



QUALIFICATION FILE

Bulk Milk Cooler Operator

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☒ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 4

Submitted By:

Agriculture Skill Council of India

Unit No. 101, First Floor, Greenwoods Plaza, Block 'B', Greenwoods City, Sector 45, Gurugram -122009, Haryana.

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Section 1: Basic Details

1.	Qualification Name	Bulk Milk Cooler Operator																
2.	Sector/s	Agriculture																
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing qualification: QG-04-AG-00318-2023-V1.1-ASCI	Qualification Name of existing/previous version: Bulk Milk Cooler operator															
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA																
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-04-AG-03907-2025-V2-ASCI & version 2	6. NCrf/NSQF Level: 4															
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																
8.	Brief Description of the Qualification	A Bulk Milk Cooler (BMC) Operator is responsible for operating a large storage tank used for cooling and holding milk at a certain temperature until it can be picked up by a milk hauler.																
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12th grade pass or equivalent</td> <td></td> </tr> <tr> <td>2</td> <td>10 grade pass</td> <td>3 years of relevant experience in agriculture and allied fields</td> </tr> <tr> <td>3</td> <td>Previous NSQF level 3.5</td> <td>1.5 years of relevant experience in agriculture and allied fields</td> </tr> <tr> <td>4</td> <td>Previous NSQF level 3</td> <td>3 years of relevant experience in agriculture and allied fields</td> </tr> </tbody> </table> b. Age: 18 years		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	12 th grade pass or equivalent		2	10 grade pass	3 years of relevant experience in agriculture and allied fields	3	Previous NSQF level 3.5	1.5 years of relevant experience in agriculture and allied fields	4	Previous NSQF level 3	3 years of relevant experience in agriculture and allied fields
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																
1	12 th grade pass or equivalent																	
2	10 grade pass	3 years of relevant experience in agriculture and allied fields																
3	Previous NSQF level 3.5	1.5 years of relevant experience in agriculture and allied fields																
4	Previous NSQF level 3	3 years of relevant experience in agriculture and allied fields																
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrf))	13	11. Common Cost Norm Category (I/II/III) (wherever applicable): I															
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA																

13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	☒ Offline ☐ Online ☐ Blended					
		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
		Classroom (offline)	150	150	90		390
		Online					
		(Refer Blended Learning Annexure for details)					
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/8341.0200					
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	Milk Procurement & Input Supervisor(L5)					
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi					
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:					
18.	Is the Job Role Amenable to Persons with Disability	☒ Yes ☐ No If “Yes”, specify applicable type of Disability: <i>SHI</i>					
19.	How Participation of Women will be Encouraged	Batches specific to women will be formed					
20.	Are Greening/ Environment Sustainability Aspects Covered (<i>Specify the NOS/Module which covers it</i>)	☒ Yes ☐ No DGT/VSQ/N0102 (v1.0)					
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No					
22.	Name and Contact Details of Submitting / Awarding Body SPOC (<i>In case of CS or MS, provide details of both Lead AB & Supporting ABs</i>)	Name: Ms Purnambica K Email: standards@asci-india.com Website: www.asci-india.com Contact No.: 0124-4670029					
23.	Final Approval Date by NSQC: 06-06-2025	24. Validity Duration: 3 years post NSQC Approval			25. Next Review Date: 30-04-2028		

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1	Prepare and maintain work area and process machineries for operating Bulk Milk Cooler (BMC)	AGR/N4215 (v3.0)	Core	4	2	25	35			60	34	36	0	30	100	20
2	Prepare for Operating Bulk Milk Cooler (BMC)	AGR/N4216 (v3.0)	Core	4	1	10	20			30	31	38	0	31	100	20
3	Operate Bulk Milk Cooler (BMC) and Ensure Cleaning and Maintenance Post-cooling	AGR/N4217 (v3.0)	Core	4	2	20	40			60	34	37	0	29	100	25
4	Complete Documentation and Record-keeping Related to Operating of Bulk Milk Cooler (BMC)	AGR/N4218 (v3.0)	Core	4	2	20	40			60	39	36	0	25	100	15
5	Ensure Safety, Hygiene and Sanitation for Cooling Milk in BMC	AGR/N4219 (v3.0)	Non-Core	4	1	15	15			30	42	33	0	25	100	15
6	Employability Skills (60 Hours)	DGT/VSQ/N 0102 (v1.0)	Non-Core	4	2	60				60	20	30	0	-	50	5
7	OJT (Mandatory)	NA	NA	NA	3			90		90						
Duration (in Hours) / Total Marks						13	150	150	90	390	200	210	0	140	550	100

