



# Guide to Asian Specialty Vegetables in the Central Valley, CA



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# Guide to Asian Specialty Vegetables in the Central Valley, CA

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Fresno County has the largest number of Asian farm operators in California. Tulare, Merced, and San Joaquin counties also have high numbers of Asian farmers. This accounts for the significant acreage of Asian specialty crops being grown in the county and the Central Valley. As seen in the examples, below there are over 2000 acres of Asian vegetables in Fresno alone:

## The Crops:

Chinese long beans	128 acres (2000 crop year)
Bittermelon	86
Bok choy	82
Daikon	137
Oriental eggplant	111
Gailon	238
Lemon grass	68
Donqua	42
Moqua	50
Opo	35
Sugar peas	138
Sinqua	44

Others include you choy, gai choy, Ceylon spinach, water spinach, okra leaf, sugar cane, taro, mustard greens, medicinal herbs, basils (holy, Thai), burdock, Amaranth, multiplier onions, water chestnuts, Chinese cabbage, Japanese pumpkin, chayote, water cress, various other beans, and snake gourd.

## The People:

Fresno county has over 4,000 small family farmers (about 62% of all farms) according to the 1997 Ag Census. Almost half of all family farms are operated by minorities (54% Asian, 42% Hispanic). About 62% of the Asian farmers are Hmong from the mountain regions of Laos and 30% are Lao, from the lowlands of Laos.

## What's In A Name?

Common names (and spellings) vary widely depending on the ethnic group and area. **Singua** (*Luffa acutangula*) for example, is also called sing gua, see gwa, see kwa, shingua, si gua, Chinese okra, angled luffa, vegetable sponge, and loofah.....**Donqua** (*Benincasa hispida*) is also called don gua, winter melon, and doongua.

## Cucurbit Family

bittermelon  
singua  
kabocha

wintermelon  
opo  
snake gourd

moqua



**Bittermelon** - *Mormodica charantia*: a native of India, is a member of the Cucurbit family. It is usually grown on a trellis system and is roughly about the size of a zucchini, but warty. The only pests found attacking the plant in the Central Valley are parasitic root knot nematodes. Fruits are eaten while still green and before there is any color change. Bright orange fruits are saved for seed. Bitterness (quinine content) increases with age of the fruit. Several varieties are available which can range from 3-4" in length to almost 12". Trellised. Warm season.

Salt reduces the bitterness. Slice lengthwise and stuff with pork or seafood and top with oyster sauce; or cut halves into ¼ inch chunks and add to meat/vegetable stir-fries. The young leaves and tips can be steamed.



**Opo** – *Lagenaria siceraria*: also called a type of bottle gourd, has large white flowers and may have originated in either Mexico or Egypt. Fruits are very smooth, hairless, and normally harvested when 10-12 inches long. This plant, like most other cucurbits, is susceptible to nematodes, aphids, leafhoppers, several viruses, spider mites, and a lepidopterous caterpillar that causes cosmetic damage on the fruit. Trellised. Warm season.

This squash is the equivalent of the Italian cucuzza. It is commonly used in soups and stir-fries. The taste is mild.



**Smooth luffa** – (*Luffa cylindrica*): Dishrag gourd (loofah) originated in India and was later taken to China. With the exception of the cosmetic damage from a caterpillar, it has the same pests as opo. Left to mature on the plant the squash will produce the familiar “Luffa sponge” found in stores and used as a dishrag or great back-scrubber (hence the name). Soak the light brown mature gourd in 10% bleach for 24 hours, then peel off the skin and allow dry. Trellised. Warm season.

Most of the luffa grown in the Central Valley is for the young squash like fruits. Slice Luffa into 1” pieces and stir-fry with shrimp in a tempura batter and cooked in oyster sauce; or simply stir-fry in butter by itself or with other vegetables. Be careful not to overcook as it will become mushy.

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**Angled Luffa** - (*Luffa actuangula*): is very similar to the smooth luffa except that the actuangula seems somewhat more susceptible to spider mite attacks. Except for Chinese winter melon, all of the cucurbits discussed are trained on trellises to encourage straighter fruits, which can become more curved if allowed to grow on the ground. Warm season.

