



QUALIFICATION FILE

Mushroom Grower

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	Mushroom Grower																
2.	Sector/s	Agriculture																
3.	Type of Qualification: <input type="checkbox"/> New <input checked="" type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	NQR Code & version of existing qualification: 2022/AGR/ASCI/06548 & 3.0	Qualification Name of existing/previous version: Mushroom Grower (Small Entrepreneur)															
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-03235-2024-V2-ASCI	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 Mushroom Grower performs various activities in the process of cultivating mushroom such as preparing mushroom compost, spawning, maintenance, harvesting and post-harvest processing of mushroom.																
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1" style="margin-left: 20px;"> <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 or equivalent</td> <td></td> </tr> <tr> <td>2</td> <td>10th or equivalent</td> <td>3 years of relevant experience in Agriculture and allied sectors</td> </tr> <tr> <td>3</td> <td>Previous NSQF level 3.5</td> <td>1.5 years of relevant experience in Agriculture and allied sectors</td> </tr> <tr> <td>4</td> <td>Previous NSQF level 3.0</td> <td>3 years of relevant experience in Agriculture and allied sectors</td> </tr> </tbody> </table> b. Age: 18		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	12th or equivalent		2	10th or equivalent	3 years of relevant experience in Agriculture and allied sectors	3	Previous NSQF level 3.5	1.5 years of relevant experience in Agriculture and allied sectors	4	Previous NSQF level 3.0	3 years of relevant experience in Agriculture and allied sectors
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3	Previous NSQF level 3.5	1.5 years of relevant experience in Agriculture and allied sectors																
4	Previous NSQF level 3.0	3 years of relevant experience in Agriculture and allied sectors																
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): II															

12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA																						
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>150</td> <td>210</td> <td>30</td> <td></td> <td>390</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details)					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	150	210	30		390	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	150	210	30		390																			
Online																								
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/6113.0602																						
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Mushroom Grower (L4), Agri-produce retailer/trader (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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:																						
18.	Is the Job Role Amenable to Persons with Disability	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "Yes", specify applicable type of Disability: SHI																						
19.	How Participation of Women will be Encouraged	Batches specific to women will be formed																						
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No DGT/VSQ/N0101 (v1.0)																						
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						
22.	Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	Name: Mr Srikanth Pampana Email: standards@asci-india.com Website: www.asci-india.com Contact No.: 0124-4670029																						
23.	Final Approval Date by NSQC: 22-10-2024	24. Validity Duration: 3 years post NSQC Approval		25. Next Review Date: 22-10-2027																				

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 Pasteurise mushroom compost	AGR/N7813 (v4.0)	Core	4	2	25	35			60	30	40		30	100	25	
2	Procure mushroom spawn and prepare the site for cultivation	AGR/N7814 (v4.0)	Core	4	2	20	40			60	30	40		30	100	25	
3	carry out mushroom cultivation	AGR/N7815 (v3.0)	Core	4	3	25	65			90	30	40		30	100	15	
4	Maintain, harvest and process mushroom	AGR/N7816 (v4.0)	Core	4	2	20	40			60	30	40		30	100	20	
5	Undertake basic entrepreneurial activities for small Enterprise	AGR/9908 (v3.0)	Non-Core	4	1	15	15			30	30	40		30	100	5	
6	Maintain health and safety at the workplace	AGR/N9903 (v4.0)	Non-Core	4	1	15	15			30	40	25		35	100	5	
7	Employability Skills (30 Hours)	DGT/VSQ/N 0101 (v1.0)	Non-Core	4	1	30				30	20	30			50	5	
8	OJT							30		30							
Duration (in Hours) / Total Marks						13	150	210	30		390	210	255		185	650	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)	10th Class with 7 years of relevant industry or training experience in Mushroom Cultivation* *Experience certificate issued by BDO/ Agriculture Officer/ Government Organizations/ NGO/ Gram Panchayat/ Corporates on official letterhead. OR 12th Class with 6 years of relevant industry or training experience in Mushroom Cultivation OR Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/Pension** **SSC would consider a relaxation/waiver of sector-specific experience on case-to-case basis. OR Diploma in Agriculture with 3 years relevant industry or training experience in Mushroom Cultivation OR Any Graduate except Agriculture / Horticulture / Botany/Forestry with 3 years relevant industry or training experience in Mushroom Cultivation *** ***For the School Program minimum qualification of the Trainer should be Graduate. Their Teaching experience will be considered industry experience. OR B.Sc. (Agriculture/ Horticulture/ Botany/ Forestry) with 0.5 years relevant industry experience in Mushroom Cultivation OR Post Graduate in Agriculture / Horticulture/ Forestry/ Pathology
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	5 years of training experience in Mushroom Cultivation after Graduation in (Agriculture/ Forestry/ Horticulture and related experiences) with 5 years relevant industry experience in Mushroom Cultivation OR 5 years of training experience in Mushroom Cultivation after Post Graduation in Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology/ related fields with 2 years relevant industry experience in Mushroom Cultivation OR

