

# Important North American Angiosperm plant families: grouped artificially for rapid identification

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## Overview

This is just a starting point. There are exceptions to the characteristics mentioned here and there are of course many more plant families. Abbreviations: lvs=leaves, flwrs = flowers. Regular (actinomorphic) flowers are radially symmetrical. Irregular= bilaterally symmetrical or other.

## Monocot families

### Conspicuous perianth

- **Amaryllidaceae**: scapose umbel
- **Iridaceae**: 3 stamens, inferior ovary
- **Liliaceae**: Infl raceme or panicle, 3-parted stigma, 6 tepals
- **Asparagaceae** (Agavodiales subfamily): stiff rosette basal lvs, *Agave*, *Yucca*, *Dasylirion*, *Hesperaloe*
- **Commelinaceae** | Lvs involute, +/- succulent, swollen nodes

### Inconspicuous perianth

- **Juncaceae**: round solid stems (or rounded 3-sided), 2-ranked lvs, 6 tepals
- **Cyperaceae**: 3-sided stems with edges, 3-ranked lvs, terminal inflorescence
- **Poaceae**: 2-rank flowers

## (eu)Dicot families

flower parts format (calyx, corolla, androecium). “inf” means more than double other floral parts.

### Superior ovary

Petals separate, ovary superior flowers actinomorphic OR zygomorphic

- **Ranunculaceae**: (3-x;0-x; inf.) dissected lvs; *Delphinium*, *Aquilegia*
- **Papaveraceae**: (2-3;4-12;inf.) sepals caducous (easily shed), petals wrinkled
- **Brassicaceae**: (4;4;2+4) 6 stamens with 4 long, 2 shorter, fruit usually a silique, herbs

- **Caryophyllaceae:** (5;5;5 or 10) opposite lvs & swollen nodes
- **Malvaceae:** (3-5;5;inf.) stamens fused around style, stellate hairs, palmately lobed leaves
- **Rosaceae:** (5;5;inf.) hypanthium (perigynous), stipules
- **Fabaceae** (three major clades):
  - Papilionoideae (5;1+2+2;10) pea-like, banner outside of wings
  - Caesalpinioideae (5;5;10) not pea-like, banner inside of wings
  - Mimosoideae (5;5;inf.) stamens obvious. *Prosopis*, *Mimosa*, (and former **Acacia** now *Senegalia* and *Vachellia*).

#### **Petals united, ovary superior and flowers regular (actinomorphic)**

- **Convolvulaceae:** (5;5;5 corolla convolute or twisted
- **Ericaceae:** (4-5;5;5 or 10) united sepals, stamens not adnate to corolla, sometimes bell-shaped flwrs.
- **Polemoniaceae:** (5;5;5) 3-parted stigma, corolla salverform
- **Hydrophyllaceae:** (5;5;5) Inflorescence a scorpid cyme, 2 styles +/- free. Lvs often hairy.
- **Boraginaceae:** (5;5;5) scorpid (coiling) cyme, 4 nutlets, bristly
- **Solanaceae:** (5;5;5) tubular or rotate corolla, stigma capitate
- **Gentianaceae:** (4-5;4-5;4-5) 2 carpels, opposite glabrous sessile or subsessile lvs, stamens alternate with corolla lobes.

#### **Petals united, ovary superior & flowers irregular (zygomorphic)**

- **Lamiaceae** (5;5;2 or 4) opposite lvs, square stem, aromatic, 4-nut, mostly herbaceous.
- **Verbenaceae** (5;5;2 or 4) opposite lvs, square stem, flwrs weakly irregular. *Aloysia*, *Lantana*.
- Former Scrophulariaceae, now **Plantaginaceae** (5;5;2or4) often opposite lvs, fruit a capsule.
- Former Scrophulariaceae, now **Phrymaceae** (5;5;4 in 2 lengths). Stigmas with two lamellas. Often opposite lvs. Monkeyflowers.
- **Orobanchaceae** (2-5;5;4). 5th stamen sterile if present. Mostly parasitic plants. Fruit a capsule.
- **Bignoniaceae** (5,5,4 in 2 lengths) opposite often compound lvs. Tropical and subtropical trees, vines, and shrubs.