The quality of this squash as a sponge gourd is not as desirable, however, in stir fries and other foods it excels and does not become mushy as readily. It is sweeter and has a better flavor than zucchini. This type should be peeled, as the ridges are fairly hard. Most plantings will have both types of luffa for the varied tastes of consumers, but the popularity of angled luffa predominates.

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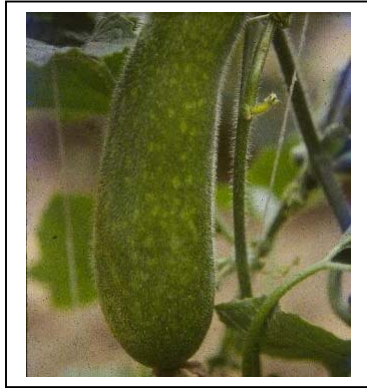


**Snake gourd** – (*Trichosanthes anguina*): is a night-blooming vegetable squash with white blossoms. Usually a small stone is suspended from its apex to keep it growing straight and long. The genus Thichosanthes is Greek meaning “hair flower”, which describes the fragrant and delicately fringed white corolla (petals).

The young fruits are cut into pieces and boiled. As the fruit ages, it becomes bitter. Like many other bitter fruits, the bitterness is viewed as a tonic in natural medicine.

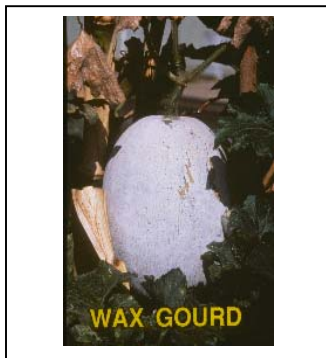
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**Hairy Melon/Fuzzy Gourd - (*Benincasa hispida* var. *chiehgua*):** This squash is little brother to the Chinese winter melon. Most often called Moqua, this squash is eaten in the immature stage as is opo/sinqua and before it has developed the white wax bloom on the skin. It has the same pest problems as angled luffa and is also trellised. Warm season.

As the name implies, it is quite hairy and will need to be peeled. It has a refreshing delicate flavor and is often included in stir-fries and soups. It can be stuffed with shrimp, pork, bamboo shoots, bok choy, and onions and mixed with soy sauce, ginger, garlic, and sesame oil.



**Chinese Winter Melon – (*Benincasa hispida*):** Donqua melons usually weigh in excess of 30 pounds and are harvested when mature and have developed the white wax bloom on the skin. Because of its size, it is not trellised but allowed to spread over the ground. Like the other cucurbits, it is attacked by spider mites, aphids, nematodes, and viruses.

The mature melon can be stored for 3-4 months over the wintertime. The flavor is mild, white and is a main ingredient in chicken broth soup with other vegetables or stir fry with pork, onions, and mizuna. An elaborate dish is made by carving the skin like a cameo, then filling the melon with other vegetables and meat. Steam until the melon flesh is soft.

## Legume Family -

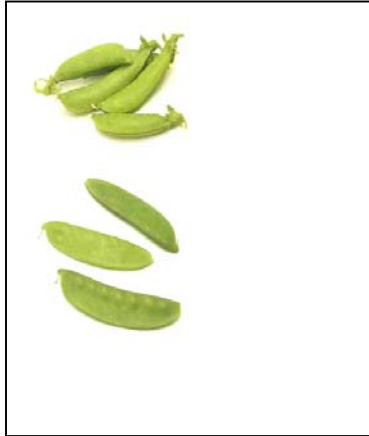
Chinese long beans  
Hyacinth bean

edible pod sugar peas



**Chinese long beans – (*Vigna sesquipedalis*):** Also called the asparagus bean and yardlong bean, the plants are long training vines grown on trellises. The plants are susceptible to black bean aphids, spider mites, nematodes, and mosaic viruses. The plant is more closely related to blackeye peas than to the common green snap bean. Dark and light green varieties are available as well as a red type. The darker varieties are generally preferred. Trellised. Warm season.

Cut into 2” pieces and add to various stir-fries. The paler green is sweeter and more tender than the dark green.



