

Winged Bean and the Reawakened 25

WINGED BEAN IS AN UNDER-UTILIZED LEGUME THAT HAS GREAT POTENTIAL in strengthening food security and safeguarding the environment. Not only are its seeds high in proteins and carbs, making it a source of nutrients that is comparable to soybean, but every part of the plant is also edible: shoots, flowers, leaves and seed pods. As a nitrogen fixing plant, winged beans can be used to reduce the use of fertilizer and promote a more sustainable way of farming by being used for intercropping and rotations. Research organizations are playing a crucial role in this rediscovery developing new farming and processing techniques that can allow farmers to place their products in vast markets. This bean has the ability to replace soybeans on tables across the world.



WINGED BEAN

Psophocarpus Tetragonolobus

Origin: Papua New Guinea/Indonesian Islands
Grown in South and Southeast Asia
Fully edible nitrogen-fixing plant, rich in proteins and carbohydrates

Winged bean is an under-utilized legume that today has been investigated for its great potential in strengthening food security and safeguarding the environment. Not only are its seeds high in proteins and carbs, making it a source of nutrients that is comparable to soybean, but every part of the plant is edible: shoots, flowers, leaves and seed pods. Being a nitrogen fixing plant, winged beans can be used to reduce the use of fertilizer and promote a more sustainable way of farming by being used for intercropping and rotations. Research organizations are playing a crucial role in this reawakening, developing new farming and processing techniques that can allow farmers to place their products in new markets. This bean is in the wings to replace soybeans on our tables.

BOTANY

The winged bean is a climbing perennial with a thick stem that can reach from 3-3.6 meters high. The roots are fibrous and typically grow into tubers which can also be eaten. The flowers are borne on an axillary raceme which can grow to 15 centimeters long. Typically, there are two to ten flowers ranging in colors from white to purple to blue. The leaves are trifoliate with long, stiff petioles. The pods vary from producing five to twenty seeds, but have characteristic serrated wings and can vary in color from white to yellow to brown to black (NZDL).

CULINARY USE

The winged bean is a nutritious, versatile ingredient used in South Asian countries in malluns and curries, while East Asian countries often use the beans in salads and stir fries (ECHO). All parts of winged bean plants are edible; the shoots, stems, flowers, roots, leaves, flowers, and pods can be stir fried, blanched, or steamed (Mother Earth). The pods, the most frequently used part of the plant, taste similar to most pea varieties, but with a bright, earthy aftertaste. Although cooking the seeds can be time consuming, they can be dried then prepared like beans. Additionally, the seeds can be pressed for a neutral oil. If only the pods are harvested for human consumption, the leaves can be used for animal feed. Producing value-added products is possible, but winged beans remain underutilized.

NUTRITION AND MEDICINAL USE

Winged beans boast a strong, robust nutritional profile, making them a dietary powerhouse. The leaves provide vitamin A, both the leaves and pods contain vitamin C (Motis). Like other legumes, the seeds are a great source of protein, and produce a low-cholesterol oil (Kadam and Salunkhe). The seeds contain up to 37% protein, while the tubers can contain up to 20x more protein than potatoes, another notable tuber. Wing beans also contain high levels of phosphorus, iron, and vitamin B (Motis). High protein content may be especially useful to mitigate protein calorie malnutrition developing countries in the subtropics and tropics, the winged bean's natural habitat.

AGRICULTURE

The Winged Bean originated in the tropics, and therefore thrives in hot humid climates. It is drought sensitive, so mulching is helpful to retain moisture during dry seasons and enhances tuber development during wet and dry seasons. Day-neutral varieties can be grown year round, but short-day varieties will produce flowers and fruit when the days become shorter. A trellis is typically needed to support this vigorous vine to help improve leaf and pod yield. For improved tuber production, trellis the plants and pluck the flowers. The winged bean has few issues with insect pests, but is susceptible to a number of fungi such as leaf spot and powdery mildew that can spread quickly (ECHO).

HISTORY

The winged bean has an unknown origin, because no wild varieties have been found. It likely originated in West Africa or Melanesia. One researcher argues that it seems to have only been present for a long time in New Guinea. It has spread to many places including Southeast Asia, India, West Africa, and equatorial Africa. Evidence suggests that it mostly likely originated in Papua or New Guinea. In New Guinea it is grown for the pods, grains, flowers, leaves, and tubers. Despite its blurry past, the winged bean is cultivated today in tropical and subtropical regions and provides excellent potential for increasing food security (Economic Botany).

RESEARCH

In 1980, the International Council for Development of Underutilized Plants (ICUDP) funded a dedicated winged bean research center in Sri Lanka. The ICUDP spearheaded an international assessment of the winged bean's ideal growing conditions and nutritional benefits. The initiative's resulting studies generated much of today's understanding of winged beans. However, the ICUDP's study ended in the 1980s, and winged beans remain an underutilized and under-studied crop. In order to increase winged bean growth, efforts should be taken to examine the winged bean germplasm, which could determine winged bean's origin. Further, more efforts must be taken in order to map winged bean varieties and discover potentially favorable traits. Any future research should prioritize traditional knowledge of winged bean cultivation and focus on improving cultivars' palatability and nutritional value.

CUISINE

- [Winged Beans in the Sri Lankan Diet](#)
- [Stir Fried Wing Bean](#)
- [Pork and Winged Bean](#)
- [Wing Bean Salad Recipe ยำถั่วพุ่ม - Hot Thai Kitchen!](#)
- [Sirahu Avarrai Poriyal / Winged Beans & Moong Dal Sabji](#)

SOURCING

- [Winged Bean \(75 days\) Seeds](#)
- [Winged Bean Seeds](#)
- [Winged Bean seeds](#)

COMMUNITY RESOURCES

- [Winged Bean Basics and Seed Saving](#)
- [Wing Beans Information and Facts](#)

RESOURCES

- [ECHO](#)
- [NZDL](#)
- Motis [Wing Beans Revisited](#)
- [Winged Bean Information](#)
- Kadam and Salunkhe [Nutritional Profile Winged Beans](#)
- [Economic Botany](#)
- [Winged Bean Research](#)
- [Mother Earth](#)

