

Angiosperms

I. Introduction :

Angiosperms (Angiospermae), more rarely Magnoliophytes, are "classically" all flowering plants. More specifically, from a cladistic point of view, they are :

-a division of the eukaryotes, which are living organisms whose cells have organelles and a nucleus (containing nuclear DNA);

-among them, according to molecular criteria, they belong to the Biontes (not visible on the diagram), the group of living beings whose (hypothetical) common ancestor had a stage of development characterised by cells with two different flagella;

-they are then part of the Green Lineage, the group of photosynthetic living beings (or of which one ancestor was photosynthetic);

they are also Embryophytes, or Cormophytes, i.e. plants with stems (they are organised into branches, or corms);

finally, they are Spermatophytes, i.e. seed plants, like their cousins the Gymnosperms (which include, for example, the Conifers).

II. Organs of flowering plants:

Spermatophytes, also known as phanerogams or flowering plants, are characterised by the presence of :

-a vegetative apparatus

-a reproductive system.

II.1 Structure of the vegetative apparatus :

A. The root:

Roots have many functions:

* Fixing the plant in the soil,

*Drawing water and mineral salts from the environment,

*and, in some cases, to store reserves.

*There are 4 parts to a root:

*The suberous zone *The piliferous zone *The growth zone The coif

B. The stem:

Stems are characterised by the presence of nodes and internodes. It is the stems of higher plants (vascular plants) that house the networks of sap-conducting vessels. These ensure :

- * The distribution of water and mineral salts essential to the plant's nutrition (raw sap).
- * And direct the products of photosynthesis (elaborated sap) to the reserve organs.

C-The leaf:

The leaf is generally a flattened organ, one side of which is called the upper or ventral side and the other the lower or dorsal side.

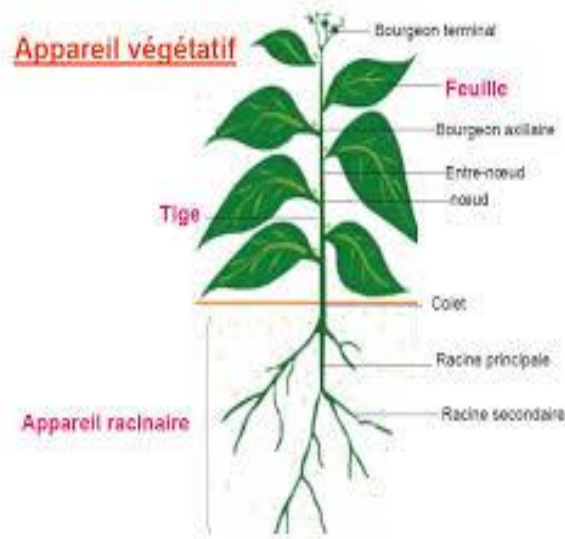


Figure 01: Vegetative apparatus

II.2 Structure of the reproductive system :

A.The inflorescence :

The inflorescence defines the general distribution of flowers on the stem of a plant. The term inflorescence is also used to designate a group of flowers that are variously grouped. This particular arrangement makes it possible to characterise a species, a genus and even entire families in some cases. In some species, there is no inflorescence but only isolated flowers, which may be: terminal, as in the Tulip, Nigella or Poppy, lateral or axillary.

B. The flower :

Complete flowers are borne by the receptacle, which corresponds to the enlarged end of the flower stalk. This receptacle generally bears four whorls of parts, from the outside inwards: *The calyx; *The corolla; *The androecium; *The gynoecium or pistil.