**Snap pea (top) and Snow pea (bottom) – (*Pisum sativum*):** This is the only cool season member of the group. It deteriorates quickly in the heat of summer. The plants are trellised to facilitate the picking, however, if grown for the tender shoot tips, they are usually left untrellised. Problems encountered in Fresno include thrips, aphids, caterpillars, and a devastating fungal disease called *Ascochyta*.

The pods and seeds are edible and are essential in oriental dishes. They are used in soups, beef and other meat dishes, stir-fry, and sukiyaki. Snow peas are flat and should be trimmed at both ends. Snap peas are more filled out and do not require trimming. Stir-fry in sesame oil for 2-3 minutes and toss with a bit of soy sauce. The tender tips can be boiled like spinach or added fresh to a green salad for a special treat.

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**Hyacinth bean - (*Lablab niger*):** is a vigorous twining vine. Lablab is an Arabic or Egyptian name describing the rattle of the seeds in the dry pod. Pods are oblong and flattened. The most popular strains have purple tinting at the margins. It is native to India. Warm season.

The fresh immature pods cannot be eaten raw because they contain a poisonous glycoside that is destroyed when they are boiled.

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## Monocotyledons – grasses, sedges, etc.



**Lemongrass – (*Cymbopogon citratus*):** probably originated in either Malaysia or India. It is a perennial grass propagated entirely vegetatively from stems as seed is seldom produced. Usually planted in March, the earliest harvest is October, though it can be left growing until the market price increases. In the Central Valley, 5-7 rows at a time are covered with clear plastic to protect the plants from 28° freezes, which can kill the above ground portion. Below this temperature, the plastic may not help. The only pest attacking the leaves is a fungal rust. Warm season.

Stems are chopped or pressed and added for lemony flavoring to many dishes. Leaves and/or stems can be used to make a hot/cold tea drink. The plant also makes a beautiful ornamental.



**Multiplier Onions – Japanese bunching onions – (*Allium fistulosum*)** This species will cross-pollinate with the common onion. It is a perennial, although it is usually harvested the same year. It is a member of the lily or amaryllis family. Cool season.

Multiplier onions are used in much the same way as the common bunching onion, for flavorings and stir-fry.



**Water Chestnut – (*Eleocharis dulcis*)** is a member of the sedge family (**Cyperaceae**) with leaves that resemble coarse chive leaves, erect and stiff (like rushes). The plant grows in 3-5” standing water and is sensitive to drying out. The nuts grow below ground and are ready in about six months. A 25-gallon container may have as many as 40 nuts. In Asia they are often found in rice paddies or ponds with lotus plants. Warm season.

Water chestnuts have a crunchy, nutty flavor and should be added towards the end of cooking to preserve the crunchiness. Peel the dark brown-black peel to expose the cream-colored nut inside. They can be used fresh in a tossed salad or in many different stir-fry dishes combined with mushrooms, bamboo shoots, snow peas, bean sprouts, scallions, and taro root. Cooked shredded chicken or pork can be added to the vegetables.



**Japanese yam – yamaimo – nago imo – (*Dioscorea batatas*):** In tubes this root will grow to 3’ long vertically in the soil. Usually the top 1/3 of the tuber is saved for cold storage and planting the following spring. At the leaf axils, aerial tubers form which can also be used for propagation however it will take more than one year to get a harvestable crop. Yam family. Warm season. Trellised. (Dioscoreaceae)

The skin is brownish with white starchy flesh that turns mucilaginous when cut or grated.





**Taro – eddoes – dasheen – (*Colocasia esculenta*):** is a member of the Araceae family. It is grown primarily for the corm or swollen stem base. The stem and corm contain oxalates that can be irritating to the skin, which peeling removes. There are some varieties available very low in oxalates. Two main types of taro are – “common taro or Dasheen” that produces one large corm encircled with rings and “Japanese taro or eddoes” (var. antiquorum) that produces numerous smaller corms and tolerates a more temperate climates.

Taro is the main ingredient in poi. It has a starchy, sweet flavor similar to a potato but nutty like a chestnut. The texture gets more doughy as you cook it. Use it like a potato. Never eat taro raw.

