

Syllabus for Shitake Mushrooms Cultivator

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| Course Name | Shitake Mushroom Cultivator |
| Course Code | AGR/2024/SHMC/430 |
| Sector | Agriculture |
| Occupation | Shitake Mushrooms |
| Course Duration | 38 hrs |
| Trainee Entry Qualification | VIII passed |
| Trainer Qualification | B. Sc with experience in mushroom cultivation |

Structure of Course:

| Module No | Module Name | Outcome | Theory (Hrs) | Practical (Hrs) | Total (Hrs) |
|--------------|---|--|--------------|-----------------|-------------|
| 1 | Introduction to Shitake Mushroom & Mushroom Life Cycle | Explain Shitake Mushrooms and Mushroom Life Cycle | 4 | 2 | 6 |
| 2 | Shitake Mushroom varieties & Mushroom Cultivation Methods | Explain Shitake Mushroom varieties and cultivation methods | 4 | 2 | 6 |
| 3 | Substrate Preparation & inoculation Techniques | Prepare substrate and spawn | 4 | 3 | 7 |
| 4 | Log cultivation & Bag Cultivation | Demonstrate selection of suitable logs, log preparation, preparation of substrate bags and management techniques | 4 | 3 | 7 |
| 5 | Indoor Cultivation and pest Management | Demonstrate selection of growing media and formulation with handling of Pest issues. | 4 | 2 | 6 |
| 6 | Harvesting and post harvesting Handling | Demonstrate harvesting and pest harvesting techniques with geothermal heating and cooling. | 4 | 2 | 6 |
| Total | | | 24 | 14 | 38 |

SYLLABUS:

Module No 1: Introduction of Shitake Mushrooms and Mushroom Life Cycle

Outcome: Explain Shitake Mushrooms and Mushroom Life Cycle

Theory content: Overview of Shitake Mushrooms, their culinary and medicinal value, Market demand
Different staged of mushroom growth & factors affecting each stages.

Practical content: Identification of different types of Mushrooms, its stages

Module No 2: Shitake Mushroom varieties and cultivation methods

Outcome: Explain Shitake Mushroom varieties and cultivation methods

Theory content: introduction to popular shitake mushroom varieties, their characteristics, suitability, selection of appropriate varieties

Over view of different cultivation methods, log cultivation, bag cultivation, indoor cultivation etc

Practical content: show mushroom varieties, log cultivation, bag cultivation

Module No 3: Substrate preparation and inoculation techniques

Outcome:Prepare substrate and spawn

Theory content: introduce to the importance substrate and its composition, preparation of hardwood logs, sawdust or straw. Introduction and demonstration of spawn production methods

Practical content: Preparation of hardwood logs, sawdust or straw. Demonstration of spawn production methods including grain spawn and sawdust spawn.

Module No 4: Log cultivation & Bag Cultivation

Outcome:Demonstrate selection of suitable logs, log preparation, preparation of substrate bags and management techniques

Theory content: Detailed instruction on selecting suitable log, log preparation and inoculation. Low management techniques, moisture control, temperature regulation and pest management and harvesting techniques. Preparation of substrate bags and management techniques

Practical content: Demonstration on preparation of substrate bags and selection of logs.

Module No 5: Indoor Cultivation & Disease and pest Management

Outcome: Demonstrate selection of growing media and formulation with handling of Pest issues.

Theory content: Design of indoor cultivation, selection of growing media and formulation. Disease and pest management. Diseases: 1) Trichoderma plague, 2) Dry blackcoal diseases and 3) Yellow jelly diseases

Practical content: demonstration of selection of growing media and formulation of substrate, cleaning process, pest issues

Module No 6 : Harvesting and post harvesting Handling.

Outcome: Demonstrate harvesting and pest harvesting techniques with geothermal heating and cooling.

Theory content: Determine right time for harvesting, post harvesting techniques to minimize damage, storage conditions and packaging. Explanation on geothermal heating cooling methods

Practical content: showing of poly houses, using bamboo, treatment of bamboos. Showing harvesting methods.

Learning Outcome – Assessment Criteria

| Module No | Outcome | Assessment Criteria |
|-----------|--|---|
| 1 | Explain Shitake Mushrooms and Mushroom Life Cycle | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Identify different shitake mushrooms • Understand different stages of mushroom growth. • Factor affecting each stages of growth |
| 2 | Explain Shitake Mushroom varieties and cultivation methods | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Explain popular shitake mushroom varieties • Understand different cultivation methods |

| Module No | Outcome | Assessment Criteria |
|------------------|--|---|
| 3 | Prepare substrate and spawn | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Understand substrate and its composition • Step by step preparation of substrates • Introduction and demonstrations spawn production |
| 4 | Demonstrate selection of suitable logs, log preparation, preparation of substrate bags and management techniques | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Explain proper details of log and bag cultivation of Mushroom, handling, watering and management |
| 5 | Demonstrate selection of growing media and formulation with handling of Pest issues. | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Explain set up and design of indoor cultivation • Selection of growing media • Identification and prevention of common diseases and treatments |
| 6 | Demonstrate harvesting and pest harvesting techniques with geothermal heating and cooling. | <p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> • Explain right time for harvesting, post harvesting techniques, storage • Brief explain about geothermal heating and cooling methods, playhouses using bamboo |

List of tools, Equipments and materials needed for 30 trainees (Practical)

| SI No | Items Name | Specification | Qty |
|--------------|-------------------|----------------------|------------|
| 1 | Booklet | Notes | 32 pcs |
| 2 | Pen | Writing | 32 pcs |
| 3 | Drill machine | Drilling | 5 pcs |
| 4 | Drill bits | Drilling | 5 pcs |
| 5 | Wax | Sealing | 5 kg |
| 6 | Logs | Substrate | 5 pcs |

| SI No | Items Name | Specification | Qty |
|-------|---|----------------------------------|--------|
| 7 | Poly publing Plastic (Heat resistance) | Packaging for artificial logs | 30pcs |
| 8 | Saw dust | Substrate | 15kg |
| 9 | Agricultural lime cacl calcium chloride | Sterilization | 1kg |
| 10 | Large size metal cauldron | Heat sterilization | 1 pc |
| 11 | Plastic gloves | Sterilization | 30 pcs |
| 12 | Sanitizer | Sterilization | 2 pcs |

Marks Distribution

Theory – 200

Practical – 800

Total - 1000