



Dairy Processing Equipment Operator

QP Code: FIC/Q2002

Version: 2.0

NSQF Level: 4

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Qualification Pack

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FIC/Q2002: Dairy Processing Equipment Operator

Brief Job Description

A Dairy Processing Equipment Operator is responsible for operating various types of dairy processing machineries for producing dairy products such as filter, separator, homogenizer, pasteurizer, chiller, churner, clarifier, freezer etc. to filter, separate, homogenize, pasteurize, cool, churn, clarify, freeze milk

Personal Attributes

A Dairy Processing Equipment Operator must have the the ability to plan, organize, prioritize, calculate, concentrate and handle pressure. The individual must possess reading, writing and communication skills. In addition, the individual must have mechanical aptitude and trouble shooting skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [FIC/N2005: Prepare and maintain work area and process machineries for operating dairy processing equipments](#)
2. [FIC/N2006: Prepare for operating dairy process machineries and production of various dairy products](#)
3. [FIC/N2007: Operate dairy processing machineries](#)
4. [FIC/N2008: Complete documentation and record keeping related to operating of dairy processing equipments](#)
5. [FIC/N9001: Ensure food safety, hygiene and sanitation for processing food products](#)

Qualification Pack (QP) Parameters

Sector	Food Processing
Sub-Sector	Dairy Products
Occupation	Processing-Dairy Products
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2004/7413.10

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Minimum Educational Qualification & Experience	10th Class with 2 Years of experience In dairy Industry OR 12th Class (Science Stream) OR 10th Class + I.T.I (2 years) OR 10th Class (and 2 years course in relevant field)
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	1. Food standards and regulations 2. Operating different types of dairy processing equipments 3. Packaging technology 4. GMP 5. HACCP 6. QMS 7. Computer basics and ERP system followed by the organization 8. Training in Food Safety Standards and Regulations (as per FSSAI) (Mandatory)
Minimum Job Entry Age	18 Years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2024
Deactivation Date	29/07/2024
NSQC Approval Date	29/07/2021
Version	2.0
Reference code on NQR	2021/FI/FICSI/04372
NQR Version	1.0

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FIC/N2005: Prepare and maintain work area and process machineries for operating dairy processing equipments

Description

This OS unit is about preparation of work area to ensure hygiene and safety of work area, ensure performance, efficiency and maintenance of process machineries and tools for operating dairy processing equipments, considering the specifications and standards of the organization

Elements and Performance Criteria

Prepare and maintain work area (for operating dairy processing equipments)

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

- PC1.** clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests
- PC2.** ensure that work area is safe and hygienic for food processing
- PC3.** dispose waste materials as per organisation standards and industry requirements

Prepare and maintain process machineries and tools (for operating dairy processing equipments)

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

- PC4.** check the working and performance of all machineries and equipments used for the process such as filter, homogenizer, pasteurizer, separator, clarifier, packaging machines, etc
- PC5.** clean the machineries and tools used with recommended sanitizers following specifications and organisation standards
- PC6.** place the necessary tools required for process
- PC7.** attend minor repairs/faults of all machines, if required
- PC8.** select and set the machines and tools required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organization standards, process standards and procedures followed in the organisation
- KU2.** types of products produced by the organisation
- KU3.** code of business conduct
- KU4.** dress code to be followed
- KU5.** job responsibilities/duties and standard operating procedures
- KU6.** internal processes like procurement, store management, inventory management, quality management and key contact points for query resolution
- KU7.** provision of wages, working hours and accident compensation as per organisation policy
- KU8.** food safety and hygiene standards followed
- KU9.** types of chemicals, materials and equipment required for the cleaning and maintenance
- KU10.** cleaning process to disinfect equipment/ tools
- KU11.** supplier/manufacturers instructions related to cleaning and maintenance

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- KU12.** knowledge of food safety standards and regulations (as per FSSAI)
- KU13.** knowledge on legal regulations pertaining to work place like health and safety, recommended dosage for use of sanitizers, control of substances hazardous to health, handling/storage/ disposal/ cautions of use of sanitizers and disinfectants, fire precautions, occurrences, hygiene practice, disposal of waste, environmental protection etc