		5 years of training experience in Mushroom Cultivation after PhD in Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology/ related fields with 1 year of industry experience in Mushroom Cultivation
3.	Tools and Equipment Required for Training	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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

1.	Assessor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Graduation in Agriculture/ Forestry/ Horticulture and related fields with 5 years of relevant industry experience in Mushroom Cultivation OR Post Graduation in Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related fields with 2 years of relevant industry experience in Mushroom Cultivation OR PhD in Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related fields with 1 year of relevant industry experience in Mushroom Cultivation
2.	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 .)
3.	Lead Assessor’s/Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Post Graduation in Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related fields with 10 years of relevant industry experience in Mushroom Cultivation OR PhD (Agriculture/ Forestry/ Horticulture/ Pathology/ Mycology and related experiences) with 10 years of relevant industry experience in Mushroom Cultivation
4.	Assessment Mode (Specify the assessment mode)	Offline
5.	Tools and Equipment Required for Assessment	<input checked="" type="checkbox"/> Same as for training <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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): Government Initiative, part of PMKVY 4.0
4.	Number of Industry validation provided: 17
5.	Estimated nos. of persons to be trained and employed: 10000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes

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)	Agri-produce retailer/trader (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

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	<ul style="list-style-type: none"> • Arrange various materials to prepare mushroom compost • Prepare and pasteurise the mushroom compost • Prepare and apply casing soil • Procure the inputs for mushroom cultivation 	A Mushroom Grower performs various activities in the process of cultivating mushroom such as preparing mushroom compost, spawning, maintenance, harvesting and post-harvest processing of mushroom.	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	<ul style="list-style-type: none"> • Mentor apprentice • Promote inclusion at the workplace • Administer appropriate emergency procedures • Maintain personal hygiene • Maintain clean and safe workplace 	The user/individual on the job needs to know and understand the code of business conduct , job responsibilities and duties, standard training tools and procedures and organization methods for pre demonstration check-ups.	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	<ul style="list-style-type: none"> • Carry out repair and maintenance • Store, pack and transport mushroom • Practice inclusion at the workplace • Effective communication at the workplace 	The Job holder should have professional skills including: Decision making, Planning and, organizing, Customer centricity, Problem solving, Analytical Thinking, Critical thinking.	4
Broad Learning Outcomes/Core Skill	<ul style="list-style-type: none"> • Prepare the site for mushroom cultivation • Maintain the mushroom's optimum growth • Maintain clean and safe workplace • Optimise resource utilisation • Perform waste management 	The job holder must have Core Skills which will include: Writing Skills, Reading Skills, Oral and Communication (Listening and Speaking).	4

