

FABACEAE

AKA: THE LEGUME FAMILY

BY: MAYA SEAMAN



Classification —→

Kingdom: Plantae

Order: Fabales

Family: Fabaceae

Commonly known as the legume, pea, or bean family, Fabaceae are a large family of flowering plants that include trees, shrubs, and perennial or annual herbaceous plants, which are easily recognized by their fruit (commonly referred to as pods) and their compound, stipulate leaves.

It is the third-largest land plant family with about 765 genera and roughly 20,000 known species. The five largest genera are Astragalus, Acacia, Indigofera, Crotalaria, and Mimosa.

The family is widely distributed, found almost everywhere except Antarctica and the high Arctic.



Kudzu (*Pueraria montana*)

Traits →

Types of Fabaceae growth include trees, shrubs, herbaceous plants, vines, and even epiphytes. The herbaceous plants can be annuals, biennials, or perennials. They are upright plants, often with alternate and compound leaves, and in some species the leaflets have evolved into tendrils.



Carob (*Ceratonia siliqua*)

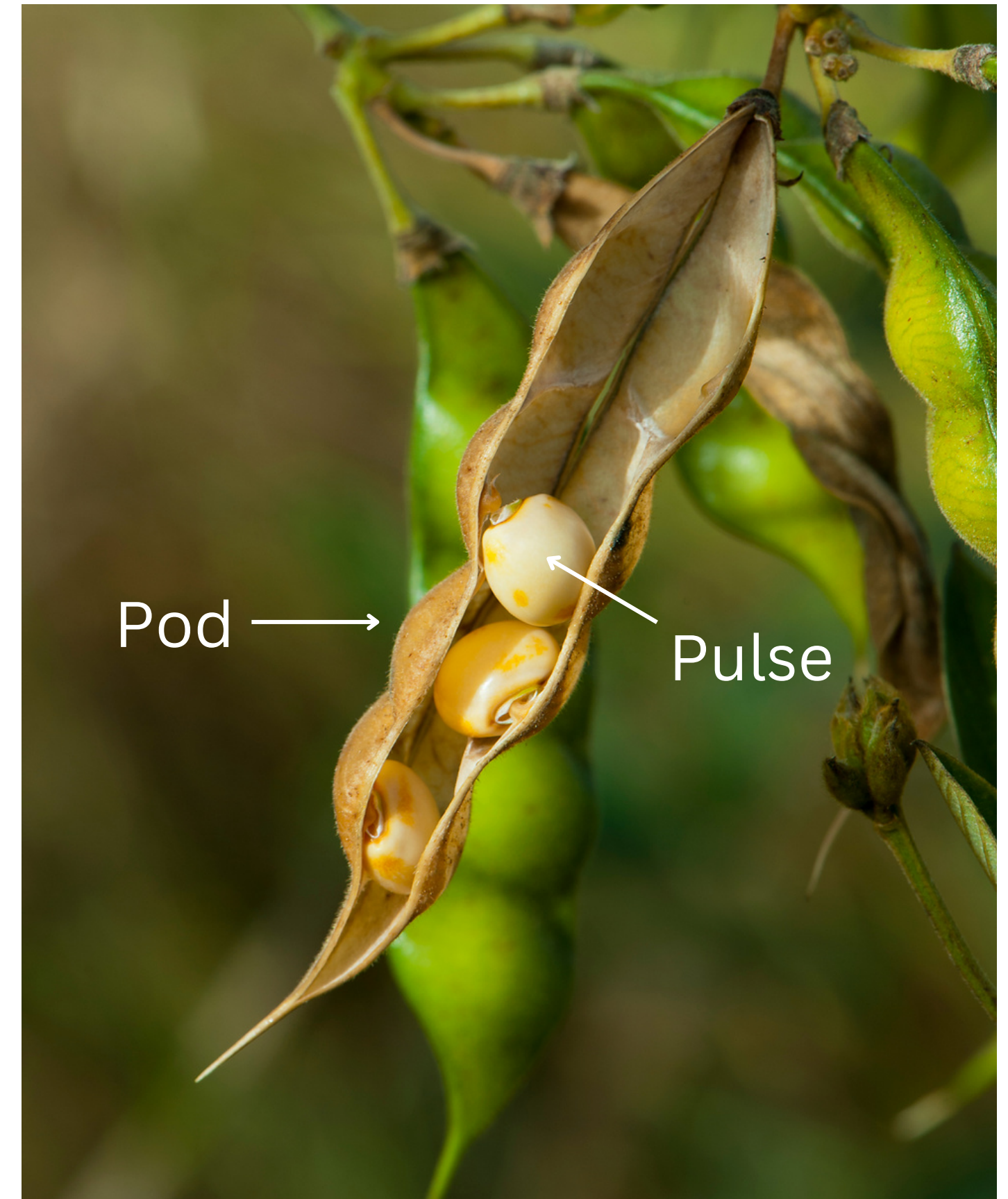
Fabaceae's most well-known trait is probably its fruit, which is an oblong, dry pod that opens along a seam on two sides.

A Word on Legumes —→

"Like pulses in a pod"

Although used interchangeably, the terms “legumes,” “pulses,” and “beans” have distinct meanings. A legume refers to any plant from the Fabaceae family including its leaves, stems, and pods.

A pulse is the edible seed from a legume plant. For example, a pea pod is a legume, but the pea inside the pod is the pulse. The seeds or pulses are what we typically eat.