Generic Skills (GS)

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

- GS1.** note the information communicated by the supervisor
- GS2.** note the raw materials used for production and the finished products produced
- GS3.** note the readings of the process parameters and provide necessary information to fill the process chart
- GS4.** note down observations (if any) related to the process
- GS5.** write information documents to internal departments/ internal teams
- GS6.** note down the data for online ERP or as per applicability in the organization
- GS7.** read and interpret the process required for producing various types of products
- GS8.** read and interpret and process flowchart for all products produced
- GS9.** read equipment manuals and process documents to understand the equipments operation and process requirement
- GS10.** read internal information documents sent by internal teams
- GS11.** discuss task lists, schedules and activities with the supervisor
- GS12.** effectively communicate with the team members
- GS13.** question the supervisor in order to understand the nature of the problem and to clarify queries
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the supervisor and cross department teams on the issues faced during process
- GS16.** analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue
- GS17.** handle issues in case the manager is not available (as per the authority matrix defined by the organization)
- GS18.** plan and organize the work order and jobs received from the supervisor
- GS19.** organize raw materials and packaging materials required for all products following the instruction provided by the supervisor
- GS20.** plan and prioritize the work based on the instructions received from the supervisor
- GS21.** plan to utilise time and equipment's effectively
- GS22.** organize all process/ equipment manuals so as to access information easily
- GS23.** support the manager in scheduling tasks for helper(s)
- GS24.** understand customer requirements and their priority and respond as per their needs
- GS25.** support manager in solving problems by detailing out problems
- GS26.** discuss the possible solutions with the manager for problem solving



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- GS27.** apply domain information about maintenance processes and technical knowledge about tools and equipment
- GS28.** use common sense and make judgments on day to day basis
- GS29.** use reasoning skills to identify and resolve basic problems
- GS30.** use intuition to detect any potential problems which could arise during operations
- GS31.** use acquired knowledge of the process for identifying and handling issues

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare and maintain work area (for operating dairy processing equipments)</i>	18	32	-	-
PC1. clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests	10	15	-	-
PC2. ensure that work area is safe and hygienic for food processing	3	7	-	-
PC3. dispose waste materials as per organisation standards and industry requirements	5	10	-	-
<i>Prepare and maintain process machineries and tools (for operating dairy processing equipments)</i>	17	33	-	-
PC4. check the working and performance of all machineries and equipments used for the process such as filter, homogenizer, pasteurizer, separator, clarifier, packaging machines, etc	5	10	-	-
PC5. clean the machineries and tools used with recommended sanitizers following specifications and organisation standards	5	10	-	-
PC6. place the necessary tools required for process	2	3	-	-
PC7. attend minor repairs/faults of all machines, if required	2.5	5	-	-
PC8. select and set the machines and tools required	2.5	5	-	-
NOS Total	35	65	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	FIC/N2005
NOS Name	Prepare and maintain work area and process machineries for operating dairy processing equipments
Sector	Food Processing
Sub-Sector	Dairy Products
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2024
Deactivation Date	29/07/2024
NSQC Clearance Date	29/07/2021

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FIC/N2006: Prepare for operating dairy process machineries and production of various dairy products

Description

This unit is about preparation for production of various dairy products through planning equipment utilization and organizing raw material and equipment.

Elements and Performance Criteria

Plan equipment utilization (for production of various dairy products)

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

- PC1.** read and understand the production order from the supervisor
- PC2.** ensure working and performance of all machineries required for process
- PC3.** report malfunctions of machine, if any, to the supervisor
- PC4.** calculate the process time for effective utilization of machineries and manpower
- PC5.** allot responsibilities/ work to the assistants and helpers

Organize raw material and equipment (for production of various dairy products)

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

- PC6.** refer process chart/ product flow chart/formulation chart for product(s) produced
- PC7.** check the quality of raw materials by verifying the quality analysis report and assessing its physical parameters
- PC8.** connect pipes between holding tanks and process equipment
- PC9.** assemble fittings, valves, bowls, plates, disks, impeller shaft, and other parts of equipment to prepare for production
- PC10.** start machine and check the working condition and performance of the machine
- PC11.** make minor adjustments and repairs (if required)
- PC12.** keep the tools accessible to attend repairs/faults in case of breakdown