Responsibility	<ul style="list-style-type: none"> • The user/individual must know and understand how to identify and study the different parts of a tractor • identify tools and measuring instruments required • carry out routine maintenance of tractor, perform fluid and lubricant checks, check the working of all gauges • dismantle engine parts and check their working, assess the wear and tear of engine components • check the working and performance of transmission system, check the working and performance of hydraulics system • check the working and performance of auto-electrical system, clean and lubricate the parts, assemble parts • perform pre start checks, maintain a clean and efficient workplace • render appropriate emergency procedures. 	<ul style="list-style-type: none"> • A Mushroom Grower(Entrepreneur) performs various activities in the process of cultivating mushroom such as preparing mushroom compost, spawning, maintenance, harvesting and post-harvest processing of mushroom. 	4
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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	water sprayer	nos	1
2	Magnesium sulphate	Kg	10
3	Calcium carbonate	Kg	10
4	Video Recording Equipment	Nos	1
5	Rubber gloves	Pair	10
6	gypsum	Kg	10
7	Pot/ Metal barrel	nos	2
8	Calcium sulfate	Kg	10
9	Urea	Kg	10
10	Mycelium (spawn or mushroom seeds)	Kg	1

11	compost in-gredients: straw (wheat, rye, barley), nut shells/Egg Shells, Dry Leaves, cotton wastes/coffee grounds/ corn (corncoobs, cornstalks)	Kg	10
12	woody materials (chips, sawdust, etc),	Kg	10
13	customized column shape plastic bags	nos	30

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	Krishi Vigyan Kendra, Rewa	Dr A K Pandey		Rewa, Jabalpur, MP	9977879360	kvk-rewa@rediffmail.com	
2	Krishi Vigyan Kendra, Durgapur	Dr K P Singh	Senior Scientist and Head	Durgapur, Amaravati	9637717818	pckvkda@gmail.com	
3	College of Fisheries, CAU	Prof. Arun Bhai Patel	Dean	Lembucherra, Tripura-799210,	6033158155	cofcdu.agt-tr@gov.in	
4	Ambrosia Natural Products India Pvt Ltd	Jaidev Singh	Director	Baghpat	9810268758	jaidev@anphoney.com	

5	CSTF (Indo Israel Project), Department of Horticulture	Dr SK Yadav	DY Director Horticulture	Ladwa, Kurukshetra, Haryana	9466147011	cstfladwa@gmail.com	
6	KVK, Madhubani	Dr S K Gangwar	Sr Scientist & Head	Samastipur, Bihar	6287797165	head.kvk.sukhet@rpcau.ac.in	
7	Eco Fast Agri Solutions	Shivendra Pratap Rathore	Founder & CEO	Muzaffarpur, Bihar	9887720651	ecofastagrisolution@gmail.com	
8	Department of Agriculture, Khalsa College Amritsar	Dr Randeep Kaur and Dr Lavleen Kaur	Associate Professor and Assistant Professor	Amritsar	9915305271	lavleenkaur@khalsacollege.edu.in	
9	KVK- ICAR-CRIDA	Dr Chandrakant M.H.	Senior Scientist cum Head	Hayathnagar, Hyderabad	9821265019	kvk.crida@icar.gov.in	
10	KVK Namthang	Indra Prasad Shivaroti	Senior Scientist and Head	Namthang, Namchi	7430832200	kvknamthang@gmail.com	
11	HORTICULTURE TRAINING INSTITUTES UCHANI, KARNAL	Dr Joginder Singh	Joint Director Horticulture cum Principal	HTI, Karnal	9416057077	htiharyana@gmail.com	
12	Khan Mushroom Farm & Training Centre	Yousuf Khan	Proprietor	Nangal Salangri Distt. Una (HP)	9418178839	yousuf_khan07@hotmail.com	
13	RAJINDER AGRI CLINIC	Dr. Rajinder Singh	Managing Director	AMRITSAR, PUNJAB	9815008544	director@rejinderagriclinic.com	
14	Om Shree Agri Services	Manoj Kumar Mohanty	Proprietor	Alisha, Puri	8763248218	manoj.76.oss@gmail.com	
15	MS PRAKRITI AGRO PRODUCTS	Lila Kanta Bhattarai	Proprietor	Tinsukia	7577990058	bhattarailakant@gmail.com	

