

PLANT KINGDOM

Important Features

- They are eukaryotic and multicellular.
- Their cells have cellulose walls.
- Majority have transport system.
- They are photosynthetic and hence autotrophic.
- Reproduction by both sexual & asexual.
- They show alternation of generation.
- They are non-motile.
- The plant cell contains the thick cell wall and a large central vacuole.

Classification of Plant Kingdom

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Based on following criteria

* A) Plant Body - Presence and/or absence of a well differentiated plant body e.g. Root, stem & leaves.

* B) Vascular System - Presence and/or absence of a vascular system for transportation of water and other substances e.g. Xylem & Phloem.

* C) Seed formation :- Presence or absence of flowers and seed and if the seeds are naked or enclosed in a fruits.

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A) Plant Body (Basis)

The plant Kingdom has been classified into five subgroups on the basis of Plant Body.

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|-------------------|-------------------|
| 1. > Thallophyta |] <u>5 groups</u> |
| 2. > Bryophyta | |
| 3. > Pteridophyta | |
| 4. > Gymnosperms | |
| 5. > Angiosperms | |

1. > Thallophyta

- Lack well differentiated body structure.
- Plant body Thallus like
- May be filamentous, colonial, Branched or Unbranched.

Ex: - Volvox, Fucus, Spirogyra, Chara, Polysiphonia, Ulothrix etc.

2. > Bryophyta

- Plant Body is thallus-like
- Differentiated into stem, Root & leaf like structure, but no true Root, stem and leaf.
- Bryophytes are called Ambibians of the plant kingdom, as they

require water for sexual reproduction.

- Bryophytes includes Mosses, Hornworts, Liverworts

Ex. Marchantia, Funaria, Sphagnum, Anthoceros

3) Pteridophytes

- Have well differentiated plant body into Root, Stem & leaf.
- Have vascular system for the conduction of water and other substances.

Ex. Selaginella, Equisetum, Pteris

4) Gymnosperms

- Have well-differentiated plant body and vascular tissue.
- Bear naked seeds i.e., seeds are not enclosed within a fruit.

Ex. Cycas, Pinus, Ephedra

5) Angiosperms

- Well differentiated plant body & v.a.
- seeds are enclosed within the fruits

- widely distributed and vary greatly
in size.

Ex. Wolffia - size 0.1 cm

Eucalyptus - 100 m tall

- Divided into two groups acc to
the number of cotyledons.

* Monocotyledons

* Dicotyledons

Ex. Mango, Rose, tomato, Onion,
Wheat, Maize etc.

B) Vascular System (Basis)

— on the basis of vascular
system, plant kingdom can be divided
into two groups: —
Plant Kingdom

Non-vascular Plants

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Thallophyta
Bryophyta

Vascular plants

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Pteridophyta
Gymnosperms
Angiosperms

Seed Formation (Basis)

Plant Kingdom

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Cryptogams

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Phanerogams

- Seedless plants & plant like organisms

- Sex organ hidden

- Reproduce using

Spore

Ex. Thallophyta

Bryophyta

Pteridophyta

- Seed bearing plants

- Sex organ exposed

- Reproduce using

Seed

Ex. Gymnosperm

Angiosperm

* Spermatophytes - seed bearing plants

eg. Gymno, Angio

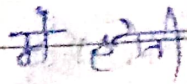
* Tracheophytes - Vascular bundle present

eg. Pteridophyta

Gymno

Angio

* Archegonium - Bryo, Pterido, Gymno



* Zygotic Meiosis

eg. Algae (Haplontic life cycle)

&

Zygotic Meiosis

eg. Bryo, Pterido, Gymno, Angio

Embryophytes