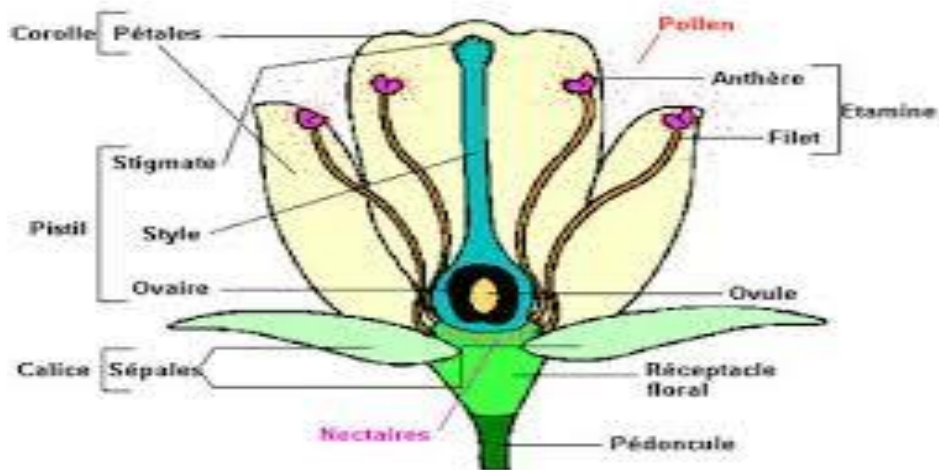


Figure 02: General structure of a flower

C. Fruits:

Depending on the number of carpels per flower and the number of flowers involved in fruit formation, different types of fruit can be distinguished.

* A fruit from a single unicarpellate flower is a single fruit.

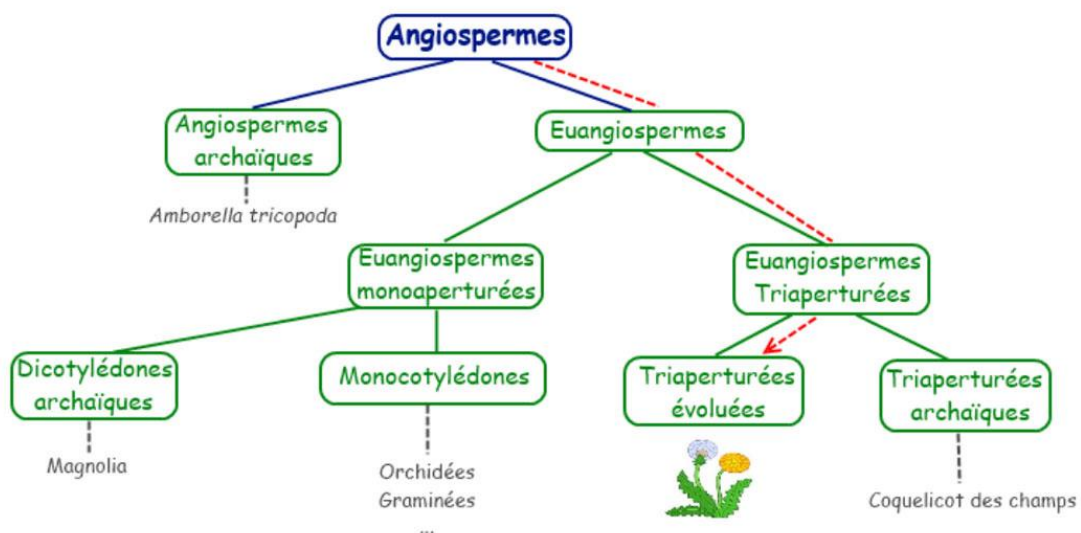
* A multiple fruit comes from a single dialycarpellate flower.

* A compound fruit comes from several flowers in the same inflorescence.

* a fruit resulting from the combination of the ovary of a flower with other organs is a complex fruit or a pseudo-fruit.

III. Systematics of angiosperms :

A-Classical system : based almost entirely on visible morphological characteristics: very practical in the field:



B-Rules of angiosperm nomenclature (based on order) :

Orders: ending in -ALES (e.g. Solanales)

Families: ending in -ACEE (ACEAE) (ex Solanaceae, Solanaceae)

Genera: ex in Solanaceae 102 Genera: Nicotiana, Datura, Solanum,

Species: ex in genus Solanum, including : Solanum tuberosum, Solanum melongena

- **Angiosperms:** 56 orders, 445 families, 250,000 to 300,000 described species , Algeria: more than 3,139 species 750 species are endemic or sub-endemic

Asteraceae

Poaceae

Fabaceae 1/3 of the flora species

Rosaceae

226 threatened species for Algeria