

*Psophocarpus tetragonolobus*

# Winged Bean

also known as Goa Beans

Winged bean is a tropical, short-lived perennial legume, usually but not exclusively raised as an annual even in the tropics. It was Walt Disney's favorite "food of the future", tho its cultivation has not spread significantly outside of areas where it is traditionally grown in much of tropical Asia. The center of its cultivation is in the border regions between India and Myanmar, and on New Guinea, both of which areas having many landraces. It is famous for supplying multiple edible parts:

- young leaves as a leafy green
- flowers added to salads or cooked with other vegetables for a mushroom-like flavor
- immature pods eaten like french beans
- fully mature beans can be eaten as a bean, or used like soy to make other products, though it's worth pointing out that their protein levels are not quite as high as soy (they're probably not as estrogenic either).
- the small tuberous roots are edible; starchy like a potato but much higher in protein. Different landraces produce more or less tubers.

Fully ripe beans keep well in storage, like other kinds of beans. Tubers keep for up to a few months. Everything else is usually eaten fresh, tho the leaves can be dried for future use.

The most commonly-eaten part is the unripe pods, often referred to as "the green-bean of the tropics". The most practical way of getting full use out of the plants might be to have some plants for producing greens and pods, other plants for producing a light harvest of greens and fully ripe seeds, and serendipitously harvesting any tubers that might be found under older plants targeted for culling & replacing.

Where it is traditionally grown, winged-bean roots nodulate prolifically, meaning they're harboring nitrogen-fixing bacteria. It's possible that they can adapt to many different bacterial species. You'll find out when you raise them.

## **Process of raising winged-beans from sowing to consumption:**

SOWING: plan to sow the beans at the beginning of the rainy season. Best growth temperature: day: 77-89°F (25-32 °C); night above 64 °F (18 °C) 3

Scarify the seeds or soak them overnight before planting.

Sowing depth is one inch.

If planting in rows, plan for ultimate spacing of 2 feet per plant, 4 feet between rows.

Alternatively, you could plant them at the base of tripods, ultimately 1 plant per pole, with enough clearance between tripods for working around them.

Days to germination: 1 to 2 weeks

Plants can also be propagated by tubers if they produce any, tho to keep your garden clean it would be best to regularly raise fresh seed.

**SUPPORT:** Winged beans are climbers very much like pole beans. Their support has to have components fine enough that young slender plants can clamber up (timber bamboo is too fat), but has to be strong enough to support the weight of the mature plants.

**FIRST HARVEST:** Wait for the plants to bloom. Take immature pods if you have plenty of backup beans. Pods are usually harvested 2-3 weeks after fruit set while they are still tender and not very fibrous. (Flexible enough to bend without breaking.) They grow rapidly after the flowers are produced and reach their mature size in about 21 days. As the pods begin to mature, they lose their shiny appearance and develop fiber. **SCHEDULE HARVESTS 1-2 TIMES PER WEEK** over the course of several months. If you need dry beans, let the pods ripen completely but harvest them promptly and frequently, *as the pods shatter*.

**SUBSEQUENT HARVESTS:** Fresh flushes of new leaves on maturing plants can be used at any time, but especially during the off-season when vegetative growth is abundant and the plants are not in bloom. You can harvest up to 10% of the foliage. Stop harvesting when blooming resumes.

**FINAL HARVEST:** dig around looking for tubers when culling old plants after they senesce for the season.

#### **STORAGE:**

Dry, fully-ripe winged beans can be stored for months, even better than most other beans and pulses. The tuberous roots will keep for up to a month or two. Everything else should preferably be used fresh.

#### **SAMPLE USES IN THE KITCHEN:**

Leaves: sauté with garlic, salt, & olive oil

Pods: cut along the diagonal (aka bias cut) to expose more cut surface. You can blanch for about 1 minute in near-boiling water and use in a salad, or further stir-fry it briefly with garlic and either red or black pepper flakes.

Fully ripe beans could be used like any typical bean or pulse. They could also be soaked and ground in hot water to make a plant milk similar to soy-milk. Winged-bean milk could be further processed with a coagulant to make winged-bean daufu (“tofu”). The beans could also be soaked then inoculated & cultured to make tempeh.