



16FT404 SPICES AND PLANTATION CROPS PROCESS TECHNOLOGY

Hours Per Week :

L	T	P	C
3	-	-	3

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	-	-	5	40	-	-	5	5

Course Description and Objectives:

This course deals with processing, packaging and storage of different kinds of spices and condiments. The objective of this course is to make students aware of various techniques involved in processing of spices and condiments, their value addition.

Course Outcomes:

The student will be able to

- understand scope, processing and production scenario of spices and plantation crops.
- know about processing methods for value addition of spices and condiments.
- discuss standards, adulteration and packaging of spice condiments.

SKILLS:

- ✓ *Analyze chemical composition of spice and plantation crops.*
- ✓ *Suggest a technology for extraction of essential oils from different spices.*
- ✓ *Select suitable packaging material for a spice product.*
- ✓ *Identify adulteration in spice and plantation products.*

UNIT - 1

L-9

INTRODUCTION TO SPICES: Types of spices, Production, Pre-harvest and post-harvest problems in processing, Drying, Storage and Packaging, Health benefits, Spice powder and paste, Their processing, Quality, Storage, Flavouring components, Spice based food additives, Volatiles, Essential oils and oleoresins, Their characteristics, Extraction procedure and utilization, Standards and specifications of spices, Market value of spices in India.

UNIT - 2

L-9

PLANTATION CROPS: Definition of plantation crops, Commercial value of plantation crops, Processing into marketed products, Adulteration, Specifications for packaged market products.

UNIT - 3

L-9

PROCESSING OF TEA AND COFFEE: Types of tea, Chemistry of tea manufacturing, Tea quality, Tea aroma precursors, Tea flavour, grades of tea, Storing of tea, Instant tea, and processed tea products, Tea concentrates, Decaffeinated tea, Flavoured tea and herbal tea, Processing of coffee cherries by wet and dry methods to obtain coffee beans, Prinding, storage and preparation of brew, Soluble /Instant coffee, Use of chicory in coffee, Decaffeinated coffee.

UNIT - 4

L-9

PROCESSING OF COCOA: Chemical composition of cocoa beans, Cocoa Processes, Cleaning, Roasting, Alkalization, Cracking and fanning, Nib grinding for cocoa liquor, Cocoa butter and cocoa powder. Manufacturing process for chocolate, Ingredients, Mixing, Refining, Conching, Tempering, Moulding, To obtain chocolate slabs, Chocolate bars, Enrobed and other confectionary products.

UNIT - 5

L-9

PROCESSING OF PLANTATION CROPS: Production, Processing, Drying, Storage, Health benefits of plantation crops, Pre and post-harvest problems in processing of crops.

TEXT BOOKS:

1. K. G. Shanmugavelu, "Spices and Plantation Crops", 1st edition, Oxford and IBH Publishing Co., 1979.
2. S. Gupta, "Hand Book of Spices and Packaging with Formulae", 2nd edition, Engineers India Research Institute, 2002.

REFERENCE BOOKS:

1. D. K. Salunkhe and S. S. Kadam, "Handbook of Fruit Science and Technology: Production, Composition, Storage, and Processing", 1st edition, CRC Press, 1995.
2. N. K. Jain, "Global Advances in Tea Science", 1st edition, Aravali Books International, 1999.
3. M. N. Clifford and K. C. Willson, "Coffee: Botany, Biochemistry and Production of Beans and Beverage", 1st edition, AVI publishing Co., 1985.

ACTIVITIES:

- Report on various adulterants used in spices and plantation products.
- Flow chart of processing of local value added products of spices and condiments.