



# *KINGDOM PLANTAE*



# WHAT IS THE KINGDOM PLANTAE?



There are different types of plant species, which are found on planet earth. They are sorted and classified into a separate kingdom known as Kingdom plantae. This classification is based on their similarities and differences.

The Kingdom plantae is also called as kingdom Metaphyta. The Kingdom plantae includes all types of eukaryotic, multicellular, photosynthetic plants found in this biosphere. Most of the organism in this kingdom is autotrophs, which synthesis their own food with the help of solar energy.

There are very few species, which are both autotrophs and heterotrophs. The history of life on earth and the success of many organisms literally depend on the success of plants.

The Kingdom plantae can be defined as multicellular, autotrophic eukaryotes, which conduct photosynthesis.

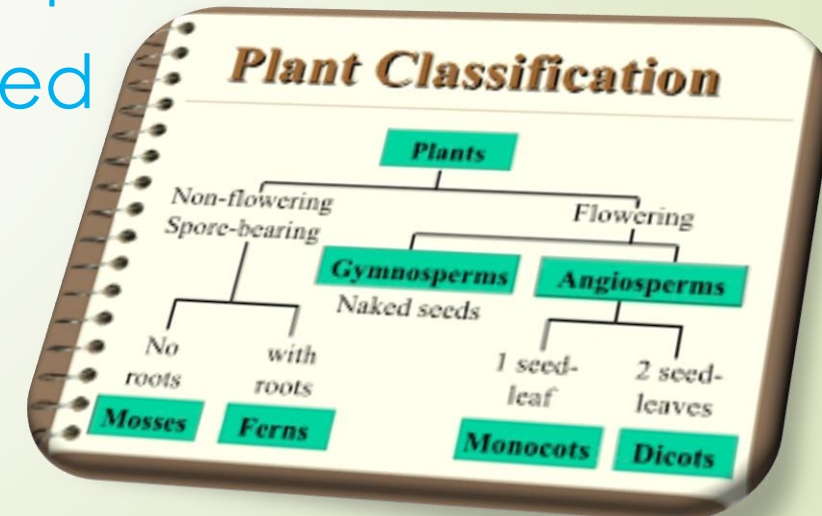
All member of this family comprises of true nucleus and advanced membrane bound organelles. They are quite different from animals. The Kingdom Plantae contains about 300,000 different species of plants.

- Among the five kingdoms, Kingdom plantae is a very important, as they are the source of food for all other living creatures present on planet earth, which depends on plants to survive.



# WHAT ARE ITS BASIS OF CLASSIFICATION?

- 1. Differentiated body parts: Body is differentiated into leaves, stems, roots, flower, etc.
- 2. Presence of vascular tissue: There are two types of vascular tissues present in the plants
- 3. Reproduction through seeds or spores
- 4. Seeds are inside the fruit or naked





# WHAT ARE THE DIFFERENT CLASSIFICATIONS?

➡ Kingdom plantae is classified into 5 groups:

1. Thallophyta
2. Bryophyta
3. Pteridophyta
4. Gymnosperms
5. Angiosperms

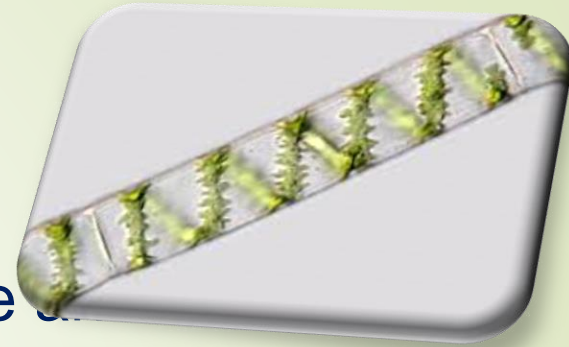
# BRYOPHYTES



- Mosses or *bryophyta* are non-vascular. They are an important foundation plant for the forest ecosystem and they help prevent erosion by carpeting the forest floor. All bryophyte species reproduce by spores not seeds, never have flowers, and are found growing on the ground, on rocks, and on other plants.
- Body structure differentiated but not fully developed.
- No vascular tissues present.
- Reproduce through spores.
- Found on both land and water therefore known as 'Amphibians of Plantae kingdom'

# *THALLOPHYTES*

- any of a group of plants or plantlike organisms (as algae and fungi) that lack differentiated stems, leaves, and roots and that were formerly classified as a primary division (Thallophyta) of the plant kingdom
- its basic features are:
- Basic and elementary plants with undifferentiated body parts.
- Generally called algae.
- No vascular tissue present.
- Reproduce through spores.
- Mainly found in water.
- Example- Ulva, Spirogyra, Ulothrix, Cladophora, Chara.





# PTERIDOPHYTES



- *Pteridophytes* are vascular plants and have leaves (known as fronds), roots and sometimes true stems, and tree ferns have full trunks. Examples include ferns, horsetails and club-mosses. Fronds in the largest species of ferns can reach some six metres in length!
- Many ferns from tropical rain forests are epiphytes, which means they only grow on other plant species; their water comes from the damp air or from rainfall running down branches and tree trunks. There are also some purely aquatic ferns such as water fern or water velvet (*Salvinia molesta*) and mosquito ferns (*Azolla* species).
- *Pteridophytes* do not have seeds or flowers either, instead they also reproduce via spores

# *SEEDING PLANTS*

➡ Seeding plants are of two types :

1. Angiosperms
2. Gymnosperms

## Types of Seed Plants

### 1. Gymnosperms

- Non-flowering or fruit bearing plants
- Produce cones instead of flowers and fruits

Examples: Conifers and evergreens



### 2. Angiosperms

- Flowering plants
- Use flowers (attract animals) and fruits (protect seeds) for reproduction.
- Flowering plants provide food for animals.



# *GYMNOSPERMS*

- This term is made from two Greek words : *gymno*– means *naked* and *sperma* – means *seed*. The plants of this group bear naked seeds and are usually perennial, evergreen and woody. Examples are pines, such as deodar
- The largest group of living *gymnosperms* are the conifers (pines, cypresses and relatives) and the smallest is ginkgo, a single living plant species found in China.
- There are around 1000 species of *gymnosperm*.



# ANGEOSPERMS

- This word is made from two Greek words : *angio* means covered and *sperma*– means seed. The seeds develop inside an organ which is modified to become a fruit. These are also called flowering plants.
- Angiosperms are flowering plants, which develops the seeds within a protective structure.  
The reproduction process is carried by Angiosperm.  
They develop their seeds within an ovary, which itself is embedded in a flower. After the stage of fertilization, the flower falls and the ovary bulges to become a fruit.
- Angiosperms in the class Dicotyledoneae grows into two seed-leaves (cotyledons).  
An angiosperms leaf consists of a single, branched, main vein, which originates from the base of the leaf