

Plant Classification  
Horticulture 221 - Landscape Plants  
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Kingdom: Plants

Division: Usually the plant kingdom is divided into four divisions as follows:

- (1) Thallophyta - Thallus plants are not differentiated into stems, leaves and roots  
Subdivision:
  - (a) Algae - possess chlorophyll and likely to be found in water, soil or bark of trees, etc. Reproduce by spores and division and produce no seeds (22,900 species)
  - (b) Fungi - do not contain chlorophyll and reproduce by spores and parasitic or saprophytic in nature (73,000 species)
  - (c) Lichens - combination of algae and lichens living together (15,000 species)
  
- (2) Brvophyta - plants in this division have structures which resemble stems, leaves and roots; however, no conducting vessels  
Subdivision:
  - (a) Liverworts - exist in damp places and reproduce by spores (9,000 species)
  - (b) Mosses - reproduce by spores (14,000 species)
  
- (3) Pteridophyta - plants here have highly differentiated conducting systems but do not bear flowers  
Subdivision:
  - (a) Ferns - shade requiring (9,000 species)
  - (b) Club Mosses - (800 species)
  - (c) Horsetails - (25 species)
  - (d) Selaginella - mostly tropical (500 species)
  
- (4) Spermalophyta - Seed bearing plants  
Subdivision:
  - (a) Gymnosperms - seeds of these plants are usually borne naked, that is, not enclosed by a seed leaf or carpel. (No herbaceous gymnosperms) i.e. - Cycads, Ginkgo, Conifers (pine, spruce, juniper, yew, etc.)
  - (b) Angiosperms - seeds of these plants borne in enclosed carpels or modified leaves. Within the angiosperms there are 2 major groups and are grouped into classes.

Class:

- (1) Monocotyledoneae - these plants usually have scattered vascular elements, parallel veins, flower parts in three and one cotyledon or seed leaf (40,000 species - 1/5 of all flowering plants)
- (2) Dicotyledoneae - these plants usually have continuous rather than scattered vascular elements, netted veins, flower parts in fours and fives, and two cotyledons or seed leaves

Order: A natural group of families that show definite affinities, i. e. similar morphological characteristics, and exhibit similar evolutionary trends

Family: An assemblage of genera having similar morphological features, especially of flowers and fruit (i.e. - Pinaceae, Rosaceae)

Genus: A group of species which is as closely related, definable group of plants exhibiting similar morphological characteristics and genetic affinity. The similarity may be in flowers, fruits, stems, leaves or roots.

Species: A species is difficult to define because many characteristics are open to interpretation. The concept of a species can be most readily obtained by considering that a species is a self-perpetuating population that is isolated genetically through incompatibilities, geographical distribution, or by the environment. (Species is the basis of the binomial system of nomenclature.)

Varieties: (Botanical variety) - a botanical group of plants intermediate between species and forma and usually associated with inheritable differences.

Cultivar: (Horticultural variety) an assemblage of cultivated individuals which are distinguished by any characters (morphological, physiological, cytological, chemical or others) significant for the purposes of agriculture, horticulture or forestry and which, when reproduced, either sexually or asexually retain their distinguishing features.

Cultivars may be:

- (1) Clone: a group of plants, uniform in character and derived from a single individual and propagated entirely by vegetative Forma: means.
- (2) Line: a group consisting of a sexually reproducing population of uniform appearance, propagated seeds or by spores, its stability maintained by selection to a standard.
- (3) An Assemblage of Individuals: plants which reproduce either sexually or by apomixis showing genetical differences, but having one or more characteristics by which it can be distinguished, or a uniform group which is first generation hybrid (F) reconstituted on each occasion by crossing two or more breeding stocks maintained by inbreeding or as clones.

Forma: The smallest category used in ordinary taxonomic works. A group of plants exhibiting environmentally caused differences of a minor nature. Their differences are not inheritable, and may be caused by such factors as sunny versus shady conditions, wet versus dry soils, differences in light quality, or wind intensity differences.