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organization standards, process standards and procedures followed in the organisation
- KU2.** types of products produced by the organisation
- KU3.** code of business conduct
- KU4.** dress code to be followed
- KU5.** job responsibilities/duties and standard operating procedures
- KU6.** internal processes like procurement, store management, inventory management, quality management and key contact points for query resolution
- KU7.** provision of wages, working hours and accident compensation as per organisation policy
- KU8.** food safety and hygiene standards followed

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- KU9.** types of raw materials (cow milk, goat milk, buffalo milk etc) and various types of dairy products
- KU10.** types of machineries used for processing each type of product
- KU11.** various machineries used in the organisation
- KU12.** maintenance of each process equipments
- KU13.** supplier/manufacturer instructions related to machineries
- KU14.** handling all processing machineries
- KU15.** basic mathematics
- KU16.** quality parameters, basic food microbiology and quality assessment based on physical parameters
- KU17.** cleaning procedures such as CIP and COP
- KU18.** knowledge on sanitizers and disinfectants and its handling and storing methods
- KU19.** food laws and regulations on product, packaging and labelling
- KU20.** food safety and hygiene
- KU21.** GMP
- KU22.** HACCP

Generic Skills (GS)

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

- GS1.** note the information communicated by the supervisor
- GS2.** note the raw materials used for production and the finished products produced
- GS3.** note the readings of the process parameters and provide necessary information to fill the process chart
- GS4.** note down observations (if any) related to the process
- GS5.** write information documents to internal departments/ internal teams
- GS6.** note down the data for online ERP or as per applicability in the organization
- GS7.** read and interpret the process required for producing various types of products
- GS8.** read and interpret and process flowchart for all products produced
- GS9.** read equipment manuals and process documents to understand the equipments operation and process requirement
- GS10.** read internal information documents sent by internal teams
- GS11.** discuss task lists, schedules and activities with the supervisor
- GS12.** effectively communicate with the team members
- GS13.** question the supervisor in order to understand the nature of the problem and to clarify queries
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the supervisor and cross department teams on the issues faced during process
- GS16.** analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue

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- GS17.** handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
- GS18.** plan and organize the work order and jobs received from the supervisor
- GS19.** organize raw materials and packaging materials required for all products following the instruction provided by the supervisor
- GS20.** plan and prioritize the work based on the instructions received from the supervisor
- GS21.** plan to utilise time and equipment's effectively
- GS22.** organize all process/ equipment manuals so as to access information easily
- GS23.** support the supervisor in scheduling tasks for helper(s)
- GS24.** understand customer requirements and their priority and respond as per their needs
- GS25.** support supervisor in solving problems by detailing out problems
- GS26.** discuss the possible solutions with the supervisor for problem solving
- GS27.** apply domain information about maintenance Processes and technical knowledge about tools and equipment
- GS28.** use common sense and make judgments on day to day basis
- GS29.** use reasoning skills to identify and resolve basic problems
- GS30.** use intuition to detect any potential problems which could arise during operations
- GS31.** use acquired knowledge of the process for identifying and handling issues

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan equipment utilization (for production of various dairy products)</i>	12	18	-	-
PC1. read and understand the production order from the supervisor	2	3	-	-
PC2. ensure working and performance of all machineries required for process	4	6	-	-
PC3. report malfunctions of machine, if any, to the supervisor	2	3	-	-
PC4. calculate the process time for effective utilization of machineries and manpower	2	3	-	-
PC5. allot responsibilities/ work to the assistants and helpers	2	3	-	-
<i>Organize raw material and equipment (for production of various dairy products)</i>	23	47	-	-
PC6. refer process chart/ product flow chart/formulation chart for product(s) produced	2	3	-	-
PC7. check the quality of raw materials by verifying the quality analysis report and assessing its physical parameters	4	6	-	-
PC8. connect pipes between holding tanks and process equipment	5	10	-	-
PC9. assemble fittings, valves, bowls, plates, disks, impeller shaft, and other parts of equipment to prepare for production	5	10	-	-
PC10. start machine and check the working condition and performance of the machine	2	8	-	-
PC11. make minor adjustments and repairs (if required)	3	7	-	-
PC12. keep the tools accessible to attend repairs/faults in case of breakdown	2	3	-	-
NOS Total	35	65	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	FIC/N2006
NOS Name	Prepare for operating dairy process machineries and production of various dairy products
Sector	Food Processing
Sub-Sector	Dairy Products
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2024
Deactivation Date	29/07/2024
NSQC Clearance Date	29/07/2021

