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On Line Study Material (e-content).

- College:- S.S. college, Jehanabad
- Department:- Botany
- Subject:- Gymnosperm
- Topic:- Economic Importance
- Medium of Teaching:- What's App & college, website.
- Date:-
- Time:- 11.00-12.00
- Teacher's Name:- Dr. S. S. Sharma
- Class:- B.Sc. PII - H.
Biotech. PI - S.

Economic Importance of Gymnosperms.

Gymnosperms have major economic importance.
For example:

1. In Industry:-

- a) Gum - Cycas gum is used as adhesive, antidote for snake bites and in malignant ulcers.
- b) Tannins - It is extracted from the bark of Arcauria, Picea, Phyllocladus etc. and are used in leather industry.
- c) Canada balsam / Resin - It is a turpentine obtained from Abies balsamea and is used as mounting medium in biological preparation.
- d) Oleoresin - It is obtained from Pinus roxburghii and is used in making soap, varnishes, and printing ink.
- e) Amber - It is a fossil resin obtained from Pinus succinifera. It is used in making beads and jewellery.
- f) Turpentine - It is obtained from Pinus insularis and Pinus roxburghii.

2. Wood:-

Gymnosperms constitute the major forest wealth. They are the important source of wood.

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which is prominent source of fuel. Conifers provide all the world's soft wood timber.

- Wood is light coloured, light weight, non-porous and soft.
- Coniferous wood is valuable for furniture making and interior decoration.
- Wood of *Pinus* is used for doors, poles, beams, railway wagon, flooring etc.
- Wood of *Cedrus deodara* (deodar) is strongest and is used for Railway sleepers, doors, boats etc. The heartwood of deodar has strong scent and is resistant to fungus.

* Plywood :- Plywood is obtained from *Podocarpus*.

3. As Food :-

- Roasted seeds of *Pinus gerardiana* are used as food. Seeds of *Cycas*, *Ginkgo*, *Gnetum* are also edible.
- Sago - The seeds and stems of *Cycas cirinalis* and *C. revoluta* yield sago which is starch.
- *Zamia* is a rich source of starch.
- Vegetable - young leaves of *Cycas* is cooked as vegetable.

4. Papers :-

Wood pulp obtained from *Pinus roxburghii* and *Picea smithiana* is used to make papers for news prints, writing and printing.

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5) Medicine :-

- Juice from young leaves of Cycas circinalis is used to cure stomach disorders, vomiting and skin diseases. Juice of Cycas revoluta is used for curing blood vomiting.
- Seeds of Taxus baccata are used as sedatives.
- "Ephedrine" (alkaloid) extracted from Ephedra is used in treating asthma, cough, cold bronchitis etc.
- Tincture of Ephedra is a cardiac stimulant.
- "Taxol", an anticancerous drug is obtained from Taxus brevifolia.

6) Fiber :-

Bark of Gnetum gnemon and G. latifolium yield fibres of high tensile strength which are used for making ropes and fishing nets.

7) Poison :- Gnetum latifolium, G. contractum are used as fish poisons. Taxus baccata is also used as fish poison due to the presence of toxin.

8) Oils :-

- Oil obtained from Cedrus atlantica is used in perfumery.
- Fatty oils are obtained from fleshy outer layer of seeds of Macrozamia, Torreya nucifera & Gnetum ulg.

9) Ornamentals :- Plants of Thuja plicata, Biota orientalis, Juniperus, Cupressus, Araucaria and Cryptomeria are ornamental and also used in floral decoration. Ginkgo biloba possess beautiful ornamental leaves.

10) Miscellaneous uses :-

- Leaves of Cycas circinalis are used for making brooms and baskets.
- Stems of Cycas ramphii are used for making houses in Indonesia.
- They have great ecological importance as they prevent soil erosion & reduce green house-effect.