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BOS457(REV22) - Ethnobotany and IPR

Teaching Hours: 9/Unit

Course outcome:

- Gives the basics of ethnobotany including an understanding of the tribals of India
- There is an exhaustive coverage of the methodologies used in ethnobotanical studies
- Tribal groups and their role in various kinds of agricultural practices are included
- Study of some important medicinal plants which are probably the fallout of ethnobotanical/traditional practices

Unit I:

Ethnobotany: Introduction, concept, scope and objectives; Ethnobotany as an interdisciplinary science. The relevance of ethnobotany in the present context; Ethnic groups and Ethnobotany: Major and minor ethnic groups or Tribals of India, and their life styles. Forest Vs. ethnic groups; Plants in Tribal life with reference to Magico-religious rituals and social customs. Sacred groves.

Unit II:

Methodology of Ethnobotanical studies: a) Field work- documenting the information- questionnaire, vedeo recording, interviews b) Herbarium c) Ancient Literature d) Archaeological findings e) temples and sacred places f) Protocols.

Unit III:

Role of ethnobotany in modern Medicine with special examples; Medico-ethnobotanical sources in India with special reference to Karnataka; Tribals Vs. Agriculture: Shifting, Podu and Jhum cultivation. Role of ethnic groups on surrounding environment. Crop Genetic sources. Endangered taxa and forest management (participatory forest management).

Unit IV:

Ethnobotany and legal aspects. Ethnobotany as a tool to protect interests of ethnic groups. Sharing of wealth concept with few examples from India. Ethnobotany as a source (recent) of already known drugs: a) Withania as an antioxidant and relaxant b) Sarpagandha in brain ailments c) Becopa and Centella in epilepsy and memory development in children d) Phyllanthus fraternus in diabetic and viral jaundice e) Artemisia as a powerful cerebral antimalarial agent and its possible use in tuberculosis.

Unit V:

Bioprospectin and Biopiracy, Intellectual property Rights: Forms of protection, Patents, Trademarks, Trade secrets, Designs, Geographical indicater, Plant variety protection

BOS458 (REV22)**- Reproductive Biology of Angiosperms and Plant Morphogenesis**

Teaching Hours: 10/Unit

Course outcome:

- This is a very useful basic course in Botany
- Syllabus includes developmental studies of reproductive structures in plants and development of other regions of plants
- This will form a good basis for subjects like tissue culture and helps in better understanding of organogenesis

Unit I:

Reproductive Biology of Angiosperms: Historical over view, Contributions of P. Maheshwari; BM Johri; BGL Swamy to the development of embryology in India; Microsporogenesis-Male gametophyte development; anther wall layers and functions; Tapetum-types, Concept of male germ unit; Pollen morphological features; Unusual features: pollen development in Cyperaceae, pollen embryosac; Scope of palynology.

Unit II:

Megasporogenesis-Female gametophyte development; Ovular structure & types; Development of monosporic, bisporic, tetrasporic & special types of embryo sacs; Ultrastructure & nutrition of female gametophyte; Fertilization-A general account; double fertilization; single fertilization; heterofertilization & polyspermy; Pollen recognition & rejection reactions-Types; structures; methods to overcome incompatibility reactions; Endosperm-Types; haustorial variati ons; ruminate & composite endosperm; Embryo-Structure; development of monocot, dicot & grass embryo; significance of