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FIC/N2007: Operate dairy processing machineries

Description

This unit is about operating dairy processing machineries to produce various dairy products per the specifications and standards of the organization

Elements and Performance Criteria

Operate dairy processing machines

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

- PC1.** turn valves to pump sterilizing solution and rinse by passing water through pipes to sterilize equipments
- PC2.** start pump to transfer measured volume of milk into the holding tank for storing until processing
- PC3.** set and control metering devices that measure and allow required volume of milk at all stages of processing
- PC4.** open valves to allow milk through filter to remove sediment
- PC5.** adjust controls of the separator and set process parameters like speed to separate cream and skim milk
- PC6.** open valves to allow milk into homogenizer and set controls for required fat level in milk to produce standardized milk
- PC7.** set process parameters like temperature, time etc of the pasteurizer to pasteurize milk and cream
- PC8.** turn valves to admit steam into pipes of the pasteurizer
- PC9.** open valves to allow milk/cream into pasteurizer to pasteurize milk/cream
- PC10.** observe temperature and pressure gauge of the pasteurizer to control and maintain process parameters
- PC11.** set process parameters of the chilling tank like temperature, time
- PC12.** turn valves to circulate refrigerant and pre-cooled water through coils to cool milk
- PC13.** open valves to allow milk into the chilling tank for cooling
- PC14.** pump specified amounts of liquid or powder ingredients like skim milk, starter culture, rennet, stabilizer, neutralizer, flavours etc into milk in milk tanks to make dairy products, such as toned milk, flavoured milk, curd, paneer, ice-cream etc
- PC15.** set and maintain process parameters like temperature, pressure, speed, time etc for various dairy processing equipment to produce milk products
- PC16.** start pump and agitator, observe pressure and temperature gauges, opens valves of dairy processing equipment to fill, stir, and steam/heat milk to produce milk products
- PC17.** check the quality of products produced at various stages of processing through physical parameters, sample products and transfer to quality lab for analysis
- PC18.** set batch code, date code and filling volume of the packaging machines
- PC19.** open valves to allow dairy products into packaging machine for packing
- PC20.** check the weight of packed dairy products for conformance to organisation standards
- PC21.** record time, temperature, pressure and volume readings during each stage of processing

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PC22. report malfunction/discrepancies/concerns to department supervisor for immediate action

Post production cleaning and regular maintenance of equipments

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

PC23. turn valves to pump recommended sterilizing solution and rinse water through pipes for CIP of tanks and processing equipment following SOP

PC24. clean the work area using recommended cleaning agents and sanitizers

PC25. attend minor repairs/faults of all machines (if any)

PC26. ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the sop or suppliers instructions/manuals

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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

KU2. types of products produced by the organisation

KU3. code of business conduct

KU4. dress code to be followed

KU5. job responsibilities/duties and standard operating procedures

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

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

KU8. food safety and hygiene standards followed

KU9. types of raw materials (cow milk, goat milk, buffalo milk etc) and various types of dairy products

KU10. various types of ingredients used for producing various dairy products

KU11. types of machineries used for processing each type of product

KU12. various machineries used in the organisation

KU13. maintenance of each process equipments

KU14. supplier/manufacturer instructions related to machineries

KU15. handling all processing machineries

KU16. process and process parameters for production of various product

KU17. basic mathematics

KU18. quality parameters, basic food microbiology and quality assessment based on physical parameters

