

E. BIOPRODUCTS OF PLANT ORIGIN

UNIT I . Study of plants for the production of beverages, alcohol, drugs, narcotics, essential oil, dyes, mucilage, insecticides and pesticides.

UNIT II. Medicinal plants- Plants in Siddha, Ayurveda and Unani systems of Indian Medicine. Bioactive compounds. Gums, resins, Oleoresins, Fibre, Oil-seeds latex(Rubber), Cellulose, starch and their products.

UNIT III. Single cell proteins from Fungi (yeast), algae – (*Chlorella* & *Spirulina*). Culturing of *Dunaliella salina* for (antioxidant) β -carotene, glycerol production and natural food colorants.

UNIT IV. Traditional and economically important plant species of India used as bio-products such as – *Acacia catechu* , *Acacia nilotica*; *Acacia auriculiformis*; *Albizia lebbac*; *Albizia procera*; *Anthocephalus cadamba*; *Anogeisis latifolia*; *Asparagus racemosus*; *Atropa belladonna* ; *Azadirachta indica* ; *Bamboo*; *Butea monosperma*; *Curcuma longa*; *Crocus sativus*; *Capsicum frutescens*; *Carum copticum*; *Centella asiatica*; *Cuminum cyminum*; *Cassia siamea*;

Casuarina equisetifolia; *Cedrus spp.*, *Chukrasia tabularis*; *Cinchona officinalis*; *Dalburgia sissoo*; *Dalburghia latifolia*; *Dipterocarpus marsupium*; *Digitalis purpurea*; *Emblia officinalis*; *Eucalyptus spp.*, *Foeniculum vulgare*; *Gmelina asiatica*; *Gossypium herbaceum*; *Haevia braziliensis* ;*Hardwickia binata*; *Hyoscyamus niger*; *Lagerstroemia lanceolatus*; *Lawsonia inermis*; *Mangifera indica*; *Moneira cuneifolia*; *Nicotiana tabacum*; *Ocimum spp.*, *Phyllanthus amara*; *Piper longum*; *Pterocarpus santalinus*; *Prosopis juliflora*; *Rauwolfia serpentina*; *Santalum album*; *Semecarpus anacardium*; *Shorea robusta*; *Salmalia malabarica*; *Solanum trilobatum*; *Tectona grandis*; *Terminalia spp.*; *Tamarindus indicus*.

UNIT V. Useful products from algae- agar -agar, alginic acid, Diatomaceous Earth. Edible marine algae.

Useful products from fungi – edible mushrooms, Single cell Protein from yeast; Poisonous mushrooms – toxin- vivotoxin – vitamins, enzymes, organic acids, antibiotics, alcohol.

Useful products from Lichens –Litmus dye from *Leconora*.

Useful products from Bryophytes – pteridophytes- *Azolla*- biofertilizer . *Dryopteris* –drug.

Useful products from- gymnosperms – wood, resins, (*Abies balsamina*) Canada - balsam. (*Pinus roxburghii*)Turpentine, (*Taxodium sp.*)Taxol. Wood Pulp for paper making. Drug – *Ephedra*.

REFERENCE BOOKS FOR STUDY

1. Hill, A.W. – Economic Botany, McGraw-Hill .
1. Puri, G.S. – Indian Forest Ecology – 2 Vols. Oxford books & Stationery & co.,
2. Rama Rao, S.V. – Soil Conservation in India – I.C.A.R.
3. Dastur, J.F. – Useful plants of India, Taraporewala.
4. Baker, G.S. – Plants and Civilization. MacMillan Co., London 2nd Edn.,
6. Sambamurthy , A.W. S. Economic botany.