

Course Code	Course Name	Credits
26BY012	ECONOMIC BOTANY	04

### Course Objectives

- To provide knowledge of major economic food crops, including cereals, legumes, fruits, and vegetables, with emphasis on their cultivation, production, and uses.
- To develop understanding of commercially important plant products such as oils, fibers, beverages, medicinal, aromatic, and ethnoveterinary plants.
- To impart knowledge on industrially and economically important plants including biofuel, timber, gum, resin, and rubber-yielding species.
- To create awareness about psychoactive, narcotic, and poisonous plants and mushrooms, including their properties and impacts on human health and society.

### Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

- Identify and explain the cultivation, production, and economic uses of major food crops and horticultural plants.
- Analyze the importance of plant-derived commercial products such as oils, fibers, beverages, and medicinal compounds.
- Evaluate the role of plants in industries including biofuel production, timber, gum, resin, and rubber sectors.
- Recognize and differentiate psychoactive, narcotic, and poisonous plants and mushrooms, and assess their ecological and health implications.

### Unit 1 - Economic food Crops (12 Hrs.)

Major Food Crops - cultivation, production, and uses of the following crops: **Cereals:** Wheat, Rice, Maize, **Legumes:** Beans - Soy beans; Peas- Green peas; Nuts- Peanut; Lentils- Red lentils; Sugar-yielding Crops, cultivation, production, and uses of Sugarcane, and Sugar beet.

### Unit 2 – Economic Importance of fruits and vegetable(12 Hrs.)

Types of culinary fruits and Uses - Mango, Banana, Grape, Watermelon, Citrus, Guava and Apple. Vegetables: Tomato, Brinjal, Cabbage and Onion, Fumigatories and masticatories: Tobacco, Areacanut. Root and Tuber Crops-: Potato, Beetroot, Sweet potato, Tapioca etc.

### Unit 3 - Commercial important products/ medicine derived from Plants (12 Hrs.):

Plants yielding fatty/essential oils, Groundnut, Mustard and Coconut. Beverages - Tea, coffee, Tinder coconut, Fiber - cotton, jute, Flex, Medicinal and Aromatic Plants: Sarpagandha, Vinca, Ethnoveterinary Plants – Leucas, Bottle Gourd. Rubber yielding plants - Para Rubber Tree, Congo Rubber..

### Unit 4 – Economic Importance of Biofuel Plants, Timber and Gum and Resins plants (12 Hrs.):

Cultivation and uses- Oil palm, Jatropha, Sesame, Castor, Sunflower, Rapeseed, Soybean. Timber Plants: Teak, mahogany, Mango tree, Sheesham, Deodar, Sal., Arjuna tree, Gums and Resins: Acacia, Pinus. Fodder, Green Manure- Cowpea, Dhaincha,

### Unit 5 - Psychoactive, narcotic, edible mushrooms, edible algae and commercial Uses: (12 Hrs.)

Commercial uses of Psychoactive and narcotic plants: Hemp, opium poppy, jimson weed, peyote and khat Edible mushrooms and commercial value - Oyster, Milky, Paddy straw mushroom, Button mushroom and shiitake mushroom; edible algae and uses- chlorella, spirulina.

### Reference Books:

1. Kochhar, S. L. (2016). Economic Botany in the Tropics, 4th Edition. Macmillan India Ltd., New Delhi.
2. Pandey, B. P. (2014). Economic Botany. S. Chand & Company Ltd., New Delhi.
3. Simpson, B. B., &Ogorzaly, M. C. (2015). Economic Botany: Plants in Our World, 4th Edition. McGraw-Hill Education, New York.
4. Heiser, C. B. Jr. (1990). Plants and Civilization, 3rd Edition. Wadsworth Publishing Company, Belmont, California.
5. Schery, R. W. (1972). Plants and Human Affairs, 2nd Edition. McGraw-Hill Book Company, New York.
6. Jain, V. K. (2010). Economic Botany: Principles and Practices. Scientific Publishers, Jodhpur, India.
7. Cotton, C. M. (1996). Ethnobotany: Principles and Applications. John Wiley & Sons Ltd., Chichester, UK.
8. Gupta, V. K. (2012). Medicinal Plants: Chemistry and Properties. Daya Publishing House, New Delhi.
9. Jain, S. K. (1996). Handbook of Economic Botany. Deep Publications, New Delhi.
10. Verma, V. (2009). Economic Botany: A Textbook of Useful Plants and Plant Products. CBS Publishers & Distributors Pvt. Ltd., New Delhi.