistent quality	2	3	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. operate roller mills to reduce the size of processed grains	1	3	-	1
PC14. adjust roller clearance and speed for optimal fineness and yield, based on grain size and hardness	1	3	-	1
PC15. separate broken rice from whole grains using sifters or graders at the appropriate settings	1	3	-	1
Perform post-milling quality control and storage	**10**	**15**	**-**	**6**
PC16. remove chaff and inspect the milled rice yield for quality and consistency	1	3	-	1
PC17. coordinate the quality analysis of milled rice with the quality-testing lab	2	3	-	1
PC18. test the moisture content of milled rice to ensure it meets storage requirements	2	3	-	1
PC19. store the milled rice under the recommended conditions for further processing or packaging	2	2	-	1
PC20. select and operate appropriate packaging machinery to pack milled rice according to organizational standards	2	2	-	1
PC21. ensure packed rice is labelled with the necessary information according to applicable regulations	1	2	-	1
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N1028
NOS Name	Carry out milling of rice
Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
NSQF Level	4
Credits	3
Version	2.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

FIC/N1027: Carry out milling of pulses

Description

This unit covers the pre-processing, wet and dry milling of pulses

Scope

The scope covers the following :

- Carry out pre-processing of pulses for milling
- Carry out wet milling of pulses
- Carry out dry milling of pulses

Elements and Performance Criteria

Carry out pre-processing of pulses for milling

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

PC1. grade pulses based on physical characteristics (size, shape, moisture content), chemical properties (composition, rancidity), and biological factors (germination, infestation)

PC2. inspect and clean the equipment such as splitters, polishers, and mills to ensure readiness for pulse processing

PC3. set controls on splitter machines, adjusting rotary blade rotation to split or separate de-husked pulses

PC4. transfer cleaned pulses to the processing area for further handling

Carry out wet milling of pulses

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

PC5. carry out pitting of pulses by using the abrasive roller machine to facilitate water absorption during soaking

PC6. soak pulses for the recommended duration, setting the appropriate water level, temperature, and flow rate in the water bath

PC7. maintain the soaked pulses under the recommended temperature after mixing them with red earth for an appropriate duration to achieve even distribution

PC8. dry pulses under the sun for the recommended duration to achieve the required moisture levels

PC9. remove red earth from dried pulses by using the appropriate sieve, ensuring complete separation and minimal loss of pulses

PC10. remove husk from pulses by correctly operating the husker, adjusting the settings as required to ensure efficient husk removal

PC11. split de-husked pulses by adjusting the splitter's blade rotation, speed, and other controls, to ensure efficient splitting

PC12. peel off the bran from pulses by operating polisher machine, adjusting settings to ensure effective peeling while preserving the quality of pulses

Carry out dry milling of pulses

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

PC13. remove husk from pulses by adjusting roller speed, clearance, and emery size on the husker for efficient husk removal

PC14. separate de-husked pulses by adjusting the aspirator fan speed to ensure effective husk removal

PC15. carry out pitting of pulses by using the abrasive roller machine to prepare them for oil soaking

PC16. soak and condition pulses by adjusting the water level, temperature, and flow rate in the water bath

PC17. maintain proper moisture levels in pulses by measuring moisture content and adjusting dryer controls for temperature, speed, and pressure

PC18. split dried pulses by using the splitter at the recommended blade rotation to match processing needs

PC19. peel bran from dried pulses by operating polisher machines such as cylindrical rollers and screw conveyors

PC20. cool pulses and remove the peeled bran by using suction fans or blowers at the appropriate air stream

PC21. separate broken pulses by adjusting sifter speed and selecting the correct sieve size

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the physical characteristics of pulses (size, shape, moisture content) and how to grade them accordingly

KU2. the chemical properties affecting pulses, including composition and rancidity

KU3. the biological factors such as germination and infestation

KU4. the inspection and cleaning procedures for milling equipment (splitters, polishers, mills) to ensure readiness for processing

KU5. the basic operating principles of milling equipment, including components, capacities, and applications

KU6. the operating principles of abrasive roller machines and their role in pitting pulses

KU7. the calibration procedures for standard weights and measures

KU8. the types of screens and sieves used in pulse milling machines

KU9. the significance of using cleaners and graders in milling processes

KU10. the implications of soaking, conditioning, and tempering pulses

KU11. the pulse soaking parameters (duration, water level, temperature, flow rate) and their importance for effective milling

KU12. the temperature control and mixing techniques with red earth to achieve desired results

KU13. the drying techniques and moisture level targets for pulses

KU14. the operation of sieves and the importance of complete separation of red earth and husk

KU15. the appropriate roller adjustments (speed, clearance, emery size) to optimize husk removal

KU16. the use of aspirator for separating de-husked pulses effectively

KU17. the pitting procedures and their significance in preparation for oil soaking