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## Solanum Family -

eggplant

Thai pepper



**Thai Pepper - (*Capsicum annuum*):** other varieties are grown as well, including the jalapeño, serrano, etc. The Thai peppers are very hot (hotter than the jalapeño and serrano), which does not diminish when cooked. Caterpillars, spider mites, aphids, viruses, and phytophthora root rot are all problems found in Fresno County. Capsaicin in the chili is responsible for the fiery heat and can burn the skin for up to 12 hours. Warm season.

Wear gloves when slicing the peppers and take care not to rub your eyes. Milk, cottage cheese, yogurt, starchy foods help take away some of the heat in your mouth; definitely not beer, water. Chopped peppers fried lightly in oil for a sauce is used over any meat, fish, in noodle dishes and soups.

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**Eggplants - (*Solanum melongena*):** The typical eggplant usually seen in the store is the globe-shaped American (see picture below). However, many of the other types are better tasting, such as the Chinese (long narrow shown in the picture to the left) and Japanese. Other Asian types include: Easter egg, Zebra, Hmong, teardrop, Italian, and Thai). Pest problems include hornworms, armyworms, spider mites, lygus, aphids, and thrips. Warm season.





Eggplant stems and caps are cut off, halved lengthwise, brushed lightly with oil, and grilled until tender. It combines well with other vegetables in sautés and casseroles. For kabobs cut into chunks and put on skewers. Various types of pickles are made depending on the country. Japanese submerge pieces into *miso* –a soybean paste- for three or four months. Eggplant chunks can be dipped in a tempura batter (flour, sugar, salt, egg, water) and deep-fried. Eat with a shrimp cocktail sauce for a great treat.

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## Crucifer Family – (Mustard)

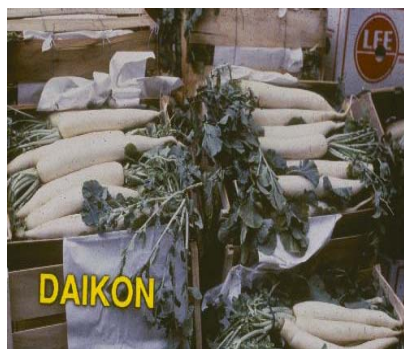
bok choy, etc.  
gailon

daikon  
Chinese cabbage



**Bok Choy and other Choys** – (*Brassica rapa var. chinensis*): All are non-heading types of cabbage. Bok choy (pak choy), choy sum (var. *purpurea*), yu choy (similar to bok choy except it is more delicate and sweeter), gai choy (*B. juncea*), and tai cai (*B. chinensis*) are all closely related to gailon, mibuna, mizuna, Napa, and turnip. Bok choy has green leaves and white midribs. Baby bok choy (Shanghai) has green midribs and leaf bases. Cool season.

All are used in stir-fried dishes with meat and other vegetables. The stem and leaves are also used in soups. They are also good raw in salads.



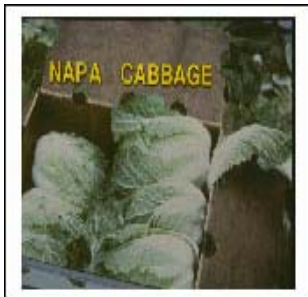
**Daikon** – (*Raphanus sativus var. longipinnatus*): Also called Chinese radish, this root crop is very closely related to the common radish. An *Alternaria* leaf blight and turnip mosaic are the main problems on the leaves but aphids, and soil wireworms can also be a problem. The main planting times are spring and fall, but some varieties can be planted almost year-round. Bolting (premature seedstalk) can be a problem with other varieties. Lo bok is a separate cultivar that may have some green coloration. Medicinal uses are many.

Daikon can be grated and added to various cooked dishes, sliced and added fresh to salads, or stir-fry onions and add shredded daikon and shrimp (6-8 minutes). The young leaves are also good steamed and served with a little butter. Daikon seeds are slightly peppery and great in a tossed salad.