KU19. cleaning procedures such as CIP and COP

KU20. knowledge on sanitizers and disinfectants and its handling and storing methods

KU21. food laws and regulations on product, packaging and labelling

KU22. food safety and hygiene

KU23. GMP

KU24. HACCP

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Generic Skills (GS)

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

- GS1.** note the information communicated by the supervisor
- GS2.** note the raw materials used for production and the finished products produced
- GS3.** note the readings of the process parameters and provide necessary information to fill the process chart
- GS4.** note down observations (if any) related to the process
- GS5.** write information documents to internal departments/ internal teams
- GS6.** note down the data for online ERP or as per applicability in the organization
- GS7.** read and interpret the process required for producing various types of products
- GS8.** read and interpret and process flowchart for all products produced
- GS9.** read equipment manuals and process documents to understand the equipments operation and process requirement
- GS10.** read internal information documents sent by internal teams
- GS11.** discuss task lists, schedules and activities with the supervisor
- GS12.** effectively communicate with the team members
- GS13.** question the supervisor in order to understand the nature of the problem and to clarify queries
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the supervisor and cross department teams on the issues faced during process
- GS16.** analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue
- GS17.** handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
- GS18.** plan and organize the work order and jobs received from the supervisor
- GS19.** organize raw materials and packaging materials required for all products following the instruction provided by the supervisor
- GS20.** plan and prioritize the work based on the instructions received from the supervisor
- GS21.** plan to utilise time and equipment's effectively
- GS22.** organize all process/ equipment manuals so as to access information easily
- GS23.** support the supervisor in scheduling tasks for helper(s)
- GS24.** understand customer requirements and their priority and respond as per their needs
- GS25.** support supervisor in solving problems by detailing out problems
- GS26.** discuss the possible solutions with the supervisor for problem solving
- GS27.** apply domain information about maintenance Processes and technical knowledge about tools and equipment
- GS28.** use common sense and make judgments on day to day basis
- GS29.** use reasoning skills to identify and resolve basic problems
- GS30.** use intuition to detect any potential problems which could arise during operations



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

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Operate dairy processing machines</i>	32	58	-	-
PC1. turn valves to pump sterilizing solution and rinse by passing water through pipes to sterilize equipments	1	2	-	-
PC2. start pump to transfer measured volume of milk into the holding tank for storing until processing	1	2	-	-
PC3. set and control metering devices that measure and allow required volume of milk at all stages of processing	1	3	-	-
PC4. open valves to allow milk through filter to remove sediment	1	2	-	-
PC5. adjust controls of the separator and set process parameters like speed to separate cream and skim milk	2	4	-	-
PC6. open valves to allow milk into homogenizer and set controls for required fat level in milk to produce standardized milk	1	2	-	-
PC7. set process parameters like temperature, time etc of the pasteurizer to pasteurize milk and cream	2	4	-	-
PC8. turn valves to admit steam into pipes of the pasteurizer	1	2	-	-
PC9. open valves to allow milk/cream into pasteurizer to pasteurize milk/cream	1	2	-	-
PC10. observe temperature and pressure gauge of the pasteurizer to control and maintain process parameters	2	4	-	-
PC11. set process parameters of the chilling tank like temperature, time	2	4	-	-
PC12. turn valves to circulate refrigerant and pre-cooled water through coils to cool milk	1	2	-	-
PC13. open valves to allow milk into the chilling tank for cooling	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. pump specified amounts of liquid or powder ingredients like skim milk, starter culture, rennet, stabilizer, neutralizer, flavours etc into milk in milk tanks to make dairy products, such as toned milk, flavoured milk, curd, paneer, ice-cream etc	3	4	-	-
PC15. set and maintain process parameters like temperature, pressure, speed, time etc for various dairy processing equipment to produce milk products	3	4	-	-
PC16. start pump and agitator, observe pressure and temperature gauges, opens valves of dairy processing equipment to fill, stir, and steam/heat milk to produce milk products	3	4	-	-
PC17. check the quality of products produced at various stages of processing through physical parameters, sample products and transfer to quality lab for analysis	2	3	-	-
PC18. set batch code, date code and filling volume of the packaging machines	1	2	-	-
PC19. open valves to allow dairy products into packaging machine for packing	0.5	1.5	-	-
PC20. check the weight of packed dairy products for conformance to organisation standards	0.5	1.5	-	-
PC21. record time, temperature, pressure and volume readings during each stage of processing	1	2	-	-
PC22. report malfunction/discrepancies/concerns to department supervisor for immediate action	1	1	-	-
<i>Post production cleaning and regular maintenance of equipments</i>	3	7	-	-
PC23. turn valves to pump recommended sterilizing solution and rinse water through pipes for CIP of tanks and processing equipment following SOP	1	3	-	-
PC24. clean the work area using recommended cleaning agents and sanitizers	0.5	1.5	-	-
PC25. attend minor repairs/faults of all machines (if any)	0.5	1.5	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the sop or suppliers instructions/manuals	1	1	-	-
NOS Total	35	65	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	FIC/N2007
NOS Name	Operate dairy processing machineries
Sector	Food Processing
Sub-Sector	Dairy Products
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2024
Deactivation Date	29/07/2024
NSQ Clearance Date	29/07/2021