Traits



Flowers

The flowers often have five fused sepals and five free petals. They can have up to ten stamens and one elongated superior ovary with a curved style.

Fabaceae are typically entomophilous, which means they're pollinated by insects, so the flowers are showy to attract pollinators.



Hong Kong Orchid Tree (*Bauhinia blakeana*)



Wisteria (*Wisteria sinensis*.)

A few exceptions to the rule are several bean, pea, and peanut species, which are self-pollinating and don't depend on wind or insects for pollination.

Traits —→

Roots & Nitrogen Fixation

Many Fabaceae host bacteria in their roots within structures called root nodules. These bacteria have the ability to take nitrogen gas out of the air and convert it to a form of nitrogen that's usable by the host plant. This process is called nitrogen fixation.

Since they make their own nitrogen, Fabaceae can reduce the need for nitrogen fertilizers and thus reduce costs for farmers and gardeners.



Eco
Friendly

Legumes release up to seven times less greenhouse gas emissions per area compared to other crops.



Natural
Fertilizer

Legumes are commonly used as natural fertilizers during crop rotation because they can replenish lost nitrogen in the soil.

Common Uses →



AS A SOURCE OF FOOD

Fabaceae includes a number of agriculturally important plants like soybeans, beans, peas, chickpeas, alfalfa, peanut, carob, fenugreek, and licorice. Alfalfa, clover, and vetch are also important forage for livestock.



INDUSTRIAL USES

Some Fabaceae species produce several well-known gums that are used for pharmaceutical, cosmetic, food, and textile purposes. For example, gum tragacanth (*Astragalus gummifer*), gum arabic (*Acacia senegal*), and guar gum (*Cyamopsis tetragonoloba*) are widely used as binding and stabilizing agents.



AS A SOURCE OF COLOR

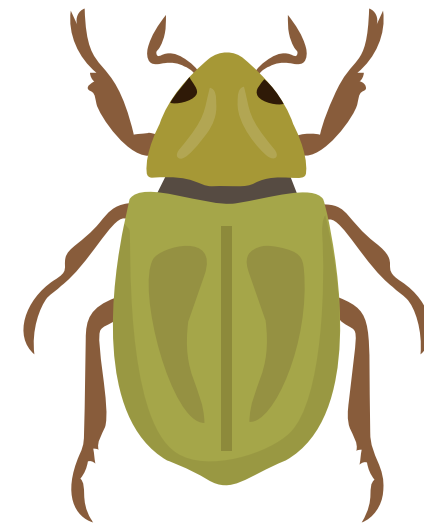
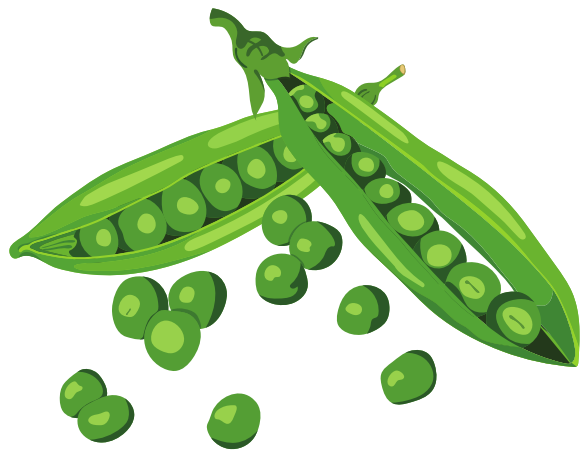
Several species of Fabaceae are used to produce dyes. Indigo dye is extracted from the indigo plant *Indigofera tinctoria* that is native to Asia. In Central and South America, the historically famous Maya blue comes from from *Indigofera suffruticosa*.

But back to the peas we all know and love

A Brief Growing Overview

GROWING PEAS

Peas are annual legumes that like cool weather. There are two types of garden peas: pole types which require a trellis, and bush types. Bush peas have a shorter, earlier production period than the pole types.



PESTS & DISEASES

There's a lot, including three pests that have "pea" in their name (pea weevil, pea leaf weevil, and the pea moth).

For a full list visit <https://ipm.ucanr.edu/home-and-landscape/peas/index.html> or <https://vric.ucdavis.edu/pdf/pea.pdf> for a list of disease resistant varieties.



Best peas for California: Snow, sugar, and China peas

A pea-sized planting checklist:



Plant during cool temperatures. Peas will germinate at soil temperatures of 45° F, and can tolerate mild frosts.



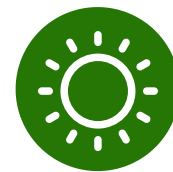
Plant in loamy, moist, well-drained soil with a pH of 6.0–6.5. Add compost or organic matter to amend, but typically peas don't need fertilizer.



Direct seeding is the preferred method, sown 1 to 2 inches deep, in double rows spaced 3 to 6 inches apart. Don't forget to prepare your trellis if you're using one.



Peas are shallow rooted and generally do better with light, frequent irrigation. Do not overwater.



Peas like 6–8 hours of full sun, but too much heat can scorch them so a shade cloth may be needed depending on your site.



Harvest when the peas feel slightly enlarged inside the pods, but before they form sizeable peas. The pods should still be flat. If you wait too long, the peas get starchy and tough.

Good luck!



THANK YOU FOR WATCHING MY PEASENTATION