MUSHROOM PRODUCTION (LEVEL- 4)

SYLLABUS/ CURRICULUM

Entry Qualification: 8th Pass **Level:** 4

This program is aimed at training candidates for the job of a "Mushroom Grower", in the "Agriculture and allied" Sector/Industry and by the end of the program aims at building the following key competencies amongst the learner:

1. Identify and arrange inputs for mushroom cultivation	2. Undertake good quality mushroom production using suitable techniques
3. Undertake basic entrepreneurial skills for small scale mushroom enterprise	4. Practice health and safely at workplace

This course encompasses 06 out of 06 National Occupational Standards (NOS) of "-Mushroom Grower" Qualification Pack issued by "ASCI".

S. No	Topic/Module/ Lesson	Duration (in Hours) (Self learning + contact hrs+ Practical)	Key Learning Outcomes	Broad contents to be covered		Corresponding NOS Code
				Theory	Practical	
1.	Introduction to mushroom	5 (2+1+2)	• Understand the basics of mushroom • Develop interest in mushroom cultivation	• History of mushroom • Nutritional and medicinal properties of mushroom • Scope and opportunities • Types of edible and medicinal mushroom • Nature of work	• Orientation to a mushroom farm • Identification of different types of mushroom	-
2	Mushroom Spawn (seed)	20 (6+4+10)	• Produce quality spawn for different	• Preparation of pure culture	• Preparation of pure culture	AGR/N7814

	production/ procurement		mushroom. • Procure mushroom spawn from authentic source.	• Preparation of mother spawn • Production of planting spawn • Storage /Transportation of spawn • Criteria for selection of good quality spawn	• Preparation of mother spawn • Production of planting spawn Storage /Transportation of spawn	
3	Cultivation of Button mushroom	25 (5+3+17)	• Prepare compost, casing soil and manage crop • Pick, wash, grade and pack the harvested button mushroom	• Procurement of raw materials • Wetting of substrate materials/ formulation • Outdoor fermentation in stacks/ turning schedule by long method • Short method of composting done in two phases: phase-1 (Outdoor/ bunker) and phase-2 bulk pasteurisation chambers) • Spawning of compost/ spawn run • Casing and case-run • Cropping and harvesting of mushroom • Post harvest handling	• Wetting and mixing of ingredients inmixture Outdoor fermentation in stacks/ turning schedule by long method Short method of composting done in two phases: phase-1 (Outdoor/ bunker) and phase-2 bulk pasteurisation chambers) Spawning of compost/ spawn run Casing and case-run Cropping and harvesting of mushroom • Post harvest handling	**AGR/N7813, 7814,7815, 7816**
4	Cultivation of Oyster mushroom	17 (4+3+10)	• Prepare substrate and manage crop • Pick, grade and	• Procurement of raw materials • Substrate	• Substrate wetting and treatments: Hot	**AGR/N7813, 7814,7815,**

			pack the harvested oyster mushroom	formulation • Substrate wetting and treatments: Hot water/ steam • Spawning of substrate and filling in container/ bag, spawn run • Exposing of bags for cropping • Cropping and harvesting of mushroom • Post harvest handling	water/ steam • Spawning of substrate and filling in container/ bag, spawn run • Exposing of bags for cropping • Cropping and harvesting of mushrooms • Post harvest handling	**7816**
5	Cultivation of Paddy Straw mushroom	17 (4+3+10)	• Prepare substrate and manage crop • • Pick, grade and pack the harvested paddy straw mushroom	• Procurement of raw materials: Paddy straw bundles • Substrate wetting and treatments: Hot water/ steam • Stacking of paddy straw bundles in a heap and spawning in layers • Polythene cover of the heap for spawn run • Cropping and harvesting of mushrooms • Post harvest handling	• Substrate wetting and treatments: Hot water/ steam • Stacking of paddy straw bundles in a heap and spawning and covering of the heap with polythene for spawn run • Cropping and harvesting of mushrooms • Post harvest handling	**AGR/N7813, 7814,7815, 7816**

6	Cultivation of Milky mushroom	17 (4+3+10)	• Prepare substrate and manage crop • Pick, grade and pack the harvested milky mushroom	• Procurement of raw materials • Substrate formulation • Substrate wetting and treatments: Hot water/ steam • Spawning of substrate and filling in container/ bag, spawn run • Casing and case-run • Exposing of bags for cropping • Cropping and harvesting of mushroom • Post harvest handling	• Substrate wetting and treatments: Hot water/ steam • Spawning of substrate and filling in container/ bag, spawn run • Casing and case-run • Cropping and harvesting of mushroom • Post harvest handling	**AGR/N7813, 7814,7815, 7816**
7.	Cultivation of other economically important and medicinal mushroom	29 (4+5+20)	• Prepare substrate and manage crop • Pick, grade and pack the harvested economically important and medicinal mushroom	• Shiitake Mushroom • Kabul Dhingri (King oyster) Mushroom • Reishi (Ganoderma) Mushroom • Kira ghas (Cordycep) Mushroom	• Substrate preparation for economically important and medicinal mushroom • Crop management • Post harvest handling	**AGR/N7814**
8	Insect- Pests management in cultivated mushroom	18 (8+5+ +5)	• Identify and manage Insect-Pests affecting mushroom	• Major insect pests- Mushroom flies/ nematodes/mites	• Identification and management of pests by chemical and non-chemical methods	**AGR/N7815**

9	Disease management in cultivated mushroom	18 (8+5+ +5)	• Indentify and manage diseases affecting mushroom	• Dry Bubble and wet bubble – major diseases of cultivated mushroom • Competitor/weed moulds encountered: Green, yellow and plaster moulds/ *Coprinus*	• Disease identification and management by chemical and non - chemical methods	**AGR/N7815**
10	Value addition of mushroom	28 (5+5+18)	• Prepare different value added products of mushroom	• Value added recipes • Quality assurance • Shelf life • Packing and packaging • Market opportunities	• Value added recipes preparation	-
11	Mushroom growing unit/ house -	8 (2+2+4)	• Design and develop mushroom production growing structure / unit	• Construction of mushroom growing unit	• Construction of mushroom growing unit using locally available materials	**AGR/N7814**
12	Entrepreneurial skills and economics for small enterprise	20 (5+5+10)	• Able to prepare a business plan for small scale enterprise	• Explore the market and marketing concepts • Economics of different types of mushroom	• Market survey • Calculation of Cost-Benefit ratio of mushroom production	**AGR/N9908**
13	Management of spent substrates and waste disposal of various mushroom	10 (5+5+0)	• Able to manage bio waste of mushroom industry	Management of spent substrates and waste disposal of various mushroom	-	**AGR/N9903**

14	Health and safety at workplace	8 (2+2+ 4)	• Maintain a clean and efficient workplace • Rendered appropriate emergency procedures • On time reporting to appropriate person • Practice general safety and First Aid	• Objectives of health surveillance	• Health and safety at workplace • Precautions and Emergency procedures	**AGR/N9903**

Total Programme Duration: **240 Hours**