

**Producer/ Grower and Processor of Spices, Medicinal and Aromatic Plants (SMAG)**  
**Core Qualification File Syllabus**

**Details of Theory Syllabus**

Sl. No.	CONTENT	DETAILS
1.	Introduction to spices , Medicinal and Aromatic plants,. (3 Hrs)	1.1. Importance and present scenario of of spices cultivation 1.2. Importance and present scenario of cultivation Medicinal & aromatic crops cultivation 1.3. Use of various spices . medicinal and aromatic plants
2.	Basic concepts of classification of spices and Medicinal & Aromatic plants (3 Hrs)	Classification of different Spices on the basis of nature of plant / life span f family/ growing season / parts used 2.2 Classification of different medicinal and aromatic plants on the basis of nature of plant / life span /f family/ growing season / parts used
3	Commercial cultivation practices of important Spices crops. ( 20 Hrs)	Improved cultural hints on Soil,climate, varieties , propagation, nursery technique, transplanting , nutrient management, irrigation , weeding, intercultural operations , harvesting and yield of 3.1Black pepper 3.2 ginger, 3.3 turmeric, 3.4 chilli, 3.5 onion, 3.6 garlic , 3.7coriander, 3.8 fenugreek, 3.9 Nigella , 3.10vanilla 3.11, Bay leaf & 3.12 curry leaf
4	Commercial cultivation technique of important medicinal and aromatic plants (20 Hrs)	Improved cultural hints on Soil,climate, varieties , propagation, nursery technique, sowing, transplanting , nutrient management, irrigation , weeding, intercultural operations , harvesting and yield of  Kalmegh, Sarpagandha, Tulsi, Aloevera, , Basak, Periwinkle, Ashwagandha, Isabgul,

		Stevia , Poppy Citronella and Lemon grass. (22 Hrs)
5	Processing , preparation of value added products , packaging .& marketing of Spice Crops (10 hrs)	Importance of processing of spice crops and economic importance Proper stage and period of harvesting Post harvest operation and value added products of Black pepper Post harvest operation and value added products of Turmeric Post harvest operation and value added products of ginger Post harvest operation and value added products of seed spices Packaging and Storing of spices Oil extraction of spices
6	Processing , preparation of value added products , packaging .& marketing of,Medicinal & Aromatic plants (10 hrs),	Economic importance of processing of Medicinal & Aromatic plants Proper stage , Sand period of harvesting Post harvest operation and value added products of Kalmegh, Sarpagandha, Tulsi, Aloevera , Basak, Periwinkle, Ashwagandha, Isabgul, Stevia , Poppy, Citronella and Lemon grass Post harvest operation and oil extraction of Lemon grass Post harvest operation and oil extraction of citronella 6.18 Packaging and Storing of oil
7	Visit to Spices and Ayurvedic plants garden and processing unit in state Universities/ Govt /private farms & processing units.( 6 hrs)	To identify the crops in the field Study on detail cultural practices Idea on post harvest management Idea on processing unit
	<b>TOTAL</b>	<b>72 Hrs</b>

## **Detail of Practical Syllabus**

<b>SL NO</b>	<b>CONTENT</b>	<b>DETAILS</b>
1.	Identification of seeds / commercial part and plant of spices, medicinal and aromatic crops and. (5 Hrs)	1.1. Preparing a chart with scientific name, family, propagation methods and other related information of spice crops 1.2. Preparing a chart with Growing Area ,variety , Alkaloid / essential oil present ,season of crop growing 1.3. Prepare chart showing distribution of crops in West Bengal & India
2.	Cuiltural practices of different spice crops (20 Hrs)	2.1 Agronomic management of Turmeric, ginger,coriander, Fenugreek Onion, Chilli <ul style="list-style-type: none"> <li>○ Land preparation and lay out</li> <li>○ Seed treatment</li> <li>○ Sowing /planting</li> <li>○ Intercultural operation like top dressing , weeding, irrigation etc.</li> <li>○ Harvesting</li> <li>○ Storing</li> </ul>
3.	Cultural practices of different Medicinal & Aromatic plants crops (20 Hrs)	3.1 Agronomic management of Lemon grass citronella ,stevia, Basil <ul style="list-style-type: none"> <li>● land preparation and lay out</li> <li>● Seed treatment</li> <li>● Sowing /planting</li> <li>● Intercultural operation like top dressing , weeding, irrigation etc.</li> <li>● Harvesting,</li> <li>● storing</li> </ul>
4.	Processing of spices (12 Hrs)	Processing. of - 4.1 Turmeric ( Processed turmeric &Turmeric powder) 4.2 Ginger ( Oil extraction & Bleached ginger ] 4.3 Coriander ( Spice powder)
5.	Processing of Medicinal & Aromatic plants (12 Hrs)	Processing for marketing of - 5.1 Lemon grass ( Aromatic Oil) 5.2 citronella ( Aromatic Oil) 5.3 Basil( Aromatic Oil)
6.	Visit to a Spices ,Medicinal and Aromatic garden and processing unit (11 Hrs)	6.1 Visit to a spice processing factory to learn preparation of ground spices, spice paste , mixed spice, extraction of spice oil and oleo-resin etc. 6.2 Visit to a Ayurvedic medicine garden to identify the plants and study cultural practices 6.3 Visit to a Ayurvedic Drug production industry to