**Gailon** – (*Brassica oleracea var. alboglabra*): This Chinese broccoli (Kale) very closely resembles the more familiar broccoli, but with much smaller stems and flowers. The seeds are planted for a spring crop or fall crop. Main problems are aphids, armyworms, and cabbage butterflies. Pick just before the flowers open for best quality. The stems are more tender and sweeter than broccoli.

Stir-fry the 2” pieces of gailon for one minute, then cover with water and cook covered for two more minutes. Stir oyster sauce into a pan with heated oil and water, then spoon over the broccoli and eat. OR, instead of oyster sauce, use minced garlic and chicken broth and a little soy sauce. It is also good in stir-fries with beef, pork, chicken and with noodles.



**Chinese cabbage** – (*Brassica rapa var. pekinensis*): is also known as celery cabbage and Napa cabbage. The heads are fairly dense, though not as hard as regular cabbage. They may be of two types – ‘Michili’, which are tall and upright, and ‘Napa’, which are more round or barrel shaped. The leaves are thinner than cabbage. Pest problems include cabbageworm, loopers, armyworms, aphids, and flea beetles.

The flavor is more delicate than cabbage. It is one of the last ingredients to add to a stir-fry dish. It is also added raw to salads.

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## Miscellaneous families

### Basellaceae



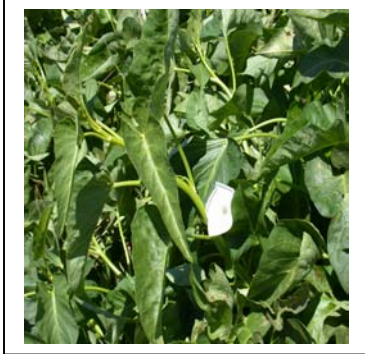
**Ceylon Spinach** – (*Basella rubra and/or alba*) is also known as Malabar spinach. It is a climbing tender perennial. There are two types – a red stem and a white stem. The plant is native of the East Indies. The red is slightly more productive than the white in the Virgin Islands. Neither seems to be bothered by any pests. It can be trained on a trellis or planted on the flat and allowed to sprawl.

The succulent young and mature leaves and stems are eaten - usually mixed with other vegetables in a soup or stew. The white species retains its color, but the red loses much of its color in the

water and is not as attractive. The flavor is very mild and almost tasteless.

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## Convolvulaceae



**Water Spinach** – (*Ipomoea aquatica*): is a semi-aquatic tender perennial that roots very easily at stem nodes. The flowers are usually white and stems are hollow (to help distinguish it from a sweet potato harvested for its stem tips). Planting can be direct seeding or from pieces of the stem.

Water spinach can be eaten raw or cooked, stir-fry with beef, chicken, pork, or sea foods. It has a milky white sap on the cut part of the stem.

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## Tillaceae



**Okra Leaf** - (*Corchorus olitorius*): is also called bush okra, Jew's mallow, or jute mallow and is a popular fiber crop in West Africa, Malaysia, Egypt, Philippines, and Central America. Plants with small yellow flowers borne in the leaf axils can grow to more than 5' tall. The optimum planting distance was found to be 50 cm. x 20 cm. It is an upright, slightly woody herb with serrated leaves.

The edible shoot tips are cooked in stews and have a mucilaginous consistency similar to okra. In West Africa the leaves and tips are stored dry, and in India the shoots are cooked with rice.

## Nutritional Information –

The table below should be used as an approximate guide to the nutrient content of the vegetables. The values presented are averages of a number of different tests. Nutrient content can vary depending on soil type, season, geography, weather, method of preparation, method of analysis, and different varieties of the same vegetable. The data are presented for a typical portion size – usually 28 grams, or one ounce, but may vary depending on the vegetable. The information comes from several different sources including:

- Ethnic Foods Nutrient Composition Guide*. Four Winds Food Specialists, Sunnyvale, CA. 2001
- Composition of Foods*. USDA. 2001. [www.nal.usda.gov/fnic/cgi-bin/list\\_nut.pl](http://www.nal.usda.gov/fnic/cgi-bin/list_nut.pl)
- Chinese Vegetarian Dishes*. Highlight Culinary series.