#### **Inferior ovary**

- **Onagraceae** (4;4; 8 or 4). Petals separate but tubular hypanthium.
- **Cucurbitaceae** (5;5; 5 sometimes fused to 1-3) Unisexual (imperfect) flowers. Petals united.
- **Rubiaceae** (4-5;4-5;4-5) opposite lvs that are simple and entire or whorled leaves, interpetiolar stipules, tubular actinomorphic corolla.
- **Caprifoliaceae** (4-5;4-5;5 or 4) Zygomorphic tubular flowers, opposite lvs, capitate stigma
- **Myrtaceae** (4-5,4-5,inf.) glandular-punctate lvs.

- **Cornaceae** (4-5;4-5;4-5 or 10) Leaf threads hold parts together when torn, small flowers. *Cornus* (dogwood)
- **Rosaceae** (5;5;inf) Ovaries superior (with free hypanthium) to completely inferior.

### No corolla, usually small flowers

- **Polygonaceae**: 3-merous flowers (*Polygonum* with 5-merous), involucre. herbs and vines.
- **Nyctaginaceae**: involucre, corolla-like calyx, opposite lvs, swollen nodes
- **Amaranthaceae** (including former **Chenopodiaceae**): Scurfy; saline environments. Often reddish stems and lvs. Sepals surround fruit.

### Milky juice

- **Euphorbiaceae**: unisexual flowers or cyathium (some not milky)
- **Apocynaceae** subfamily Asclepiadoideae (former **Asclepidaceae**): corona, opposite leaves
- **Apocynaceae** subfamily Apocynoideae: twisted corolla, opposite or whorled lvs
- **Asteraceae**: tribe Cichorieae: all ligulate (ray) flwrs
- **Moraceae**: *Maclura pomifera* (Osage orange), Mulberry

### Distinctive Inflorescence

- **Apiaceae**: Inflorescence an umbel: often compound: and umbel of umbels.
- **Asteraceae**: Head of flowers.

### Succulents

- **Cactaceae**: Many petals and stamens, inferior ovary, spines
- **Aizoaceae**: many petals or if none then many showy stamens
- **Crassulaceae**: (4-5;4-5;8-10) 4-5 separate carpels
- **Portulacaceae**: (2,4-6;4-inf) Often only slightly succulent

### Shrubs

- **Anacardiaceae**: (5;5;10) Evergreen or deciduous. staminal disk, often aromatic. Fruit a drupe. *Rhus* (sumacs)
- **Rhamnaceae**: (4-5;4-5;4-5) Hypanthium. Many evergreen. Flowers small white or green *Zyziphus* (lotebush), *Condalia*, *Colubrina*, *Ceanothus*
- **Garryaceae** Evergreen, opposite lvs, dioecious with catkins. One genus only: *Garrya*. *Garrya ovata*

## Trees with catkins of unisexual flowers

- **Fagaceae:** monoecious, acorns + similar fruits, both evergreen and deciduous species. *Quercus* (oaks).
- **Salicaceae:** dioecious, deciduous, most common in riparian (steamside) environments. *Populus* (cottonwood and aspen), *Salix* (willows)
- **Juglandaceae:** monoecious, deciduous, pinnate compound lvs, often aromatic and glandular-dotted beneath. *Juglans* (walnut) and *Carya* (pecan)

## Some other woody plant families

- **Betulaceae:** Monoecious, deciduous, lvs simple and serrate
- **Ulmaceae:** Most species monoecious (some with perfect flowers). Lvs alternate, simple and toothed/serrate, often arranged in plane. Flwrs reduced, mucilaginous sap.
- **Sapindaceae:** Includes former Aceraceae. Trees or shrubs (a few vines). Usually pinnate compound lvs: *Sapindus* (Soapberry), *Aesculus* (buckeye), *Ungnadia* (Mexican buckeye). *Acer* (maple) has palmate compound lvs.
- **Rutaceae:** (4-5;4-5;4-5, 8 10 or inf.) Glandular punctate lvs. Aromatic. Citrus family.