16	ICAR-KVK,Veterinary College and Research Institute,	Dr.C.SANKAR	Assistant professor(Agricultural entomology)	Namakkal	9943008802	csankardr@gmail.com	
17	KVK-Sitapur	Dr. Daya Shankar Srivastava	Senior Scientist and Head	Sitapur, UP	8004931020	sitapurkvk2@gmail.com	

Annexure-4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024-25	3000					
2025-26	3000					
2026-27	4000					

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	2021-24	10240											

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:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
AGR/N7813: Prepare and pasteurise mushroom compost	<i>Arrange various materials to prepare mushroom compost</i>	10	15	-	10
	PC1. select the appropriate method for preparing the compost such as long method/ bunker short method according to the budget	-	-	-	-
	PC2. arrange the base material required for preparing the compost such as wheat/ paddy straw, calcium ammonium nitrate, urea, etc.	-	-	-	-
	PC3. select the appropriate ingredients to rectify mineral deficiencies; stabilise the effect of ammonium content, and ensure adequate aeration	-	-	-	-
	PC4. determine different formulations of composting ingredients to achieve the required nitrogen and carbon ratio for mushroom compost	-	-	-	-
	PC5. arrange the appropriate tools, equipment and Personal Protective Equipment (PPE)	-	-	-	-
	<i>Prepare and pasteurise the mushroom compost</i>	12	20	-	16
	PC6. prepare a clean concrete floor to prepare the mushroom compost	-	-	-	-
	PC7. apply the recommended quantity of water on the base material after spreading it on the floor	-	-	-	-
	PC8. maintain the recommended level of moisture in the base material for the recommended duration	-	-	-	-
	PC9. prepare a mixture of molasses, wheat bran and fertilizers maintaining the recommended ratio	-	-	-	-
	PC10. apply a cover of wet gunny bags on the mixture to maintain the appropriate level of moisture	-	-	-	-
	PC11. prepare the mushroom compost by mixing the base material and wet fertilizers	-	-	-	-
	PC12. carry out turning of the mushroom compost as per the recommended turning schedule	-	-	-	-
	PC13. add the recommended nutrients to the compost such as gypsum during turning	-	-	-	-
PC14. maintain the recommended level of nitrogen, pH and moisture in the compost	-	-	-	-	
PC15. Make pile and give turnings as per schedule	-	-	-	-	

	PC16. pasteurise the mushroom compost to kill the harmful micro-organisms	-	-	-	-
	PC17. arrange for protection of mushroom compost from pathogens or pests	-	-	-	-
	PC18. use the relevant PPE and clothing	-	-	-	-
	PC19. maintain the record of chemicals used in the preparation of mushroom compost	-	-	-	-
	Total Marks	30	40	-	30
AGR/N7814: Procure inputs and prepare the site for mushroom cultivation	<i>Procure the inputs for mushroom cultivation</i>	<i>14</i>	<i>24</i>		<i>18</i>
	PC1. select an appropriate variety of mushroom to grow according to the local climate, market demand and required investment	-	-	-	-
	PC2. estimate the requirement of inputs such as mushroom spawn, fertilizer, pesticides, etc.	-	-	-	-
	PC3. identify the vendors of the required inputs	-	-	-	-
	PC4. select a vendor based on the quality of inputs	-	-	-	-
	PC5. purchase the inputs in the required quantity	-	-	-	-
	PC6. store the inputs as per the storage requirements	-	-	-	-
	<i>Prepare the site for mushroom cultivation</i>	<i>16</i>	<i>16</i>		<i>12</i>
	PC7. select a site for mushroom cultivation that does not have exposure to sunlight	-	-	-	-
	PC8. examine the moisture, CO ₂ and temperature levels to ensure favourable conditions for growing mushroom	-	-	-	-
	PC9. determine that the site has access to inputs required for mushroom cultivation such as water, electricity and farm labour	-	-	-	-
	PC10. check that the site has easy access to the local markets	-	-	-	-
	PC11. ensure effective drainage of water from the site of cultivation	-	-	-	-
	PC12. prepare a layout of the mushroom farm according to the growing conditions required for the selected variety of mushroom	-	-	-	-
	PC13. establish the mushroom farm using the recommended materials such as timber, bamboo frame, synthetic fibre cloth, puf panel etc.	-	-	-	-
PC14. build a store room for storing mushroom farming inputs, tools and equipment	-	-	-	-	
	Total Marks	30	40		30
AGR/N7815: Carry out mushroom cultivation	<i>Carry out spawning</i>	<i>10</i>	<i>12</i>		<i>12</i>
	PC1. select an appropriate method of spawning such as spot spawning, surface spawning and layer	-	-	-	-