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: _____ % (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma (Veterinary/Animal Husbandry/Dairying) with 5 years of relevant industry experience in Bulk Milk Cooler (BMC) Operation* *Regular Diploma more than 15 months in veterinary/Animal Husbandry/ Dairying OR Graduate (Science with) 2 years of relevant industry experience in Bulk Milk Cooler (BMC) Operation** **For the school program minimum qualification of the trainer should be Graduate (Agriculture/Zoology/ Dairy) with minimum 3 years teaching experience (will be considered industry experience) OR Graduate (Dairy Science/ Dairy Technology)
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	5 years of training experience after Graduation (Science with) 2 years of relevant industry experience in Bulk Milk Cooler (BMC) Operation OR 5 years of training experience after Graduation (Dairy Science/ Dairy Technology)
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.V.Sc with 4 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR
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		B.Tech (Dairy or related streams) with 4 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR Graduation (Animal sciences/Dairy science/Dairy technology) with 5 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR M.V.Sc with 2 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR Post graduation (Animal science/Dairy science/Dairy technology) with 2 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR PhD (Animal science/Dairy science/Dairy technology) with 1 year of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams
	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma/Graduate (It is mandatory for a proctor to have technical knowledge/IT knowledge Once a proctor has been on-boarded by any AA, they are oriented about skill ecosystem along with do's and don'ts.)
	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	M.V.Sc with 10 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams OR Post graduation (Animal science/Dairy science/Dairy technology) with 10 years of relevant industry experience In Dairy Science/Animal Science/Veterinary Science or related streams
	Assessment Mode (Specify the assessment mode)	Offline
	Tools and Equipment Required for Assessment	☒ Same as for training ☒ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): No
3.	Government /Industry initiatives/ requirement (Yes/No): No
4.	Number of Industry validation provided: 10
5.	Estimated nos. of persons to be trained and employed: 2000

6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Awaited, Letter sent on 05 January 2025 to AS MoAFW and reminder sent on 16 Jan 2025
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Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	Annexure-1
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Annexure-2
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Annexure-5
4.	Annexure: Assessment Strategy (Mandatory)	Annexure-6
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")	NA
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	NA
7.	Annexure: Acronym and Glossary (Optional)	
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Annexure-7
9.	Supporting Document: Career Progression (Mandatory - Public view)	Bulk Milk cooler operator (L4), Milk Procurement & Input Supervisor(L5)
10.	Supporting Document: Occupational Map (Mandatory)	Annexure-8
11.	Supporting Document: Assessment SOP (Mandatory)	Annexure-9
12.	Any other document you wish to submit:	

Annexure 1: Evidence of Level

NSQF Domain	NSQF Domain	NSQF Domain	NCrf/NSQF Level
Process	Operate Chilling System	The BMC operator is responsible for preparing work area for	4

