

**SHRI GOVIND GURU UNIVERSITY**  
**Syllabus on the bases of New Education Policy (NEP)**  
**B.Sc. Semester – I**  
**Multi-Disciplinary Course - BOTANY**  
**BS23MD1BO1 : Plant Resources and Utilization**

**UNIT: 1. Cultivated Plants and Their Utilization**

Introduction and Origin of Cultivated Plants, Importance of Plant Resources; Vavilov's concept for the Origin of cultivated plants.

General account, methods of cultivation, climate and uses of the following plants:

- Cereals: Maize and Rice
- Millets: Jowar and Bajra.
- Pulses: Tur and Gram
- Oil seeds: Ground nut and Castor
- Fiber yielding: Cotton, Jute and Coir

**UNIT: 2. Medicinal Plants and Their Utilization**

Identification, Local and Botanical Name, Family, Useful Parts, Chemical constituents and utilization of following medicinal plants:

- Harde (*Terminalia chebula*)
- Behda (*Terminalia bellirica*)
- Amla (*Phyllanthus emblica*)
- Tulsi (*Ocimum sanctum*)
- Ardushi (*Adhatoda vasica*)
- Aadu (*Zingiber officinale*)
- Haldar (*Curcuma longa*)
- Galo (*Tinospora cordifolia*)
- Isaphgul (*Plantago ovata*)

### **UNIT: 3. Economic Plant and Their Utilization**

Types of Beverages (Alcoholic and Non-Alcoholic) with examples, Tea and coffee (Morphology, Chemistry, Processing and Economic Importance)

A concise account of Tobacco (Morphology, species – *Nicotiana tabacum*), Processing, Products, Economic Importance and Health Hazards)

Brief account and economic importance of the Natural Rubber: *Hevea brasiliensis*

General account of selected regional (Gujarat) Timber & Fire wood plant species:

Timber plant species:

*Tectona grandis*, *Dalbergia sisoo*, *Azadirachta indica*, *Madhuca indica*.

Fire wood plant species:

*Holoptelia integrefolia*, *Zyziphus jujuba*, *Acacia nilotica*, *Salvadora persica*

#### **Suggested Readings**

1. Sen, S. 1992. *Economic Botany*, New Central Book Agency, Calcutta.
2. Verma, V. 1974. *A Textbook of Economic Botany*, Emcay Publication, New Delhi.
3. Kochhar, S.L. (2016). *Economic Botany – A Comprehensive Study*, 5th Edition. New Delhi, India: Cambridge University Press.
4. Hiil, A. 1976. *Economic Botany*, Tata Mc Graw Hill Publishing Co., Ltd., New Delhi.
5. Bendre, A., Kumar, A. *Economic Botany*, Rastogi Publication, New Delhi.
6. Wickens, G.E. (2001). *Economic Botany: Principles & Practices*. The Netherlands: Kluwer Academic Publishers.
7. Singh, V, Pande, P C and Jain, DK (2009). *A Text Book of Economic Botany*. Rastogi Publications, Uttar Pradesh.
8. Trivedi, PC (2006). *Medicinal Plants: Ethnobotanical Approach*. Agrobios, India.
9. Fuller, KW and Gallon, JA (1985). *Plant Products and New Technology*. Clarendon Press, Oxford, New York.
10. Wickens, G.E. (2001). *Economic Botany: Principles & Practices*. The Netherlands: Kluwer Academic Publishers.
11. Berg L, (2008). *Introductory Botany: Plants, People, and The Environment*, Thomson Brooks/Cole

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**Practical (Based on Paper-Plant Resources and Utilization)**

1. Identification, Local and Botanical Name, Family, Useful Parts and utilization of following plants:

- Cereals: Maize and Rice
- Millets: Jowar and Bajra.
- Pulses: Tur and Gram
- Oil seeds: Ground nut and Castor
- Fiber yielding: Cotton, Jute and Coir

2. Identification, Local and Botanical Name, Family, Useful Parts, Chemical constituents and utilization of following medicinal plants:

- |   |  |
|---|--|
| ➤ Harde ( <i>Terminalia chebula</i> )   | ➤ Aadu ( <i>Zingiber officinale</i> )  |
| ➤ Behda ( <i>Terminalia bellirica</i> ) | ➤ Haldar ( <i>Curcuma longa</i> )      |
| ➤ Amla ( <i>Phyllanthus emblica</i> )   | ➤ Galo ( <i>Tinospora cordifolia</i> ) |
| ➤ Tulsi ( <i>Ocimum sanctum</i> )       | ➤ Isaphgul ( <i>Plantago ovata</i> )   |
| ➤ Ardushi ( <i>Adhatoda vasica</i> )    |  |

3. Identification, Local and Botanical Name, Family, Useful Parts and utilization of following plants:

- Timber plant species:

*Tectona grandis, Dalbergia sisoo, Azadirachta indica, Madhuca indica.*

- Fire wood plant species:

*Holoptelia integrefolia, Zyziphus jujuba, Acacia nilotica, Salvadora persica*

4. Identification, Local and Botanical Name, Family, Useful Parts and economic importance of Beverages (Tea and coffee).

5. Identification, Local and Botanical Name, Family, Useful Parts and economic importance of Tobacco and Natural Rubber.

6. Project.