Ecological And Economic Importance Pteridophytes

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UNIT- 5

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USED AS A FOOD

- *Azolla* sp. has also been utilised as a dietary supplement for pigs, cattle, rabbits, ducks, fowl, and fish in fresh, dried, or silage form.

- Vegetables are made from the juvenile branches of the common climbing fern species *Lygodium flexuosum*.

- The rhizomes of licorice fern (*Polypodium glycyrrhiza*) and upright sword fern (*Polystichum munitum*) are cooked by steaming and roasting.

- The types that are consumed are the fiddleheads of the vegetable fern (*Diplazium esculentum*), cinnamon fern (*Osmunda cinnamomea*), and ostrich fern (*Matteuccia struthiopteris*).

USED AS A MEDICINE

- The decoction of leaves and roots It has been discovered that *Adiantum philippense* works wonders for treating chest symptoms .

- Dryopteris rhizomes and petioles produce an antihelminthic medication.

- The rhizome and fronds of *Pteridium revolutum*, syn. *P. aquilinum*, are decocted and used in chronic spleen disorders. On the other hand, the cooked rhizome of *Lygodium flexuosum* is applied topically to treat cuts, rheumatism, sprains, scabies, ulcers, and dermatitis.

Medicinally important ferns and fern allies in Kolli Hills, India

S. No	Name of the species	Popular Name	Parts used	Medicinal uses
1	*Actinioptris radiate*	Morpankhi	Plants	Astringent, antihelmintic and styptic (clotting)
2.	*Adiantum capillus- veneris*	Maiden-hair Fern	Plants	Diuretic and astringent (causing the contraction of skin cells)
3.	*Adiantum caudatum*	Mayor Shikha	Plants Rhizomes	Cough and fever Antihelmintic
4.	*Angiopteris evecta*	Ghora top	Rhizomes	Scabies
5.	*Dicranopteris linearis*	Thicket Fern	FrondsRhizome	Asthma, women's sterility Antihelmintic
6.	*Drynaria quercifolia*	Ashvakatri	Plants Rhizome Fronds	Hecticfever, dyspepsia (indigestion) Cough and antihelmintic. Astringent Swellings
7.	*Marsilea minuta*	Water Clover	Leaves	Cough and bronchitii
8.	*Pteridium aquilinum*	Bracken Fern	Rhizomes Rhizome and fronds	Antihelmintic and astringent. Chronic disorders
9.	*Selaginella tenera*	Sajivani	Dried plants	Diuretic gonorrhoea and hallucination
10.	*Dryopteris cochleata*	Kakolisag	Rhizomes	Leprosy, antifungal, Swellings , ulcers and pains

USE FOR BUSINESS AND THE ENVIRONMENT

- *Azolla pinnata* and *Anabaena azollae*, a blue-green algae that fixes nitrogen, have a symbiotic relationship.
- Because of this characteristic, numerous nations, including Thailand, Sri Lanka, India, the Philippines, and the United States, have acknowledged Azolla's agronomic potential as a biofertilizer for rice.
- Additionally, it has been discovered that adding Azolla increases the amount of total nitrogen, phosphorus, potassium, and accessible organic carbon in the soil.

USE FOR BUSINESS AND THE ENVIRONMENT

- Azolla is also used in the manufacture of hydrogen, biogas, and soap ingredients, among other things.
- Additionally, it has been demonstrated that ferns play a significant part in wastewater bioremediation. The Chinese Bracken fern, *Pteris vittata* L., was a hyperaccumulator of the hazardous element arsenic.

Ornamental Value

- Due to their lovely foliage, ferns are planted as ornamental plants in homes and gardens.
- Ferns planted in gardens or pots include *Asplenium* sp., *Selaginella* sp., *Lycopodium* sp., and *Pteris* sp.
- These ferns are grown by several nurseries, which subsequently sell them for a good price. The ferns are then utilised as ornamentals, either as garden plants or to spruce up events.

HORTICULTURE ASPECT

Horticulture makes use of pteridophytes. The several Selaginella species are cultivated as garden plants. Ruhmora adiantiformis, sometimes known as the florist's fern, is utilised in cut flower arrangements since its leaf doesn't wilt.

USED AS FOSSIL FUELS

Ferns have an indirect economic significance. Millions of years ago, ferns dominated the plant life on Earth. Together with other trees and leaves, they created a substantial covering of trash and foliage after they perished. These strata are currently located deep below the surface, and after being exposed to heat and pressure for millions of years, they eventually turned into coal, which has enormous economic value.

ECOLOGICAL IMPORTANCE

One study used 676 400 m2 study plots in forest settings at 65 study sites to suggest the distribution of Pteridophyte species richness on Bolivia's eastern Andean slope. A total of 755 species, including terrestrials and epiphytes with economic significance, were documented .

OTHER USES

- Petioles from some ferns are used to make bracelets and basketry. Some ferns are also used in handicrafts.
- The green dye is prepared from *Pteridium* leaves.
- Due to the non-volatile oils contained in its microscopic spores, club mosses are utilised as a dry industrial lubricant. The spores are also utilised in forensic investigations as finger print powder and as flash powder in photography.


THANK YOU