	● Repair and maintenance of Chilling system ● Monitoring of Chilling System	hygiene and safety, and ensuring performance, efficiency and maintenance of process machineries and tools, for operating Bulk Milk Cooler (BMC). The individual is responsible for preparation for cooling of milk through planning equipment utilization and organizing procured milk and equipment	
Professional knowledge	● Principles and processes in organization standards ● Product Classification ● Food safety and hygiene standards	The BMC operator is responsible for operating Bulk Milk Cooler (BMC) to cool the procured milk. The individual is also responsible for post-cooling cleaning and maintenance as per the specifications and standards of the organization	4
Professional skill	● Analyse critical points ● Identify control measures ● Plan & Manage Work Order ● Maintain clean and safe workplace ● Utilization of Resources	The BMC Operator is responsible for documenting and maintaining records of procured milk, cooling process and final chilled milk, related to operation of Bulk Milk Cooler (BMC) The Individual shall maintain safety, hygiene and sanitation in work area and cooling unit for processing procured milk Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts	4
Core Skills	● Analyze critical points Pack the produce ● Organize procured Milk ● Plan & Prioritize work ● Manage the deliveries	The BMC Operator Should Plan equipment's utilization and organize procured milk and equipment's, Operate Bulk Milk Cooler and ensure cleaning and maintenance post cooling: Operation process of Bulk Milk Cooler, follow Procedure to clean and maintain equipment's post cooling. The individual should Maintain documentation and record keeping related to operation of Bulk Milk Cooler: The individual on the job should understand Basics of computer and ERP	4
Responsibility	● Write information documents ● Note down the data ● Standard operating procedures for testing milk ● Lab equipment's operation	Bulk Milk Cooler (BMC) Operator must have 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	4

Annexure 2: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Lactometer	Nos	1
2	PPEs	Set	1
3	Chemicals	Milliliters/ Liters	1
4	Fat Testing Centrifugal machine	Nos	1
5	Fat and SNF analyser	Nos	1
6	Kit for testing adulteration	Nos	1
7	Video Recording Equipment	Nos	1

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Markers

Annexure 3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Centre for Microfinance	Amit Kumar	Head	Jaipur, Rajasthan		amit.kumar@cmfraj.org	
2	QBOID IOTECH Pvt Ltd	Mr. Utkarsh Kapoor	Chief Executive Officer	Gurugram	8130215577	utkarsh@quboid.io	
3	Jordbrukare India Pvt Ltd	Dr. Simrandeep Singh	Coordinator Research			simrandeep.singh@jordbrukare.com	
4	Amar Singh College	Sanjay Kumar Gupta	Dean Department of Agriculture	Bulandshahr		ascollegelkt@gmail.com	
5	Post-Graduation Department of Agriculture	Dr. Randeep Kaur and Dr. Lavleen Kaur	Associate Professor and Assistant Professor	Amritsar	9915305271	lavleenkaur@khalsacollege.edu.in	

6	Aplo College of Veterinary Medicine	Dr. Charan Singh Sharma	Dean Department of Agriculture	Jaipur		apollovetjaipur@gmail.com	
7	Vanita Milk & Farming Producer Company Limited	Mr. Sunil Yadav	Chief Executive Officer			sky9799661409@gmail.com	
8	GeoFlow AI	Mr. Nitish	Chief Executive Officer			business@genflowai.com	
9	Anajori Development Society	Maitur Rahman	President			anajoridevelopmentsociety@gmail.com	
10	Centre for Agricultural Advancement and Futuristic Environment (CAAFE)	Sumit Srivastava	General Manager	New Delhi	9889990102	info@caafe.in	

Annexure 4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training PC.	Estimated Employment Opportunities	Estimated Training PC.	Estimated Employment Opportunities	Estimated Training PC.	Estimated Employment Opportunities
2025-26	500	0	100	0	0	0
2026-27	500	0	100	0	0	0
2027-28	1000	0	100	0	0	0

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
3.0	2024-25	0	0	0	0	0	0	0	0	0	0	0	0
3.0	2023-24	0	0	0	0	0	0	0	0	0	0	0	0
3.0	2022-23	200	174	158	0	43	36	34	0	0	0	0	0

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. PMKVY

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available: Hindi and English