PC2. create holes of the recommended depth maintaining appropriate space in case of spot spawning	-	-	-	-
PC3. plant lumps of spawn in the holes	-	-	-	-
PC4. apply a cover of compost on the holes after planting spawns	-	-	-	-
PC5. spread spawn evenly on the top layer of the compost in case of surface spawning	-	-	-	-
PC6. mix spawn in the compost at the recommended depth	-	-	-	-
PC7. apply a thin layer of compost on spawn mixture	-	-	-	-
PC8. prepare a mixture of mushroom spawn and compost maintaining the recommended ratio in the layering method	-	-	-	-
PC9. create further layers of mushroom compost as per the layering method with mushroom spawns applied in the recommended quantity	-	-	-	-
PC10. apply a thin layer of compost on the top layer after mixing spawn and a cover of the recommended material on the compost bed	-	-	-	-
PC11. spread the mixture on racks or fill in polythene bags as planned	-	-	-	-
PC12. apply water in the recommended quantity using a spray pump	-	-	-	-
PC13. maintain the recommended temperature and relative humidity in the cultivation area	-	-	-	-
<i>Prepare and apply casing soil</i>	8	10		8
PC14. prepare the casing soil using the recommended material such as ash of the rice husk, calcium carbonate and sterilised soil	-	-	-	-
PC15. pasteurise the compost and casing soil with formalin solution	-	-	-	-
PC16. apply a cover of polythene on the compost after making it wet	-	-	-	-
PC17. remove the polythene cover after the recommended duration	-	-	-	-
PC18. carry out compost turning to remove the smell of formalin	-	-	-	-
PC19. apply casing mixture when the mushroom mycelium spreads completely	-	-	-	-
PC20. apply water in the recommended quantity using a sprinkler	-	-	-	-
PC21. maintain the recommended temperature, Potential of Hydrogen (pH) and relative humidity	-	-	-	-
PC22. arrange for protection of growing mushroom from dry air	-	-	-	-
<i>Optimise resource utilisation</i>	6	8		6
PC23. optimise the usage of various materials, water and other resources in various tasks and processes	-	-	-	-
PC24. plug water leakages to prevent the wastage of water	-	-	-	-
PC25. Perform waste management	-	-	-	-

