

## Winged bean Coconut Milk Sauce Salad

(Source: Home Economics Department, Indonesian Vegetable Research Institute)



### Ingredients

- 1 kg immature winged bean fruits, peeled and cut crosswise into 2 cm long slices
- 6 hot pepper
- 8 shallots
- 5 cloves garlic
- 4 tablespoons red sugar (made from coconut juice or aranga)
- 8 tablespoons fried ground peanut
- 2 tablespoons fish soya sauce
- 2 tablespoons lemon juice
- 400 ml coconut milk concentrate from one coconut fruit
- "Limau" citrus
- fried shallot, sliced

### Procedure

- In a pot, pour in water and add winged beans.
- Bring to a boil.
- Drain and set aside.
- To prepare sauce, fry hot pepper skin, shallots, and garlic in oil.
- Add ground hot pepper, shallots, garlic, and red sugar.
- Stir in ground peanut, fish soya sauce, and lemon juice.
- Pour in coconut milk evenly, stir continuously, and bring to a boil.
- Remove from heat and let it cool.

- In a serving dish, pour sauce over winged bean slices and sprinkle with "limau" citrus juice.
- Garnish with slices of fried shallot.

### Other ways of food preparation

- Young shoots and leaves are consumed raw or cooked as a green vegetable or added to soups and curries.
- Green pods are commonly used as a vegetable (Southeast Asia).
- Also green pods are used as a salad or served together with the traditional "nam prik" sauce as a dip (Thailand).
- Young leaves and flowers are eaten as a salad (Papua New Guinea).
- The flowers can be eaten raw, fried, or steamed, and used as coloring for rice and pastries.
- The half-ripe seeds can be cooked like peas or kidney beans.
- Seeds can also be used to make edible oil, milk, tempeh, tofu, and miso.
- Tubers are used (Papua New Guinea and Burma).

## Know Your IVs



## Winged bean



**AVRDC**

The World Vegetable Center



Republic of the Philippines  
Department of Agriculture  
BUREAU OF AGRICULTURAL RESEARCH



## Introduction

Winged bean or *Psophocarpus tetragonolobus* gets its name from the greek word "Psophocarpus" which means "noisy fruit". It is so called because the mature pods make a loud popping noise when they split open. Despite the fact that it has many uses, and that almost the entire plant is edible, winged bean is one of the underutilized vegetable legumes in the tropics. Its production is mostly confined to homegardens and backyard cultivation. With its protein-rich seeds and pods, winged bean offers great promise as a cheap source of protein for underdeveloped countries.

## Local Name

English — *winged bean, asparagus bean, goa bean*

Bangladesh — *kamrana sheem*

Cambodia — *prâpiëy*

Indonesia — *kecipir*

Laos — *thwàx ph'uu*

Malaysia — *kecang botor*

Philippines — *kalamismis, sigarilyas, kabey, seguidillas*

Thailand — *thua-phu, tua-puin-muang*

Vietnam — *d[aaj]u r[oof]ng, d[aaj]u kh[ees]*

## Biodiversity

The exact origin of winged bean is unknown but reports indicated East Africa, India, Papua New Guinea and Indochina-Indonesia as possible centers of origin. Indonesia and Papua New Guinea are considered as centers of greatest diversity. The major areas of domestication are Burma and Papua New Guinea, where it is cultivated on field scale. Winged bean is primarily grown as a horticultural plant in East Africa, India, Sri Lanka, Thailand, Indochina, Malaysia, Indonesia, Philippines and the Pacific. It is now widely distributed in the tropics and subtropics.



- Winged bean is a high-climbing perennial vine with twining stems and trifoliate leaves.
- Flowers are usually pale blue.
- Pods are 6-9 inches long.
- Pod color range from pale green to green and purple with four fluted wings along its entire length.
- When mature, the pods turn brown and split open to release the seeds.
- Fresh pods have a chewy texture and taste quite sweet.
- Cooked leaves taste much like spinach; flowers like mushrooms; roots have a nutty flavor.

## Cultivation

- Their viny growth require support (that is on other crops, trees, poles, trellises, wires, fences or walls).
- Suggested spacing: rows 2 m apart; 1-2 m between hills within a row; 2-3 seeds/hill.

## Nutritional value

- Immature green pods are rich in calcium, iron and vitamin A.
- Protein content of the pods ranges from 1-3%, comparable with other vegetable legumes.
- Leaves contain 5-7% protein, and are excellent source of vitamins A and C, and minerals.
- Fresh tubers contain 8-10% protein, and high in carbohydrates (30%), calcium and phosphorus.

- Essential amino acids are present in low levels.
- Winged bean seeds are very nutritious.

Table below shows the nutritive value of edible portion per 100g (pod).

Nutrition Value (per 100 g edible portion)	
Water	11 g
Protein	33 g
Fat	16 g
Carbohydrates	32 g
Fiber	5 g
Ash	3 g
Energy value	1697 kJ/100 g

## Utilization

- Almost all parts of the winged bean are edible and nutritious, namely, leaves, flowers, pods, seeds, and tuberous roots.
- Aside from its use as food, winged bean can also be utilized in many ways.
- It has exceptional nitrogen fixing properties.
- As a green manure, it is usually intercropped with bananas, sugarcane, taro, and other tropical crops.
- Stems, leaves, and processed seeds can be used as fodder.
- Seeds used as sources of edible oil, milk, flour, and animal feed.

## References

AVRDC Vegetable Genetic Resources Information System (AVGRIS). 2005. AVRDC-The World Vegetable Center, Shanhua, Tainan, Taiwan. Website: <<http://203.64.245.173/avgris/>>

Christman, S. "Psophocarpus tetragonolobus." *Floridata*. 17 August 2003. Floridata.com L.C. 28 October 2004 <[http://www.floridata.com/ref/p/psop\\_tet.cfm](http://www.floridata.com/ref/p/psop_tet.cfm)>

Facciola, S. 1990. *Cornucopia, A Source Book of Edible Plants*.

Indigenous Vegetables of Southeast Asia. AVRDC— The World Vegetables Center. [http://203.64.245.173/v\\_sea/](http://203.64.245.173/v_sea/)

PCARRD. 2007. *Mga Lutuing Katutubong Gulay*.

"Psophocarpus tetragonolobus-winged bean." *Asia Food*. Asia Society. 29 October 2004 <[http://www.asiafood.org/glossary\\_1.cfm?Alpha=W&wordid=3277&startno=1&endno=25](http://www.asiafood.org/glossary_1.cfm?Alpha=W&wordid=3277&startno=1&endno=25)>

"Psophocarpus tetragonolobus-winged bean." *Tropilab*. Tropilab Inc. 28 October 2004 <<http://www.tropilab.com/psopet.html>>

Siemonsma, J.S. and Kasem Piluek (eds.). 1993. PROSEA 8: Vegetables. The Netherlands: Pudoc, Wageningen. 1994. 412 p.

Siemonsma, J.S. and Kasem Piluek (eds.). 1993. PROSEA 8: Vegetables.