KU18. the moisture measurement techniques and dryer controls for maintaining optimal conditions
KU19. the operation of polishers and sifting equipment for final product quality
KU20. the industry-approved cleaning procedures for machinery and tools (CIP and COP)
KU21. the sampling procedures and criteria for finished product quality against standard parameters
KU22. the types of packing machines and packaging materials used in pulse milling
KU23. the appropriate printing techniques and methods to ensure printing effectiveness on packaging
KU24. the common printing errors and rectification procedures

Generic Skills (GS)

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

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 prioritise tasks to ensure timely completion
GS8. make quick decisions in case of an emergency/ accident

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out pre-processing of pulses for milling	**4**	**10**	**-**	**2**
PC1. grade pulses based on physical characteristics (size, shape, moisture content), chemical properties (composition, rancidity), and biological factors (germination, infestation)	1	2	-	0.5
PC2. inspect and clean the equipment such as splitters, polishers, and mills to ensure readiness for pulse processing	1	3	-	0.5
PC3. set controls on splitter machines, adjusting rotary blade rotation to split or separate de-husked pulses	1	2	-	0.5
PC4. transfer cleaned pulses to the processing area for further handling	1	3	-	0.5
Carry out wet milling of pulses	**12**	**20**	**-**	**8**
PC5. carry out pitting of pulses by using the abrasive roller machine to facilitate water absorption during soaking	2	3	-	1
PC6. soak pulses for the recommended duration, setting the appropriate water level, temperature, and flow rate in the water bath	2	3	-	1
PC7. maintain the soaked pulses under the recommended temperature after mixing them with red earth for an appropriate duration to achieve even distribution	1	2	-	1
PC8. dry pulses under the sun for the recommended duration to achieve the required moisture levels	1	2	-	1
PC9. remove red earth from dried pulses by using the appropriate sieve, ensuring complete separation and minimal loss of pulses	1	2	-	1
PC10. remove husk from pulses by correctly operating the husker, adjusting the settings as required to ensure efficient husk removal	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. split de-husked pulses by adjusting the splitter's blade rotation, speed, and other controls, to ensure efficient splitting	2	3	-	1
PC12. peel off the bran from pulses by operating polisher machine, adjusting settings to ensure effective peeling while preserving the quality of pulses	2	3	-	1
Carry out dry milling of pulses	**14**	**20**	**-**	**10**
PC13. remove husk from pulses by adjusting roller speed, clearance, and emery size on the husker for efficient husk removal	2	3	-	1
PC14. separate de-husked pulses by adjusting the aspirator fan speed to ensure effective husk removal	1	2	-	1
PC15. carry out pitting of pulses by using the abrasive roller machine to prepare them for oil soaking	2	2	-	2
PC16. soak and condition pulses by adjusting the water level, temperature, and flow rate in the water bath	2	3	-	1
PC17. maintain proper moisture levels in pulses by measuring moisture content and adjusting dryer controls for temperature, speed, and pressure	2	2	-	1
PC18. split dried pulses by using the splitter at the recommended blade rotation to match processing needs	1	2	-	1
PC19. peel bran from dried pulses by operating polisher machines such as cylindrical rollers and screw conveyors	2	2	-	1
PC20. cool pulses and remove the peeled bran by using suction fans or blowers at the appropriate air stream	1	2	-	1
PC21. separate broken pulses by adjusting sifter speed and selecting the correct sieve size	1	2	-	1
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N1027
NOS Name	Carry out milling of pulses
Sector	Food Processing
Sub-Sector	Food Grain Milling
Occupation	Processing-Food Grain Milling (including oilseeds)
NSQF Level	4
Credits	3
Version	2.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

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 : 50

(**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	15
FIC/N1005.Carry out wheat milling	30	50	-	20	100	30
FIC/N1007.Maintain the work area and grain mill	30	50	-	20	100	20
FIC/N9906.Apply food safety guidelines in Food Processing	30	60	-	10	100	15
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	**140**	**260**	**-**	**50**	**450**	**90**

Elective: 1 Milling of rice

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FIC/N1028.Carry out milling of rice	30	50	-	20	100	10
Total	**30**	**50**	**-**	**20**	**100**	**10**

Elective: 2 Milling of pulses

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FIC/N1027.Carry out milling of pulses	30	50	-	20	100	10
Total	**30**	**50**	**-**	**20**	**100**	**10**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NCVET	National Council for Vocational Education and Training
FICSI	Food Industry Capacity & Skill Initiative
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills
HACCP	Hazard Analysis and Critical Control Points
FSSAI	Food Safety and Standards Authority of India
GMPs	Good Manufacturing Practices
PPE	Personal Protective Equipment
CIP	Clean-in-Place
COP	Clean-out-of-Place

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.
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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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