Annexure 5: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

AGR/N4215: Prepare and maintain work area and process machineries for operating Bulk Milk Cooler (BMC)	<i>Prepare and maintain work area (for operating Bulk Milk Cooler)</i>	8	8		8
	PC1. clean and maintain the work area using sanitizers and keep it free from dust, waste, flies and pests				
	PC2. dispose waste materials as per organisation standards and industry requirements				
	<i>Prepare and maintain process machineries and tools (for operating Bulk Milk Cooler)</i>	26	28		22
	PC3. check the working and performance of all machinery and equipment used for the process such as agitator, inlet, manhole, air vent, outlet, milk pump, line filter, DG set, etc.				
	PC4. clean the machinery, pipelines, and tools used with recommended sanitizers following specifications and organization standards				
	PC5. check regularly to ensure that there is no leakage of refrigerant from any part of the BMC				
	PC6. organize the necessary tools and equipment required for the process				
	PC7. perform minor repairs/faults of all machines, if required				
	PC8. maintain a repair checklist with details such as fault description, date of repair, tools used, and parts replaced				
	PC9. select and set the machines and tools required, i.e weigh scale calibration, milk tester calibration, Load cells, servo stabilizer etc..				
	PC10. ensure the availability of hot water for cleaning and also hot water generating system is in good working order				
	NOS Total	34	36		30
	<i>Plan Equipment Utilization (for operating Bulk Milk Cooler)</i>	12	13		11
AGR/N4216: Prepare for Operating Bulk Milk Cooler (BMC)	PC1. ensure working and performance of all machinery required for the process				
	PC2. report malfunctions of the machine, if any, to the supervisor				

	PC3. Take the recommended precautions before starting the BMC every day.				
	PC4. calculate the process time for effective utilization of machinery and manpower				
	PC5. assign responsibilities/work to the assistants and helpers				
	<i>Organize procured milk and equipment (for operating Bulk Milk Cooler)</i>	19	25		20
	PC6. illustrate process chart/product flow chart/handling milk				
	PC7. check the quality of procured milk by verifying the quality analysis report from the milk tester and assessing its physical parameters				
	PC8. pre-cool the milk by passing it through the plate cooler/plate heat exchanger by connecting the inlet of the pre-cooler with the outlet of the hauling tank				
	PC9. follow the checklist for proper pre-cooling of the milk - connect the water and milk flow pipes in opposite directions, fit filter on milk line before plate cooler, fit filter on water line if needed.				
	PC10. check regularly whether the inlet and outlet valves are tightly closed and ensuring there is no leakage				
	PC11. connect pipes from the pre-cooler/ dump tank to the inlet of the BMC				
	PC12. start the machine and check the working condition and performance of the machine				
	PC13. practice minor adjustments and repairs (if required)				
	PC14. keep the tools accessible to attend repairs/faults in case of breakdown				
	PC15. keep records of calibrations and observations				
	PC16. ensure that valve of dump tank is open while loading milk in the tanker				

	PC17. follow proper procedure for measurement of milk in the BMC tank using dip stick and conversion table, ensuring that horizontal level of the tank is not disturbed.				
	PC18. ensure that agitator is in ON position when the BMC tank contains milk				
	NOS Total	31	38		31
AGR/N4217: Operate Bulk Milk Cooler (BMC) and Ensure Cleaning and Maintenance Post-cooling	<i>Operate Bulk Milk Cooler (BMC)</i>	<i>20</i>	<i>19</i>		<i>15</i>
	PC1. inspect the condition of the insulating material between the internal and external cover of the cooling tank				
	PC2. follow SOP to obtain a sample of the milk from the incoming batch of milk				
	PC3. ensure that the temperature of chilling i.e., 4 degrees C has been attained before milk is loaded in a road milk tanker				
	PC4. ensure that there is no over-agitation of milk				
	PC5. monitor the volumetric meter provided on the side of the BMC				
	PC6. use the thermostat at the specific temperature in case of a direct expansion cooler is used				
	PC7. set process parameters of the cooling tank like temperature, time, etc.				
	PC8. monitor the digital thermometer provided on the cooler to check the internal temperature of the milk in the cooler				
	PC9. adjust the thermostat in case the temperature inside the cooling tank is not at the specified temperature				
	PC10. open outlet valves to allow chilled milk to enter the storage for further processing				
	PC11. disconnect the hose from the outlet valve and				