	PC26. segregate waste into different categories	-	-	-	-
	PC27. dispose the non-recyclable waste appropriately	-	-	-	-
	PC28. deposit the recyclable and reusable material at the identified location	-	-	-	-
	Total Marks	30	40	-	30
AGR/N7816: Maintain, harvest and process mushroom	<i>Maintain the mushroom's optimum growth</i>	<i>10</i>	<i>16</i>		<i>8</i>
	PC1. inspect the cropping bed for any pests and fungal diseases	-	-	-	-
	PC2. apply the recommended pesticides/ insecticides/ fungicides using sterilised PPE as per the manufacturer's instructions	-	-	-	-
	PC3. maintain the recommended temperature, relative humidity and air circulation for the optimum growth of mushroom	-	-	-	-
	PC4. remove the spent compost from the cultivation area to prevent contamination	-	-	-	-
	PC5. use sterilised pots, containers, tools and equipment to control nematodes, mites, insect pests, etc.	-	-	-	-
	<i>Harvest the mushroom</i>	<i>12</i>	<i>14</i>		<i>12</i>
	PC6. examine the mushroom to identify the relevant growth indicators appropriate for harvesting	-	-	-	-
	PC7. apply the recommended harvesting techniques to harvest mushroom	-	-	-	-
	PC8. use the approved cleaning agents to remove soil particles, compost, and other foreign materials from the harvested mushroom	-	-	-	-
	PC9. remove the water content from the mushroom	-	-	-	-
	PC10. sort and grade the harvested mushroom on the relevant parameters	-	-	-	-
	<i>Store, pack and transport mushroom</i>	<i>8</i>	<i>10</i>		<i>10</i>
	PC11. prepare the storage area to ensure it is clean, dry and ventilated before storing mushroom	-	-	-	-
	PC12. apply the relevant treatment in the storage area to remove any pesticides/ insecticides/ rodents	-	-	-	-
PC13. store the harvested mushroom at the recommended temperature and humidity	-	-	-	-	
PC14. arrange for the protection of mushroom from dust, rain, livestock and direct sunlight	-	-	-	-	
PC15. select the appropriate packing material considering the distance to the target market and required shelf- life	-	-	-	-	

	PC16. pack the mushroom in the packs of appropriate capacity as per the requirement	-	-	-	-
	PC17. apply labels on the mushroom packs containing the relevant information as per the regulatory requirements	-	-	-	-
	PC18. arrange for appropriate transport to protect mushroom during transit to the market	-	-	-	-
	PC19. maintain the record of harvested, packed and transported mushroom	-	-	-	-
	Total Marks	30	40	-	30
AGR/N9908: Undertake basic entrepreneurial activities for small enterprise	<i>Plan the agricultural enterprise/ business</i>	10	14		10
	PC1. analyse the demand and supply of the relevant agricultural produce in the market	-	-	-	-
	PC2. identify the target customers and assess their needs and expectations with respect to the quality and price of the produce	-	-	-	-
	PC3. identify various types of agricultural entrepreneurship/ business opportunities	-	-	-	-
	PC4. plan agricultural production with the use of relevant and efficient technologies for availing funds	-	-	-	-
	PC5. identify appropriate and authentic advisory services/Government authority for skill upgradation to successfully plan and implement business activities	-	-	-	-
	PC6. prepare a basic business plan for the agricultural entrepreneurship/business activities	-	-	-	-
	PC7. identify appropriate sources of funding for the agricultural entrepreneurship/ business	-	-	-	-
	PC8. coordinate with the relevant government authorities to subscribe to the relevant government schemes and programs to benefit from them	-	-	-	-
	PC9. ensure compliance with the government structural reforms and framework along with the applicable rules and regulations while setting up the agricultural enterprise/ business	-	-	-	-
	<i>Manage the agricultural production process</i>	8	10		8
	PC10. select and arrange the necessary resources for the business operations	-	-	-	-
PC11. ensure the use of relevant and efficient production technologies as per planning and availability of funds	-	-	-	-	