		understand the extraction and use of use of raw materials.
7	Projects (16 Hrs)	Any two projects each of 8 Hrs.
<b>Total</b>		<b>96 Hrs.</b>

### **Details of Project (Any two)**

<b>Sl. No.</b>	<b>Content (Any two, each 8 Hrs.)</b>	<b>Details</b>
1.	Project I (8 Hrs)	Prepare a detail project on commercial cultivation of Turmeric/ginger/coriander/fenugreek/ onion/ garlic/chilli in 1 ha of land with Benefit cost ratio.
2.	Project II (8 Hrs)	Prepare a detail project on commercial cultivation of Lemon grass / citronella / stevia/Basil in 1 ha of land with Benefit cost ratio.
3.	Project III (8 Hrs)	Prepare a project on establishment of a large scale Turmeric processing unit for producing turmeric powder / seed spices ( coriander) with B;C Ratio

### **OUTCOMES**

<b>Outcomes to be assessed</b>	<b>Assessment criteria for the outcome</b>
1. Identify, classify and list out the importance of Spices, Medicinal and Aromatic Plants	1.1 Identify important Spices, Medicinal and Aromatic Plants  1.2 Classify of different Spices, 1.3 Classify of different Medicinal and Aromatic Plants  1.4 Describe the importance of Spices, Medicinal and Aromatic Plants.
2. Describe the process and technique of cultivation practices for growing Spices, Medicinal and Aromatic Plants	2.1 Specify suitable agroclimatic condition for growing the specific crop. 2.2 Maintain the procedures to achieve a productive environment linking with regulations and requirements according to the policy for higher production of Spices, Medicinal and Aromatic Plants. 2.3 Recognize any unsuitable situations in relation to cropping season , crop selection, proper field management , method of propagation harvesting and storage procedure etc.  2.4 Describe the standardization of cultural practices for quality production and value added products as well as environmental pollution system related to it.

	<p>2.5 Explore the procedure about the integrated nutrient management or organic farming system .</p> <p>2.6 Demonstrate the detail procedure for scientific cultivation practices for higher and quality production.</p> <p>2.7 Describe plant protection preferably on integrated method</p> <p>2.6 Identify proper time method for propagation, varieties and intercultural practices.</p> <p>2.7 Implement the systemic maintenance of the crop schedule.</p>
3. Identify post harvest operation and processing for growing Spices, Medicinal and Aromatic Plants	<p>3.1 Maintain procedures to achieve a productive environment linking with Processing of Spices, Medicinal and Aromatic Plants regulations and requirements according to the policy.</p> <p>3.2 Demonstrate detail post harvest operation &amp; processing method of Spices, Medicinal and Aromatic Plants</p> <p>3.3 Describe about the proper harvesting stage, time and methods of specific crop.</p> <p>3.4 Identify the commercial value added products of Spices, Medicinal and Aromatic Plants</p> <p>3.5 Demonstrate of processing method of different crops.</p> <p>3.6 Explain the precautionary measures to be obtained in processing method.</p>
4. Identify, Plan and understand the procedure of processing unit while visit a farm/ Ayurved plants garden , Ayurved institute and processing unit of State Agricultural Universities/ Govt /Private farm.	<p>4.1 Identify and select a particular farm.</p> <p>4.2 Discuss o the advantages of farm visit at different stages of crop growth and visit to processing unit.</p> <p>4.3 Describe name, functions the proper use and application time of different hand tools /devices/ equipment used in cultivation and processing unit</p> <p>4.4 Demonstrate proper method of processing of different products stepwise.</p>