<u>Vegetable</u>	<u>Amount</u>	<u>info</u>	<u>Calories</u>	<u>Protein</u>	<u>Carbo</u>	<u>Fat</u>	<u>Calcium</u>	<u>Potassium</u>	<u>Sodium</u>	<u>Vit C</u>	<u>Thiamine</u>	<u>Riboflavin</u>	<u>Niacin</u>	<u>Folate</u>
		<u>source</u>	<u>Kcal</u>	<u>gm</u>	<u>gm</u>	<u>gm</u>	<u>mg</u>	<u>mg</u>	<u>mg</u>	<u>mg</u>	<u>B-1, mg</u>	<u>B-2, mg</u>	<u>mg</u>	<u>ug</u>
Basil	100 gms	c	39	4.2	2.8	2.2	320			71	.01	.60		
Ceylon spinach (fresh)	28 gms	a	6	.5	1.2		47	40	13	10	.02	.02	.02	
Ceylon spinach (boiled)	90 gms	a	19	1.5	3.9	.2	50	205	14		.05	.11	.54	
Bittermelon (cooked )	62 gms	a	12	.5	2.7	.1	6	198	4	20	.03	.03	.17	32
Bittermelon (cook leaves)	100 gms	b	35	3.6	6.8	.2	42	602	249	56	.15	.28	.99	88
Black nightshade	28 gms	a	12	1.3	2.4	.1	61			9	.03	.07	.37	
Gailon (cooked)	44 gms	a	40	.5	1.7	.3	44	115	3	12	.04	.06	.19	44
Broccoli (boiled)	100 gms	b	28	3.0	5.1	.4	46	292	262	75	.06	.11	.57	50
Napa cabbage (shredded)	76 gms	a	12	.9	2.5	.2	59	181	7	21	.03	.04	.08	60
Bok choy (shredded)	70 gms	a	38	1.0	1.5	.1	74	176	46	32	.03	.05	.35	46
Peppers, Jalapeno (fresh)	3 gms	a	1	0	.2	0	0	7	0	1	0	0	.04	1
Eggplant, Chinese (cook)	82 gms	a	16	.8	4.4	.1	45	112	5	6	.03	.03	.49	
Lemongrass (raw)	100 gms	b	99	1.8	25.3	.5	65	723	6	3	.07	.14	1.1	75
Sinqua, angled	95 gms	a	16	.7	3.9	.1	24	135	1	6	.03	.03	.19	
Sinqua, smooth	95 gms	a	19	1.1	4.1	.2	19	132	3	11	.05	.06	.38	6
Zucchini (cooked)	100 gms	b	16	.6	4.0	.1	13	253	239	5	.04	.04	.43	17
Daikon (fresh)	29 gms	a	10	.3	2.4	.1	16	132	12	13	.01	.01	.12	16
Daikon (boiled)	100 gms	b	17	.7	3.4	.2	17	285	249	15	0	.02	.15	17
Snake gourd	28 gms	a	4	.4	1.1	0	54	217	1	1	.03	.01	.03	
Snow peas	89 gms	a	28	3.2	7.5	.2	39	178	2	48	.20	.13	.53	9
Snow peas (raw)	100 gms	b	42	2.8	7.5	.2	43	200	4	60	.15	.08	.6	42
Sw. potato (cook leaves)	32 gms	a	11	.7	2.3	.1	8	153	4	0	.04	.09	.32	16
Sw. potato (fresh leaves)	35 gms	a	12	1.4	2.2	.7	13	181	3	4	.05	.12	.40	28
Taro root (boiled)	66 gms	a	94	.3	23.0	3.4	12	319	10	3	.47	50.0	20.0	.13
Water spinach (fresh)	28 gms	a	27		.3			0	0	7	.01	.02	.23	
Water chestnuts (fresh)	70 gms	a	9	.1	2.2	0	1	53	1	0	.01	.02	.04	1
Donqua (cooked)	88 gms	a	11	.4	2.7	.2	16	4	94	9	.03	0	.34	3
Ch. Long beans (boiled)	86 gms	a	101	7.1	18.1	.4	36	271	4	0	.18	.05	.47	125
Hyacinth bean (boiled)	100 gms	b	50	3.0	9.2	.3	41	262	238	5	.06	.08	.48	47

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