PC12. follow the recommended practices for efficient input resource management	-	-	-	-
PC13. optimise the production processes and output through the amalgamation of existing practices with smart technologies	-	-	-	-
PC14. follow the recommended sustainability practices during agricultural production to prevent adverse impacts on the environment and produce viz. deforestation, loss of biodiversity, soil degradation, etc.	-	-	-	-
<i>Manage the post-production and marketing processes</i>	<i>12</i>	<i>16</i>		<i>12</i>
PC15. ensure the availability of proper storage infrastructures and facilities post-production of the produce as per the industry quality standards	-	-	-	-
PC16. collect information related to the wholesale and retail price of produce	-	-	-	-
PC17. calculate the costs incurred and determine the price of the produce for profitability	-	-	-	-
PC18. ensure that the cost of production, transportation, and marketing are considered while calculating the cost and setting the price for the produce	-	-	-	-
PC19. collect information related to various subsidies/funds offered by the government, authorised state units and other financial institutions involved with the promotion of the produce	-	-	-	-
PC20. select appropriate marketing channels for the produce, considering the relevant requirements and constraints	-	-	-	-
PC21. identify various risks to production and post- production processes and manage them appropriately	-	-	-	-
PC22. undertake outreach programs to promote agricultural products and services, and expand agri- business	-	-	-	-
PC23. prepare and execute a marketing plan considering the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness	-	-	-	-
PC24. use the relevant digital services such as e- commerce, e- payments, electronic record-keeping, etc.	-	-	-	-
PC25. use efficient post-production logistics means to improve the supply quantity, reduce the cost to the consumer, and increase demand consequently	-	-	-	-

	PC26. ensure all the relevant information such as quality and quantity of produce, date of manufacture, batch number, and sale is recorded electronically and/ or manually	-	-	-	-
	PC27. coordinate with the various stakeholders for efficient and sustainable agri-business growth and development	-	-	-	-
	Total Marks	30	40	-	30
AGR/N9903: Maintain health and safety at the workplace	<i>Maintain personal hygiene</i>	10	5		10
	PC1. wash hands, legs and face with soap/alcohol- based sanitizer at reasonable intervals	-	-	-	-
	PC2. wash the worn clothes with soap and sun-dry before use next time	-	-	-	-
	PC3. ensure the face is covered with mask or three layers of cloth-piece	-	-	-	-
	PC4. follow the workplace sanitisation norms including distancing from sick people	-	-	-	-
	<i>Maintain clean and safe workplace</i>	15	15		15
	PC5. carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor	-	-	-	-
	PC6. wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy	-	-	-	-
	PC7. follow the instructions mentioned on the labels of chemicals/pesticides/fumigants etc. to avoid hazards	-	-	-	-
	PC8. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices	-	-	-	-
	PC9. sanitize equipment, tools and machinery before and after use	-	-	-	-
	PC10. use equipment and materials safely and correctly and return the same to designated storage after use	-	-	-	-
	PC11. dispose waste safely and correctly in the designated area	-	-	-	-
	PC12. recognize risks to bystanders and take required action to reduce the risks	-	-	-	-
	PC13. work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed	-	-	-	-
PC14. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-	
PC15. follow government / workplace advisories in case of outbreak of any disease/disaster	-	-	-	-	

	<i>Administer appropriate emergency procedures</i>	15	5		10
	PC16. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements	-	-	-	-
	PC17. use emergency equipment in accordance with manufacturer's specifications and workplace requirements	-	-	-	-
	PC18. report provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	-	-	-	-
	PC19. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	-	-	-	-
	PC20. report details of first aid administered in accordance with workplace procedures	-	-	-	-
	Total Marks	40	25	-	35
DGT/VSQ/N0101: Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the job requirements				
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices				
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.				
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences				
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others				
	PC6. work with others in a team				
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD				
	PC8. report any issues related to sexual harassment				
	<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely					
PC10. calculate income, expenses, savings etc.					
PC11. approach the concerned authorities for any exploitation as per legal rights and laws					
<i>Essential Digital Skills</i>	4	6	-	-	

	PC12. operate digital devices and use its features and applications securely and safely				
	PC13. use internet and social media platforms securely and safely				
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business				
	PC15. identify sources for arranging money and associated financial and legal challenges				
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers				
	PC17. identify customer needs and address them appropriately				
	PC18. follow appropriate hygiene and grooming standards				
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata				
	PC20. search for suitable jobs and apply				
	PC21. identify and register apprenticeship opportunities as per requirement				
	Total Marks	20	30	-	-
	Grand Total	210	255		185

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-Stamps 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