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FIC/N2008: Complete documentation and record keeping related to operating of dairy processing equipments

Description

This unit is about documenting and maintaining records of raw materials, production, process and finished products related to operation of dairy processing equipments

Elements and Performance Criteria

Document and maintain records of raw material for operation of dairy processing equipments

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

- PC1.** document and maintain records of raw material processed in the equipments such as type of raw materials, tag details such as supplier details, receiving date/ date of manufacture, expiry date, supplier quality document, quality parameters for all raw materials, internal quality analysis report, storage condition etc, as per company standards
- PC2.** maintain record of observations (if any) related to raw materials
- PC3.** load the raw materials details in ERP for future reference
- PC4.** verify the documents and track from finished product to raw materials, in case of quality concerns and during quality management system audits

Document and maintain records of production schedule and process parameters for operation of dairy processing equipments

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

- PC5.** document production details like the products handled, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment etc
- PC6.** document process details like type or raw material used, process parameters like temperature, time, pressure etc (as applicable) for entire production in process chart or production log for all products produced
- PC7.** document batch size, production yield, and wastage of raw materials, energy utilization and final products produced
- PC8.** maintain record on observations (if any) or deviations related to process and production
- PC9.** load the production and process details in ERP for future reference
- PC10.** verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits

Document and maintain records of finished products for operation of dairy processing equipments

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

- PC11.** document and maintain records on the types of finished products produced
- PC12.** document the finished products details such as name of the product, batch number, time of packing, date of manufacture, date of expiry, other label details, primary, secondary and tertiary packaging materials for all finished products, storage conditions etc, as per organisation standards
- PC13.** maintain record on observations or deviations (if any) related to finished products
- PC14.** load the finished product details in ERP for future reference

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- PC15.** verify the documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** organization standards, process standards and procedures followed in the organisation
- KU2.** types of products produced by the organisation
- KU3.** code of business conduct
- KU4.** dress code to be followed
- KU5.** job responsibilities/duties and standard operating procedures
- KU6.** internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution
- KU7.** provision of wages, working hours and accident compensation as per organisation policy
- KU8.** food safety and hygiene standards followed
- KU9.** documentation system followed in the organization such as production chart, process chart and finished products chart
- KU10.** details to be recorded and maintained on raw materials and finished products
- KU11.** details to be recorded and maintained on production and process parameters
- KU12.** methods to records and maintain records on observations (if any) related to raw materials, process and finished products
- KU13.** methods to track back the record from finished product to raw material
- KU14.** entering the details in erp system followed by the organisation

Generic Skills (GS)

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

- GS1.** note the information communicated by the supervisor
- GS2.** note the raw materials used for production and the finished products produced
- GS3.** note the readings of the process parameters and provide necessary information to fill the process chart
- GS4.** note down observations (if any) related to the process
- GS5.** write information documents to internal departments/ internal teams
- GS6.** note down the data for online ERP or as per applicability in the organization
- GS7.** read and interpret the process required for producing various types of products
- GS8.** read and interpret and process flowchart for all products produced
- GS9.** read equipment manuals and process documents to understand the equipments operation and process requirement
- GS10.** read internal information documents sent by internal teams
- GS11.** discuss task lists, schedules and activities with the supervisor
- GS12.** effectively communicate with the team members

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- GS13.** question the supervisor in order to understand the nature of the problem and to clarify queries
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the supervisor and cross department teams on the issues faced during process
- GS16.** analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue
- GS17.** handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
- GS18.** plan and organize the work order and jobs received from the supervisor
- GS19.** organize raw materials and packaging materials required for all products following the instruction provided by the supervisor
- GS20.** plan and prioritize the work based on the instructions received from the supervisor
- GS21.** plan to utilise time and equipment's effectively
- GS22.** organize all process/ equipment manuals so as to access information easily
- GS23.** support the supervisor in scheduling tasks for helper(s)
- GS24.** understand customer requirements and their priority and respond as per their needs
- GS25.** support supervisor in solving problems by detailing out problems
- GS26.** discuss the possible solutions with the supervisor for problem solving
- GS27.** apply domain information about maintenance Processes and technical knowledge about tools and equipment
- GS28.** use common sense and make judgments on day to day basis
- GS29.** use reasoning skills to identify and resolve basic problems
- GS30.** use intuition to detect any potential problems which could arise during operations
- GS31.** use acquired knowledge of the process for identifying and handling issues

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Document and maintain records of raw material for operation of dairy processing equipments</i>	15	10	-	-
PC1. document and maintain records of raw material processed in the equipments such as type of raw materials, tag details such as supplier details, receiving date/ date of manufacture, expiry date, supplier quality document, quality parameters for all raw materials, internal quality analysis report, storage condition etc, as per company standards	6	4	-	-
PC2. maintain record of observations (if any) related to raw materials	3	2	-	-
PC3. load the raw materials details in ERP for future reference	3	2	-	-
PC4. verify the documents and track from finished product to raw materials, in case of quality concerns and during quality management system audits	3	2	-	-
<i>Document and maintain records of production schedule and process parameters for operation of dairy processing equipments</i>	30	20	-	-
PC5. document production details like the products handled, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment etc	6	4	-	-
PC6. document process details like type or raw material used, process parameters like temperature, time, pressure etc (as applicable) for entire production in process chart or production log for all products produced	9	6	-	-
PC7. document batch size, production yield, and wastage of raw materials, energy utilization and final products produced	6	4	-	-
PC8. maintain record on observations (if any) or deviations related to process and production	3	2	-	-

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

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	FIC/N2008
NOS Name	Complete documentation and record keeping related to operating of dairy processing equipments
Sector	Food Processing
Sub-Sector	Dairy Products
Occupation	Processing
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2024
Deactivation Date	29/07/2024
NSQC Clearance Date	29/07/2021

Qualification Pack

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

Description

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

Elements and Performance Criteria

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

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

- PC1.** comply with food safety and hygiene procedures followed in the organization
- PC2.** ensure personal hygiene by use of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.
- PC3.** ensure hygienic production of food by inspecting raw materials, ingredients, finished products etc. for compliance to physical, chemical and microbiological parameters
- PC4.** pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations
- PC5.** clean, maintain and monitor food processing equipment periodically, using it only for the specified purpose
- PC6.** use safety equipment such as fire extinguisher, eye wash unit, first aid kit when required
- PC7.** follow housekeeping practices by having designated area for machines/tools
- PC8.** follow industry standards like GMP, HACCP and product recall process
- PC9.** attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them
- PC10.** Identify, document and report problems such as rodents and pests to management
- PC11.** conduct workplace checklist audit before and after work to ensure safety and hygiene
- PC12.** document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system

Apply food safety practices (for processing food products)

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

- PC13.** determine the quality of food using criteria such as odour, appearance, taste and best before date, and take immediate measures to prevent spoilage
- PC14.** store raw materials, finished products and allergens separately to prevent cross contamination
- PC15.** label raw materials and finished products and store them in different storage areas according to safe food practices
- PC16.** follow stock rotation based on FEFO/FIFO

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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

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- KU2.** types of products produced by the organisation
- KU3.** code of business conduct
- KU4.** dress code to be followed
- KU5.** job responsibilities/duties and standard operating procedures
- KU6.** internal processes such as procurement, store management, inventory management, quality management and key contact points for query resolution
- KU7.** provision of wages, working hours as per organisation policy
- KU8.** food safety and hygiene standards followed
- KU9.** possible physical, chemical and biological hazards and methods of prevention of various hazards
- KU10.** personal hygiene requirement
- KU11.** different types of sanitizers used for process area, equipment and the procedure to use them
- KU12.** knowledge on food safety standards and regulations (as per fssai)
- KU13.** quality parameters and quality assessment based on physical parameters, basic food microbiology
- KU14.** labelling/marketing requirements for raw materials, finished goods, stored materials, packaging materials and their designated storage area
- KU15.** cleaning and sanitation of equipment and work area
- KU16.** CIP and COP methods and procedures
- KU17.** storage norms for raw materials, packaging material and finished products
- KU18.** stock rotation of ingredients and finished products based on FEFO/FIFO
- KU19.** method of maintaining safety check lists for all machineries
- KU20.** GHP
- KU21.** GMP
- KU22.** HACCP

Generic Skills (GS)

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

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

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- GS11.** discuss task lists, schedules and activities with the supervisor
- GS12.** effectively communicate with the team members
- GS13.** question the supervisor in order to understand the nature of the problem and to clarify queries
- GS14.** attentively listen and comprehend the information given by the speaker
- GS15.** communicate clearly with the supervisor and cross department teams on the issues faced during process
- GS16.** analyse critical points in day to day tasks through experience and observation and identify control measures to solve the issue
- GS17.** handle issues in case the supervisor is not available (as per the authority matrix defined by the organization)
- GS18.** plan and organize the work order and jobs received from the supervisor
- GS19.** organize raw materials and packaging materials required for all products following the instruction provided by the supervisor
- GS20.** plan and prioritize the work based on the instructions received from the supervisor
- GS21.** plan to utilise time and equipment's effectively
- GS22.** organize all process/ equipment manuals so as to access information easily
- GS23.** support the supervisor in scheduling tasks for helper(s)
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- GS25.** support supervisor in solving problems by detailing out problems
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- GS27.** apply domain information about maintenance processes and technical knowledge about tools and equipment
- GS28.** use common sense and make judgments on day to day basis
- GS29.** use reasoning skills to identify and resolve basic problems
- GS30.** use intuition to detect any potential problems which could arise during operations
- GS31.** use acquired knowledge of the process for identifying and handling issues

Qualification Pack

Assessment Criteria

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

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

Qualification Pack

National Occupational Standards (NOS) Parameters

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

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

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

Minimum Aggregate Passing % at QP Level : 70

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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FIC/N2005.Prepare and maintain work area and process machineries for operating dairy processing equipments	35	65	-	-	100	15
FIC/N2006.Prepare for operating dairy process machineries and production of various dairy products	35	65	-	-	100	20
FIC/N2007.Operate dairy processing machineries	35	65	-	-	100	25
FIC/N2008.Complete documentation and record keeping related to operating of dairy processing equipments	60	40	-	-	100	15
FIC/N9001.Ensure food safety, hygiene and sanitation for processing food products	35	65	-	-	100	25
Total	200	300	-	-	500	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
CIP	Clean In Place
COP	Clean Out Of Place
ERP	Enterprise Resource Planning
FIFO	First In First Out
FEFO	First Expiry First Out
FSSAI	Food Safety and Standards Authority of India
GMP	Good Manufacturing Practices
GHP	Good Hygiene Practices
HACCP	Hazard Analysis and Critical Control Point

Qualification Pack

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)	<p>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.</p>
Organisational Context	<p>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.</p>
Technical Knowledge	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
Core Skills/ Generic Skills (GS)	<p>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.</p>
Electives	<p>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.</p>
Options	<p>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.</p>