	cap the hose, when the milk has been removed from the bulk tank				
	PC12. check the volume of the chilled milk after its temperature has been lowered to the recommended temperature				
	PC13. conduct periodic manual scrubbing following a standard procedure to remove scaling and ensure cleaning of dents and corners				
	<i>Post operation maintenance of BMC equipment</i>	14	18		14
	PC14. practice CIP of the tank, pipelines, Pump, filter, etc. as per standard procedure using cleaning agents with the required strength				
	PC15. clean the exterior of the milk cooler using recommended cleaning agents and sanitizers				
	PC16. check the condition of condensing unit regularly				
	PC17. clean the condensing unit regularly and straighten the fins if found dented or pressed against each other				
	PC18. check occasionally that condenser fans are running				
	PC19. check agitator and intermittent agitation				
	PC20. check the tank for excessive buttering and/or foaming				
	PC21. use bright light to check the condition inside the cooling tank				
	PC22. attend minor repairs/faults of all machines (if any)				
	PC23. ensure periodic preventive maintenance (daily/weekly/monthly/quarterly/half-yearly/annual) of				

	all machines and equipment following the SOP or supplier's instructions/manuals				
	PC24. ensure that there is free flow of fresh air in the BMC premises so that ambient temperature does not rise due to stagnant air.				
	NOS Total	34	37		29
AGR/N4218: Complete Documentation and Record-keeping Related to Operating of Bulk Milk Cooler (BMC)	<i>Document and maintain records of procured milk</i>	12	12		8
	PC1. document and maintain records of procured milk, from the catchment area				
	PC2. maintain a record of observations (if any) related to procured milk				
	PC3. . load the procured milk details in ERP for accounting and • reference				
	PC4. verify the documents and track from finished product to procured milk, in case of quality concerns and during quality management system audits				
	<i>Document and maintain records of cooling process and process parameters</i>	12	11		7
	PC5. process document with details like the type of process handled, process sequence, equipment and machinery details, efficiency and capacity utilization of equipment, etc.				
	PC6. document batch size, yield and wastage of procured milk, energy utilization				
	PC7. maintain a record of observations (if any) or deviations related to process and production				
	PC8. load the production and process details in ERP for future reference				
	PC9. verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits				
	<i>Document and maintain records of chilled milk</i>	15	13		10
	PC10. document the finished/cooled milk details such as catchment area, batch number, time of cooling, date of procurement and processing,				

	storage conditions, etc., as per organization standards				
	PC11. maintain record on observations or deviations (if any) related to finished products				
	PC12. load the finished product details in ERP for future reference				
	PC13. verify the documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits				
	PC14. calculate the balance of fat and SNF between procured and dispatched milk				
	NOS Total	39	36		25
AGR/N4219: Ensure Safety, Hygiene and Sanitation for Cooling Milk in BMC	<i>Ensure hygiene and sanitation related functions (for cooling milk in BMC)</i>	<i>30</i>	<i>23</i>		<i>18</i>
	PC1. comply with sanitation and hygiene procedures followed in the organization				
	PC2. ensure personal hygiene by use of gloves, hairnets, masks, earplugs, goggles, safety shoes, uniform, etc.				
	PC3. ensure hygienic production by inspecting procured raw milk for compliance to physical, chemical and microbiological parameters				
	PC4. follow housekeeping practices by having a designated area for materials/tools				
	PC5. understand types of hazards such as physical, chemical and biological hazards				
	PC6. identify, document and report problems such as rodents, birds, cats, dogs and pests to management				
	PC7. conduct workplace checklist audits before and after work to ensure sanitation and hygiene				
	<i>Ensure safety practices (for cooling milk in BMC)</i>	<i>12</i>	<i>10</i>		<i>7</i>
	PC8. comply with safety procedures followed in the				

	organization				
	PC9. practice safe storage of procured and chilled milk separately to prevent cross-contamination				
	PC10. label procured milk and store them in designated storage areas/silos according to safe food practices for maintaining First-In-First-Out (FIFO)/first-expired first-out (FEFO) system				
	PC11. Follow dos and don'ts for serve stabiliser, BMC equipment, DG set, Water heating system, Load cells				
	NOS Total	42	33		25
DGT/VSQ/N0102: Employability Skills (60 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1.identify employability skills required for jobs in various industries	-	-	-	-
	PC2. identify and explore learning and employability portals	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
	PC4. follow environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
	PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
	PC6. practice the 21st Century Skills such as Self- Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
	<i>Basic English Skills</i>	2	3	-	-
	PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28.follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. Mcreate a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-

	NOS Total	20	30		
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Annexure 6: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empanelled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions : To assess basic knowledge (Objective/Subjective)
2. Viva : To assess awareness on processes (Oral and/or written questioning)
3. Practical : To evaluate skills and identify competencies.(Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real time' internet based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on ground through qualified and ToA certified assessors.

While it is important that an individual has adequate knowledge and skills to perform a specific task, weight age for different aspects for assessment are given as follows:

Multiple Choice Questions: 20%-30%, depending on the specific QP

Viva: 20%

Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)

Assessment will be carried out by certified assessors through empanelled assessment partners. Based on the results of assessment; ASCI will certify the learners/candidates

2. Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of Internet.

- Multilingual assessments (ASCI is conducting assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback stored digitally on cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle-screen/copy-paste disabled, etc.
- Android based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention
- Assessment will normally be fixed for a day after the end date of training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- Room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practical will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple choice questions, pictorial question, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on same day. In case of more number of candidates, number of assessors and venue facilitation be increased and facilitated

Assessment			
Assessment Type	Formative or Summative	Strategies	Examples
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling job situation

The question paper pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

3. Assessment Quality Assurance framework

Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi- dimensional evaluation of candidates covering language, cognitive skills, behavioral traits and domain knowledge.

Theoretical Knowledge - Item constructs and types are determined by theoretical understanding of the testing objectives and published research about the item-types and constructs that have shown statistical validity towards measuring the construct. Test item types which have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of testing objectives of each question and other quality measures.

Type – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation based questions.

Practical Skills - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

Type – Standardized rubrics for evaluation against set of tasks in a demo/practical task

Viva Voce - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

Type – Procedural questions, do's and don'ts, subjective questions to check understanding of practical tasks.

Assessor has to go through orientation program organized by Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. Assessor shall be given a NOS and PC level overview of each QP as applicable. Overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework which will maintain standardization of marking scheme.

4. Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidences collected by AAs and ASCI are:

- Geo Tagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidences (photos and videos) to the assessor one day prior to the assessment. List is mentioned below:
 - Signed Attendance sheet
 - Assessor feedback sheet

- Candidate feedback sheet
- Assessment checklist for assessor
- Candidate Aadhar/ID card verification
- Pictures of classroom, labs to check the availability of adequate equipment's and tool to conduct the training and assessment
- Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, Technical assistant popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
- To validate their work on the day of assessment, regular calls and video calls are done.
- On-boarding and training of assessor and proctor is done on timely basis to ensure that quality of the assessment should be maintained.
- Training covers the understanding of QP, NSQF level, NOS and assessment structure

5. **Methods of Validation**

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical spoc event status. Assessor/Technical spoc are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical spoc/assessor so as to keep check on assessment quality and ensure assessment is carried out in fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure event is over by what time and the documentation is done in proper manner or not.
- TP Calling: To keep check on malpractice activity, independent audit team calls to TP on recorded line to take confirmation if there was any malpractice activity observed in assessment on part of AA/SSC team. If calls are not connected, email is send to TP Spoc for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on real time basis and highlights any issue like, Students sitting idle/trainer allowed for helping out candidates during assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and do surprise audit for assessment process carried out by ground team.
- Geo Tagging: On day of assessment, each technical spoc is required to login in our internal app which is Geo tagged. Any deviation with centre address needs to be highlighted to assessment team on real-time basis.

Method for assessment documentation, archiving, and Access:

- ASCI has fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks forms the basis of the results and encrypted files generated to avoid data manipulation. All responses captured and stored in System with Time-Stamped at the end of AAs and SSC. NOS-wise and PC-wise scores can be generated.
- Maker Checker concept: 1 person prepares results and other audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All soft copy of documents is received from the on-ground tech team over mail. The same are downloaded by our internal backend team and saved in Repository. The repository consists of scheme wise folders. These scheme wise folders have job role specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in storeroom.

- **Result Review & Recheck Mechanism –**
- Time stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidate shall be stored and available for review (retained for 5 years/ till conclusion of project or scheme)

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf