GARDENING WITH SOUTHEAST ASIAN REFUGEES

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Preface to the New Edition

This publication was originally written and published in 1986 while I was directing a community garden program in Columbia, Missouri. Due to the number of requests I have had for copies over the years, I am delighted to republish it here. Gardening With Southeast Asian Refugees was a product of its times when we had refugees brought into our country following the Vietnam War, which had devastating cultural consequences on the people of Vietnam, Cambodian, and Laos. Although there are no longer refugees, there is a growing interest in new foods, herbs, and garden plants, especially those that can provide diversity in our foods and in local production. This was the first publication I wrote on a computer and it was printed on a low-quality printer by today’s standards, then photographs were pasted to the pages and it was then photocopied. The original file for the text was not relocated, but a scanner captured the text and digitized the original photos. The plant species nomenclature is updated, references and seed sources are updated and a few corrections have been made, but otherwise it is essentially the original text. It is a great pleasure to share this information again, and the story behind it. So let’s all enjoy returning to 1986:
Introduction

Many of the unusual vegetables grown here by Southeast Asian refugees are not well-known to American gardeners. This booklet provides details on many garden plants from Southeast Asia that can be grown in temperate North America. It also seeks to inform community garden directors, social service workers, 4-H leaders, and, in fact, anyone interested in helping to facilitate a garden program with refugees from Cambodia, Vietnam, and Laos. Southeast Asian refugees have considerable interest in gardening, as growing their own unique varieties of vegetables enables them to maintain their usual diet to a great extent. This is important to them in the aftermath of such horrendous domestic upheaval: Most refugees have had farming or gardening experience and do not need gardening information, except for specifics on different American growing conditions: climate, pests, and soil. What they do need is access to resources – seeds, land, tools, water, and etc. – and someone to facilitate the development of a gardening program. While directing the Community Garden Coalition in Columbia, Missouri, during 1984 and 1985, I had my first experience working with Southeast Asian refugees. One of the community gardens that we developed was an international garden, with gardeners from many countries, including thirty Cambodian and five Vietnamese refugee families. I learned a lot from these gardeners, some of them became my friends, and much of the information that I gleaned is presented in this booklet. I also have visited Hmong (from Laos) refugee gardens in other cities. Recent research, aided by technical botanical expertise, has enabled me to identify some of the more obscure vegetables grown by Southeast Asian refugees and to provide additional uses of these plants.

Starting a garden project

To start a refugee garden project, first find out who has been working with the Southeast Asian refugees in your community. This individual or staff probably has some connection to the federal Office of Refugee Resettlement and usually there is also some affiliation with a church group involved in sponsoring some of the refugees. Talk to these people about what you are interested in doing and find out how this project will fit in with their plans. Do not expect them to offer their immediate assistance because they are invariably extremely busy simply helping the refugees adjust to a new country, culture, medical system and bureaucracy. Ask which refugee families would be most interested in having a garden plot and the resources to grow their own food and find out who are the community leaders. Also, plan a meeting time and ask the people who have already been working with the refugees if they would come or could suggest someone to serve as a translator.

Next, find a location, if you haven’t already, for the refugee community garden. Ideally, this would be close to where the refugees are living. Empty lots, church grounds, or open space around their housing developments can all be suitable. Although a level piece of ground is generally the most desirable, Hmong refugees are “hill people” and actually would prefer a hillside or some ground that is
sloping. Before the meeting, write up a brief (one page or less) of the garden project listing fees (if any), what supplies will be available, and the rules. (Rules concerning weeds, water use and picking up trash will be helpful.) If possible, have this description translated into the appropriate languages. Make copies so that everyone will be able to take one home and read it, or so they can find someone to read it to them later, if it is in English and they can’t read it.

First meeting

At the meeting, clearly explain the specifics of the refugee community garden. Be sure to talk about any fees, papers to be filled out, and rules. The filling out of forms and the collection of fees for supplies may prove to be insurmountable obstacles when trying to get some refugees involved. Therefore, make all forms as simple as possible. It would be helpful if fees for your program could be assumed by the sponsoring agency. If not, it would be better to get some service organization or church to support the project. This may not prove to be too difficult, as most communities will rise to meet the needs of the underprivileged. Ask the group what questions they have concerning the project. Also ask them what resources they need -- seeds, tools, stakes, poles, wire, mulch, manure, fertilizer, and pesticides. It would be helpful to get the names and addresses of everyone who attended the meeting so that they can be contacted later. As a gesture of good will toward the project, bring something to give to everyone. Seed packets of vegetables listed in this brochure, with pictures on them for identification, would be greatly appreciated. At the end of the meeting, schedule a time when plots will be assigned at the community garden. It is best to prepare the entire garden area with farm machinery, but if the ground is too wet, don’t wait, but assign individual plots and let the refugees till their own area with hand tools, or till them individually with a rototiller when it is dry enough. As the garden is getting started, show up frequently to bring resources and to provide assistance. Evenings are a good time because the refugee gardeners will be home from work, their kids will be home from school, and it is a popular time to garden. Children are very important to the garden project. They will help their mothers, who are the primary gardeners, and they also serve as translators in that they have been learning English at school. It is important to single out the community leaders within a refugee group and get them to take more and more responsibility for the project as it develops. If you have a tool shed, gate, or water supply that is locked, one person could be in charge of the key. This person, and whoever else is interested, can help you come up with a list of seeds that you will need. As time goes on, the community leaders could assume more of the organizational work, too. Of course, the extent to which this person could be of assistance may be limited by a language barrier.
Resources

You will find a list of Asian vegetable seed companies at the end of this brochure, although many varieties of seeds are available through most seed companies. Even though buying seeds in bulk is cheaper, individual seed packets are more desirable because of the pictures on the packets. The majority of refugees will not be able to read any writing on them, and one picture is, in this case, worth the proverbial thousand words. Many refugees may already have seeds which have been sent to them by relatives in California, New Orleans, and elsewhere. Also, some seeds and living plant materials (such as lemon grass, smartweed, and taro) can be purchased at Asian food stores. Some refugees will save their own seeds, especially of varieties they really like. Seeds of annuals I have observed being saved include: amaranth, bitter melon, bottle gourd, Chinese cabbage, Chinese mustard, cleome, garlic chrysanthemum, holy basil, hot peppers, perilla, winter melon, and winter squash. Hoes, shovels, and hand trowels seem to be the tools that are preferred. Hmong refugees are particularly interested in very large, wide hoes. Many refugees will improvise and make tools from other things, and sometimes use large kitchen knives to loosen soil around young plants. Of particular interest to refugee gardeners are: 1) fencing (especially fencing with holes large enough so that vegetables can be picked through them) to make trellises, fences, and borders; 2) A large supply of sticks and stakes, poles, twine, and wire; 3) Manure, which will be greatly appreciated, especially at the time that raised beds are made. (When using manure, make sure it is not too fresh as this might create a smell and fly problem about which neighbors may complain); and 4) Commercial fertilizer, especially nitrogen, will be wanted to side dress leafy vegetable crops (Chinese cabbage, bok choy, lettuce and others). To save money, fertilizer should be bought in bulk, as the small packages of it available at discount stores are quite expensive. Pesticides can be a problem because the refugees often are not able to read and follow directions. I once came upon a Cambodian woman using a spray can of roach killer (not registered for vegetable use) on her garden because the can had a picture on its label which indicated that the product killed bugs. Organic pesticides that are relatively safe should be bought and made available to the refugees. Bacillus thuringiensis (with brand names Di-Pel and Thuricide) is a very effective and safe pesticide for controlling cabbage worms. Other insects can be treated on a case by case basis. Water is an important resource for the gardens. The refugees know how to use water effectively and conservatively. Most of them will water lightly every night. If a mulch of hay, leaves, and other substances is provided, this will be used to conserve moisture in some situations. Many times, mulch is
not used because vegetables are planted at high population densities and as they grow they form a leaf canopy that effectively shades the ground. The biggest problem we had with water use was kids getting in it, playing with it, and sometimes leaving it on.

Cultural differences

There are many differences between the cultures of Southeast Asia and American culture. There are also noticeable differences between Cambodian, Vietnamese, Hmong, and other refugee groups. Talk to those who have worked with these groups for further insight. In all cases, be patient, respectful, understanding, and always keep smiling.

Pickle-making

There are many possible avenues for developing a cottage industry for some of the refugees that could be built on their gardening experiences. These would include marketing any of the following: Asian vegetables, pickles or kimchi, bean sprouts, or bean curd. Making pickles does not have to involve an elaborate process. A traditional Southeast Asian method of making salt pickles was taught to me by a Cambodian woman named Chanta Hem. She makes salt pickles in three days from one or more of the following vegetables—Chinese cabbage, turnips, carrots, green onions, mung bean sprouts, and cucumbers. Her recipe follows: Fill a quart jar with chopped Chinese cabbage. Add one tablespoon each of vinegar, salt, and sugar. Fill the jar about 3/4 full with boiling water, loosely place a lid on it, and set it in the sun (see photo) or a warm place. Check daily and put in a warmer place, if necessary, to speed up the fermentation process. After 3 days, the cabbage should be fermented and taste somewhat similar to sauerkraut, although it will probably be more sour in taste. When ripe, cover tightly and refrigerate to slow the fermentation process. Try it, you may like it! Variations on this recipe include adding more salt (for tougher vegetables and to make a less sour pickle), less vinegar, less sugar, or adding hot peppers and/or other seasonings.
Vegetables grown by Southeast Asian refugees

The following 22 unusual vegetables are important to Southeast Asian refugees as both cultural and horticultural products. With the brief information provided, you should be able to identify these vegetables if they are already being grown, order seeds if this is desirable, or at least be able to communicate about these plants more knowledgeably.

**AMARANTH *Amaranthus* spp.**

**Chinese name:** 莽菜

**Common names:** Hinn Choy Amaranth, Chinese spinach, Tampala, Pigweed

Amaranth is an ancient vegetable, which has been used as a green in China for the last 14 centuries or longer. It is related to several species that have been used as wild foods in America. Its green to reddish, oval leaves and tender stems are used as a food source when the plant is 4 to 12 inches tall. Amaranth is ready to harvest about 48-58 days after planting. It is quite prolific and is adapted to hot weather, making it a favorite source of greens when spring crops have been harvested.

Both Cambodian and Vietnamese refugees grow this vegetable on raised beds. Seeds are sown shallowly after the time of the last frost and plants are thinned (harvested and eaten) to 12 to 15 inches apart. When the basal leaves and stem are left after harvesting, new shoots quickly sprout that can be harvested about 7 to 15 days later. The flavor is that of a hearty spinach, with an aromatic to hot taste (depending on how tender it is when harvested). Amaranth greens, briefly steamed or stir-fried with other foods, are an excellent source of vitamin A, C, iron, and calcium. When ordering seeds, make sure that edible rather than ornamental varieties are selected. Many refugees will also utilize the weedy, edible amaranths that can be found growing wild here.

**BEAN SPROUTS *Vigna radiata*, other *Phaseolus* species**

**Chinese name:** 绿豆

**Vietnamese name:** đậu xanh - đậu tâm

Common names: Green gram, Mung bean, Chinese mung bean, Green-seeded mung bean, Tientsin green bean
Many refugees eat sprouted mung and other beans. Bean sprouts are nutritious and are used in southern Vietnam in most vegetable dishes (so much so that the people in northern Vietnam have nicknamed them “Bean Sprouts.”) Sprouts are an important food source during the non-growing season when fresh greens are not readily available. Mung bean sprouts are made into salt pickles by some Cambodian refugees. Sprout-making might be a good cottage industry for some refugees.

**BITTER MELON  ** *Momordica charantia*

Cambodian name: Mreah
Chinese name: 苦瓜
Vietnamese name: Mướp dương

Common names: Bitter melon, Balsam pear, Bitter gourd, Leprosy gourd, Karela, and Maiden’s blush

The bitter melon is a native to the old world tropics and is widely cultivated for its characteristically bitter, immature, ridged fruits. It is not closely related to melons or any vegetables grown in America, but is perhaps most similar to a gourd in appearance. It has a quick growing, ornamental vine, with attractive bright green, lobed leaves and numerous small yellow flowers. It is planted as a summer crop, likes heat, and takes about 88 days to produce fruit. Vietnamese gardeners grow it on a trellis made of tree limbs, or on a 3 foot tall arbor that supports large-holed woven wire that is suspended parallel to the ground. This allows the fruits to hang down, which makes them easier to see and harvest (see photo on page 5) and may also help prevent disease. In the tropics, the fruits are often covered with bags to prevent fruit fly damage. In temperate central Missouri, a Vietnamese gardener who has grown bitter melons for several years stated that those grown here were pest free and dependable. The unusual taste of bitter melon fruit has no western food equivalent. The bitterness is considered to be a food compliment to beef, poultry, and seafood. The bumpy fruit which, depending on the variety, may get as large as 12 inches long and 2 inches in diameter (but are usually smaller) should always be picked when immature to avoid excessive bitterness. When the bumps become smooth, the fruits are ready for harvest. This is one of those foods that either one really likes or they do not. Like the Cambodian refugees with whom I spoke, I do not particularly like the bitter melon, but the Vietnamese, Chinese, and Indian gardeners I worked with seemed to relish it. The fruit is also widely used medicinally. As a food substance, it is recommended for eating during the heat of summer (when it is most readily available) because of its cooling effects on the body. The fruit is parboiled or salted before cooking to further remove the bitter taste. Bitter melons are a good source of vitamin C, phosphorus, and iron.
BOK CHOI *Brassica chinensis*

Chinese name: 青菜 小白菜 白菜 冬

Vietnamese name: CAI TRANG

Common names: Bok choy, White mustard cabbage, Celery cabbage, Chinese white cabbage

Bok choy, a member of the cabbage family, is native to China and a favorite food of Vietnamese refugees. The most common variety has attractive, glossy, dark green leaves and leaf stems that are long and ivory white. Other varieties have stems that have a greenish tinge, and the Shanghai variety (the favorite of many Vietnamese refugees) has wider leaf stems that are slightly green, growing on a more compact and short plant. All varieties are cool-season crops, planted like mustard greens and thinned to 6 to 8 inches apart. Bok choy matures in about 48 to 58 days. It does best as a fall crop, but can easily be grown in the early spring. Vietnamese refugees maintain healthy bok choy crops during the summer that do not bolt even in 100 degree heat. To do this, they water every evening and maintain a rich fertile soil in their raised beds. Bok choy, with its pleasant mustard taste, has stems similar in texture to celery. Sometimes it is harvested with the yellow-blossomed flower stalk just emerging from the center. Bok choy is most often stir-fried along with other foods. It also is used to make salt pickles, and can be dried. Dried bok choy is prepared by Vietnamese refugees who use the white-stemmed variety. First the plant is washed and dropped into boiling water for a couple minutes (until the leaves turn a cooked dark green). After it has been allowed to cool, it is “kneaded” like bread. This breaks up the cells in the celery-like stem. It is then hung outdoors, straddling a string or cord (looking like vegetable laundry) to dry. It is brought in every night and refrigerated. Every morning it is kneaded again and hung outside. After about three sunny days, it is dried. During the winter, dried bok choy is added to soup and its seaweed-like taste is appreciated. Fresh bok choy contains significant amounts of calcium, Vitamin A and C. Salt-pickled bok choy, made with bran, is high in vitamin B1, containing four times the amount found in fresh bok choy.

BOTTLE GOURD *Lagenaria siceraria*

Cambodian name: Khlôôk

Chinese name: 葫芦瓜 葫蘆瓜 葫芦

Vietnamese name: Bäu

Common names: Bottle gourd, Calabash, and New Guinea bean, White-flowered gourd, Dipper gourd

The dried shell of the bottle gourd has been used since ancient times as a container and utensil, while immature gourds have served as a food source. The plant is an aggressive annual, its musk-scented, hairy vine having ribbed
stems and long tendrils. There are several varieties and the gourds are variously shaped—club, ball, and oblong (the latter being the most preferred for eating). Fruits may grow to 4 feet in length and be 8 inches in diameter. Bottle gourd is a suitable zucchini substitute and its taste, though slightly musky, is sweet when cooked in soup. Only non-bitter varieties are used for food and they appear to be resistant to squash bugs and other insects. Seeds imported from Hong Kong that I obtained for a Vietnamese man in Columbia, Missouri, were planted in late April in rich, loose soil and by September the vines covered a large area and had climbed to the top of a 40 foot tree, producing 3 foot long gourds as they went. He called them “fighting gourds” because the aggressive vines appeared to fight each other. If no trees are available, the vines need a strong trellis.

CHINESE BROCCOLI  *Brassica alboglabra*

Cambodian name: Spéi sââ.
Chinese name: 芥蓝

Chinese broccoli or flowering kale is a broccoli-like plant with dark green leaves and a small flower stalk. Its culture is almost identical to broccoli and it is ready for harvest in about 70 days. It has a unique taste, is commonly grown in China, and may be desirable to some gardeners.

CHINESE CABBAGE  *Brassica rapa*

Chinese name: 白菜

Common names: Chinese cabbage, Chinese celery cabbage, White mustard, Shantung cabbage, Celery lettuce, Napa cabbage, Wong bok, Michili, and Tientsen

Chinese cabbage is native to China, reportedly used as a vegetable as early as 500 AD, and has compact, oblong, round, oval, or loose heads depending upon the variety. Each head is composed of numerous, crinkled, somewhat hairy, thinly veined, light green leaves that have a broad, flat, white midrib. Moist, cool soil is best for the development of firm heads, but if well-watered, fertilized and
carefully managed, Chinese cabbage is successfully grown by many refugee gardeners, even during the hot months. Different varieties have varying maturity dates ranging from 50 to 85 days. There are also subtle differences in taste. A Chinese gardener told me that he considered the upright varieties to be the sweetest. Southeast Asian refugee gardeners broadcast Chinese cabbage seeds in raised beds. When the seedlings have about 4 to 5 true leaves, they are transplanted (usually in the evening) into other raised beds and spaced on grids about 12 inches apart. If it is sunny or hot, the transplanted seedlings may be shaded with scrap boards or other materials to keep them from experiencing transplant shock. Large heads are produced when significant quantities of nitrogen fertilizer are used and watering is done every evening (if it has not rained). When heads are near maturation, they are often tied shut to ensure an extra white tender heart. Cabbage worms can safely and effectively be controlled with Di-pel (Bacillus thuringiensis). Chinese cabbage is an important vegetable crop. Today in China, where per capita consumption of vegetables is over one pound per day, Chinese cabbage constitutes over 80% of the vegetables consumed in the winter and spring months. It is sweeter than our domestic cabbage and is used stir-fried, in soup, or to make salt pickles. A Cambodian recipe for pickling Chinese cabbage with salt (similar to American sauerkraut) is given in the Introduction. The fermentation process increases the content of vitamins B1, B2, B12 and niacin. Pickling Chinese cabbage is one successful means of storing it. The heads themselves can be kept for 2-3 months in a refrigerated area or a cool cellar. Seeds of numerous varieties are readily available; moreover many refugees save the seeds of preferred varieties.

CHINESE CHIVES  *Allium schoenoprasum*

Chinese name:

![Chinese Chives](image1)

Chinese chives are grown by some Vietnamese refugees. These chives are smaller than what is commonly called chives, and have flat stems. Planted in the spring from the divided bulbs that were harvested the previous year, they are ready for harvest in a couple of months and are most commonly used in soup.

CHINESE MUSTARD  *Brassica juncea*

Cambodian name: Khat naa

Chinese name: 榨菜

Common names: Chinese mustard, Green mustard, Leaf-mustard cabbage, or Mustard Gai Choy, the Chinese name for Chinese mustard, is the name that Cambodian refugees use for this plant.
Chinese mustard should not be confused with American mustard (which has a more harsh mustard taste) and with non-heading varieties of Chinese cabbage (which have broad rather than flat leaf stems). Chinese mustard leaves have an irregular crumpled surface. They are broad, oval, and their coloration ranges from green to purple, depending on the variety. The stems of the leaves are swollen, variously curved or straight and a white bloom usually covers the surface. Some Cambodian refugees prefer Chinese mustard over other mustards, Chinese cabbage, and bok choy because of its versatility. It can be cooked in many ways and also be pickled. There may be as many varieties of Chinese mustard in Southeast Asia as there are of lettuce in this country. Chinese mustards are planted like other mustards or Chinese cabbage and mature in 35 to 65 days, depending on the variety. They are harvested when 6 to 12 inches tall and may be harvested more than once. Cooked like other greens, added to soup, or stir-fried, Chinese mustard is much enjoyed. The Cambodian refugees make excellent salt pickles from it. The thickened, but still tender stems are a nice crunchy contrast to the pickled/fermented leaves. Fresh Chinese mustard is very high in calcium, iron, vitamin A and C. Seeds are readily available in several catalogs. Make certain they are not American or “southern” mustard greens.

CLEOME  Cleome gynandra

Cambodian name: mo-meach
Chinese name: 白花菜

Cleome or spider plant is similar to the cultivated flower cleome. It is an upright annual, with green to purplish, palmately compound leaves. The flowers are whitish-pink and look similar to the flower of the ornamental variety and species of Cleome. Although the plant has a rank smell and taste, some Cambodian refugees use it as a flavorful ingredient when pickles are made. However, not everyone is expected to be fond of it. When I asked a Cambodian woman if I could taste her cleome-flavored mustard green pickles, she laughed and assured me I would not like the taste of it.
COM CHOY *Oenanthe javanica*

Chinese: 水芹菜

Vietnamese name: Rau cần.

Com choy looks like flat-leafed parsley, but is a perennial that creeps on the ground and roots at its lower nodes. It is widespread in Southeast Asia and Vietnamese refugees have introduced this plant to our country, growing it in shady areas around their homes. Com choy is quite prolific, somewhat weedy, and can over-winter with temperatures below zero. It is used by the Vietnamese in salads, and as a green. It is best harvested before it gets too big and begins to produce umbels of small white flowers. This plant has a strong parsley flavor.

**CORIANDER** *Coriandrum sativum*

Chinese name: 芫荽

Vietnamese name: Rau mùi.

Common names: Coriander, Chinese parsley, Cilantro

Coriander is native to the Mediterranean and its first leaves look similar to parsley. Later, the higher leaves (the plant may become 2 feet tall) are smaller and more divided. These smaller leaves proceed the plant’s attractive light purple flowers. When coriander is to be used as greens, it is harvested while it is still young, tender, and mild, (when it is 3 to 6 inches tall). A cool-season annual, coriander is usually planted in the early spring. A Vietnamese woman who has a market garden in Columbia, Missouri plants coriander in September to get it established in over the winter (like winter wheat) so that it can produce an earlier crop in the spring than if planted by seed. Besides being valued for its greens, Vietnamese refugees appreciate coriander as a garnish and seasoning. It is very nutritious, as the green leaves contain significant quantities of vitamins A and C, as well as calcium and iron. Interestingly, coriander actually has almost twice as much iron as spinach and considerably more than any other vegetable food listed in the USDA Agricultural Handbook No. 34, Composition of Foods Used in Far Eastern Countries.
EGGPLANT  *Solanum melongena*

Cambodian name: Trâb vèèng

Chinese name: ăo ău

Vietnamese name: Cà tim

Small white eggplant:
Vietnamese name: Ca trang, Tron nho

Southeast Asian refugees are familiar with our standard, large purple eggplant, but also like other types whose cultural requirements are similar. Cambodian and Vietnamese gardeners have asked me for seeds of the pure white egg-sized eggplant as well as for small marble-sized green one that I have only seen available in a seed catalog from Laos. They have little interest in the long, slender Japanese eggplants. The Vietnamese bake large eggplants or use them in stews, and the small green eggplants are a favorite for pickles.

ERYNGO  *Eryngium foetidum*

Chinese name: 刺芜荽

Vietnamese name: Cây ngò tàu, Mùi tàu

Eryngo is grown by Vietnamese refugees as a seasoning similar to coriander. The entire plant is spiny and fragrant. The basal leaves are as large as dandelion leaves, only more spiny. They are used in a green state. The other leaves are much smaller and the tiny white flowers are in small heads. The seeds are not commercially available. A Vietnamese woman who grew this plant in Columbia, Missouri had seeds sent to her from a relative in New Orleans.
GARLAND CHRYSANTHEMUM  *Chrysanthemum coronarium*

Chinese name: 

Vietnamese name: Cai tan o, Cai cuc

Common names: Garland chrysanthemum, Edible chrysanthemum, Chop suey greens, Japanese greens, and Shunguku (a common Japanese variety)

The garland chrysanthemum is an annual plant related to the well-known chrysanthemum cultivated for its flowers. The edible leaves of the garland chrysanthemum have the characteristic smell of ornamental chrysanthemum plants, are 3 to 5 inches long, fleshy, and divided into many parts. The plant does not get bitter or tough if grown in cool weather. Seeds are sown in the spring and 40 to 60 days later the plant is ready to be harvested when it is 4 to 8 inches tall. The garland chrysanthemum will tolerate partial shade. It is sometimes grown as an intercrop, proceeding Chinese cabbage or other crops. Bunches of the plants are harvested to be steamed as greens or as seasoning for other foods. Vietnamese refugees grow large amounts of this plant. They allow a few of the plants to bloom so that they can save their seeds. The garland chrysanthemum has showy yellow-orange flowers which are most attractive in their gardens during the early summer.

GARLIC  *Allium sativum*

Cambodian name: Khtüm sââ.

Chinese name: 

Vietnamese name: Tỏi

Garlic is a well-know seasoning used around the world and is especially important to Hmong refugees who devote a considerable portion of their garden space to this crop.
GHEE  *Houttuynia cordata*

Chinese name: 截莱

Vietnamese name: Diếp cáie

Ghee is the Cambodian word for this perennial herb that is related to black pepper. The Vietnamese word translates as “fish-scale vegetable” perhaps because the leaves are shaped similar to large fish scales, and it is eaten with fish. The plant only grows to 4 inches tall and has lime green, heart-shaped leaves. It needs shade and is commonly grown by Cambodian refugees near their doorsteps under shrubbery. Ghee successfully over-winters in central Missouri, withstanding below zero F. weather only to emerge again in the spring. The taste of this plant is similar to black pepper and it is eaten by Cambodian refugees with fish or is added to a salad. One way that the Vietnamese prepare ghee is to finely chop the leaves (so that they will absorb more sauce), mix with cucumbers, bean sprouts, noodles, and meat (if it is affordable), and then add fish sauce, lemon, and sugar on top. Tomatoes and hot peppers can also be added to this dish. Ghee seeds and plants are not commercially available. Live plants may be available at an Asian market or farmer’s market, and can be easily rooted and transplanted to shady areas.

HOLY BASIL  *Ocimum tenuiflorum*

Cambodian name: Che tak

Chinese name: 罗勒

Vietnamese name: Húng quế

This close relative of basil is grown by Cambodian refugees. It has small dark green leaves and is marked with purple. It has light purple flowers. The leaves are picked to be used as seasoning. Its culture is identical to common basil.
HOT PEPPERS  *Capsicum frutescens*

Chinese name: 辣椒

Vietnamese name: Öl

In the 15th century hot peppers were introduced into Southeast Asia by Portuguese sailors and were quickly adopted as a seasoning. The Vietnamese have nicknamed the people of central Vietnam “Hot Peppers” because of their heavy use of capsicum. Hot peppers that are small and fiery are the types preferred by Southeast Asian refugees. Some Cambodian refugees told me that they like their small (only 1 inch long and 1/4 inch wide) hot peppers more than cayenne peppers, because cayenne peppers are not hot enough! These peppers are a perennial species and are grown by both Cambodian and Vietnamese refugees. Oftentimes they are cultivated in 3-gallon pots right on the porch and brought indoors to over-winter. This variety of hot pepper is quite shade tolerant, commonly grown in the shade in Vietnam, and I have brought a plant of my own indoors this winter. It is thriving. One of these container-grown capsicums can produce 50 to 80 or more hot peppers. And a very little bit goes a very long way!

JICAMA  *Pachyrhizus erosus*

Cambodian name: Pe’kuëk

Chinese name: 番薯

Vietnamese name: Cur dau

Jicama or yam bean is a long-season legume with a tuberous root that has crisp, sweet flesh. Its creeping vine has 3 leaflets that look similar to runner beans. It requires a warm climate (those in the grocery store are imported from Mexico) and needs between 120 and 210 days for maturation. My attempts to grow jicama in northeast Kansas indicate that a 180 day growing season, with only part of that really hot weather, is not enough to produce sizable tubers. Even so, because of their horticultural skill, some Southeast Asian refugees might be able to produce a crop under these conditions. If grown in the traditional man-
ner by inter-planting, it would not require much extra space. In Vietnam, jicama is interplanted under bananas trees on banana plantations. Even though yields may be small, production can be justified as the roots are hard to obtain, expensive, and culturally important. Jicama is usually eaten raw. Seeds are available through some seed catalogs and should be handled with care around children because they are poisonous.

**JUTE  *Corchorus aestuans***

Chinese name: 縄黃麻

Vietnamese name: Bố dại

A variety of jute is grown by Vietnamese refugees for its 2 inch long, oval green leaves. The plant has small flowers and grows to about 2 to 3 tall feet supported by tough stems. The leaves are picked when young, are mucilaginous, and are used in soup as a thickener. Seeds are not commercially available. However, they are available in other countries, as some Nigerian gardeners that I worked with had also imported these seeds.

**LEMON GRASS  *Cymbopogon citratus***

Chinese name: 檸檬茅

Vietnamese name: Sà

Lemon grass is a tropical perennial grass that can be treated as an annual in temperate climates. It is a bunch grass, related to bluestem grasses found on prairies. Its leaves are 2 to 3 feet long, 1/2 inch wide, and rough to the touch. Cambodian refugees are very fond of lemon grass, using it as a condiment for fish. In Columbia, Missouri, they obtain fresh shoots from a local Asian grocery store. These shoots will root when planted, and supply a source of fresh lemon grass all summer long.
LUFFA  *Luffa acutangula*

Cambodian name: Ronôông chrung.

Chinese name: 丝瓜

Vietnamese name: Mướp khía

Common names: Luffa, Loofah, Chinese okra, Dishrag gourd, Dish cloth gourd, Sponge gourd, and Snake gourd

Luffa has large, rounded leaves on a long vine that branches out and is capable of climbing over trees. There are two main species – *Luffa acutangula* and *Luffa cylindrica* – the first is preferred, as it is better tasting. *Luffa acutangula* is distinguishable from *L. cylindrica* by characteristic acute angled ribs on its cylindrical fruits. These fruits are 1 to 5 feet long. The flowers are bright yellow with 5 petals. Luffa cultivation calls for rich soil and plenty of water. Large yields are produced and the fruits mature in about 90 days. For northern gardens, young plants can be started indoors and transplanted like melons, which have similar cultural requirements. Luffas should be picked when 4 to 6 inches long, before their internal fibers have hardened. Small fruits are eaten raw, like cucumbers, or are cooked like okra or summer squash. They have an unusual taste and although there are no named varieties, some are sweeter than others. Luffas are also cultivated for their fibers which have many uses, but are especially popular as sponges and for bathing. Seeds are readily available and easily saved from mature fruits.

PEAS (Edible Pod)  *Pisum sativum*

Chinese name: 豌豆

Vietnamese name: DAU HOA LAN

Common names: Edible-pod peas, Snow peas, Chinese peas

Flat, edible pod peas are an important vegetable crop to Vietnamese and Hmong refugees. These peas may be dwarf or tall (the latter need a trellis or fence), and their attractive flowers may be either white or lavender and red. Seeds of several varieties are readily available. They are grown like other garden peas.
PERILLA  *Perilla frutescens*

Chinese name: 野生白苏

Japanese name: 青シソ Ao shiso

Perilla, also known as “beefsteak plant” is an aromatic herb with a distinctive taste somewhere amidst mint, basil, and black pepper. It looks somewhat similar to basil, but its larger leaves are thinner and crinkled. There are two varieties, one with green leaves and the other with purple. These leaves have been used in China as a seasoning, being fermented in soybean paste, since at least the 6th century. Since only small amounts of this plant are needed, some Vietnamese refugees grow perilla (especially the purple variety) in pots on their doorsteps.

POPPY  *Papaver somniferum*

Chinese name: 罂粟

Poppies are an annual plant grown in Southeast Asia for their seeds, attractive flowers, and opium exudate. Some refugees, in particular the Hmong, may plant some. To avoid any legal problems and negative publicity, poppy plantings should be carefully monitored to make sure that they are not being worked for their opium exudate. If they are being worked, the capsules will have slit marks on their side where a sticky substance has accumulated. These plants should be removed and the people growing them should be reminded that this is an illegal activity.

RADISH (Daikon)  *Raphanus sativus*

Cambodian name: Chhaay thaaw

Chinese name: 萝菔

Japanese name: Hatsuka daikon

Vietnamese name: Củ cải

Common names: Daikon radish, Chinese radish, Winter radish, Oriental radish
The radishes of Southeast Asia are more substantial than our small round red ones. They have a texture more similar to our turnips and are either round to oblong or carrot-shaped. The long white radishes, which are commonly referred to as daikon radishes in seed catalogs and in grocery stores, can grow up to 18 inches long. The plants are also much bigger than American radishes and need to be spaced in the garden more the way turnips are, rather than small radishes. In Vietnam, the entire young plants (pulled when thinning) are used, quickly stir-fried with other foods. When the roots mature, they are cooked with meat or made into a salt pickle. Seeds are readily available from most seed catalogs, and can be grown in either spring or fall, depending on the variety.

**SMARTWEED** *Persicaria odorata*

<table>
<thead>
<tr>
<th>Chinese name: 马来香蓼</th>
<th>Vietnamese name: <strong>Rau Răm</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>馬來香蓼</td>
<td>Vietnamese cilantro</td>
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</tbody>
</table>

The smartweed is a common weed in eastern Asia growing near water and on wet ground. This plant grows 1 to 2 feet tall and does well in a shady place. The leaves are oval and green with a pointed tip; the stems reddish, with swollen joints. Apparently smartweed does not flower in our climate. The leaves are used for seasoning and are pungent and peppery to the taste. Smartweed was cultivated in ancient China and is still sometimes cultivated in Japan. In Vietnam, a little is used in soup, and an unusual dish called half-baked duck eggs is made with it. It is also used as a seasoning and condiment by Cambodians, Laotian and Vietnamese refugees. I found it for sale in a Laotian grocery store in St. Louis. Cuttings, taking from the live stems for sale in a grocery store, are an easy way to propagate this plant. It needs shade and to be watered frequently. Also, it must be brought inside over the winter because it cannot tolerate cold weather. For these reasons, it is often grown in a pot that can be watered and moved easily.
SOYBEAN  *Glycine max*

Cambodian name: Sândaèk sieng

Chinese name: 大豆

Vietnamese name: Dâu nành

The soybean is the basis of many high-protein foods made and enjoyed in Southeast Asia. It is used to make bean curd, fermented bean paste (miso), soy sauce, soy flour, soy oil, and is eaten as a vegetable. The green seeds in the immature pods are used as a food source and the entire pod is cooked and eaten, seeds and all. Certain varieties, such as Black Panther, are noted for their superior edible seed qualities. Soybeans take quite a bit of space, so unless there is sufficient interest in growing them as a vegetable, they are not practical as a garden crop.

SWEET POTATOES  *Ipomoea batatas*

Cambodian name: Dâmlô:ng chvië

Chinese name: 番薯

Vietnamese name: Khoai lang

Sweet potatoes are a familiar food to refugees from Southeast Asia. They utilize not only the roots which are rich in vitamin A, but also the green shoots. A Vietnamese man told me that in Vietnam both orange and white flesched sweet potatoes are grown. These varieties may have been selected for their more tender edible shoots as he also said that American sweet potatoes have tougher shoots and sweeter roots. In Vietnam, sweet potatoes are intercropped under banana, coconut, or orange trees, and the shade could help make these sweet potato shoots tender. If cultivated for their green shoots rather than roots, sweet potatoes can be grown much further north than they normally would be. The shoots are chopped and cooked as a green vegetable.
TARO  *Colocasia esculenta*

Chinese name: 芋芋头

Vietnamese name: Khoai môn, Khoai nước

Taro is a bog plant of tropical origin from Asia. It is one of the oldest food plants, being cultivated for over 2,000 years. Taro, or elephant’s ear plant, has large green, oval leaves, 8 to 18 inches across on leaf stems that may grow to 7 feet tall. A rounded, large sweet potato-sized root is produced. Although this plant is tropical and needs a long growing season, it is grown as far north as temperate Beijing (Peking) in China (which at 49 degrees N. is as far north as Philadelphia or Kansas City). Cambodian and Vietnamese refugees have successfully grown taro in central Missouri. Food grade roots were obtained at a local Asian grocery store and planted in early May after the last frost. They were well fertilized and watered frequently. Leaf stems were ready to harvest from late June until frost in late October. There are over 1,000 varieties of taro and some of them are probably more suited to dryland, temperate environmental conditions. All parts of the taro plant are edible, but leaf stems, leaves, and roots alike must be cooked before they are eaten to remove the poisonous calcium oxalates. The fleshy, starchy root is potato-like, but more cheesy in texture. Roots are steamed, boiled, or baked. The leaves and leaf stems are an excellent source of vitamin A and C. In Vietnam, the leaf stems are peeled and cooked in sweet and sour sauce, with tamarind, or are added to soup. Laotian refugees also cook and eat the leaves. The leaves are best when they are young and tender.

WATERCRESS  *Nasturtium officinale*

Chinese name: 水蔊菜

Vietnamese name: Xà lách xoong

Watercress is a peppery-tasting plant that is used in salads, as a garnish, and in soup. It is an important food for Southeast Asians, but difficult to obtain. Laotian refugees, living in Garden City, Kansas, frequently travel over 50 miles to harvest watercress growing in a spring adjacent to Scott County Lake. It needs cool, clean (usually moving) water to grow in, so it is not ordinarily a cultivated plant. It can be grown successfully in pots if the soil is kept cool and wet.
WATER CONVOLVULUS  *Ipomoea aquatica*

Cambodian name: Trâkuön

Chinese name: 通菜

Vietnamese name: Rau muống

Common names: Water convolvulus, Water spinach, Water lily, Swamp cabbage

Water convolvulus is a semi-aquatic plant that often grows as a weed in rice paddies in Southeast Asia. It has been grown in China since at least the third century A.D. In its normal habitat, the main shoots trail horizontally over the mud surface and send up stems, (which are hollow and have a milky juice) that support the plant’s long triangular leaves (1 inch wide and up to 6 inches long). Water convolvulus only grows satisfactorily when the mean summer temperature is above 25 degrees C. (77 degrees F.). It can grow on dry land if given considerable amounts of fertilizer and water. Shade can also be helpful. Cambodian refugees in Columbia, Missouri, planted water convolvulus in May (from seeds that I ordered from an Asian seed catalog). The seeds were planted in the shade of a trellis which served to support winter melons. The shoots and leaves of water convolvulus are ready to harvest in about 65 days, when about 8 to 12 inches tall. This plant, if cut above the ground, grows back quickly from its stems. The green stem and leaf variety is available here, but in Southeast Asia there are also white-stemmed and reddish-brown leaf varieties. The people living in the northern part of Vietnam are extraordinarily fond of water convolvulus. The shoots and leaves are mild tasting, even during the heat of summer. Water convolvulus, usually steamed or stir-fried, is high in vitamins A and C.
WINTER MELON  _Benincasa hispida_

Chinese name: 冬瓜

Vietnamese name: Bí dao, Bí bee

Common names: Winter melon, Chinese Preserving Melon, Ash gourd, White gourd, Chinese Watermelon, Wax gourd

The winter melon is a native of Asia and looks like a large, hairy muskmelon vine. It has yellow squash-like blossoms and fruit that is round to oval and the size of a large pumpkin or watermelon. The flesh of the fruit is white and encloses small white seeds. The skin of the fruit is greenish and hairy and as it matures the hairs drop off and an ashen, white film covers and helps to preserve the fruit. These may weigh 28 to 30 pounds and keep remarkably well--6 to 12 months in a cool place. Winter melon requires a long season and warm weather. It normally takes 150 days to bear its fruit. However, a woman from Canton, China, grew a large round variety (apparently Chinese) in Columbia, Missouri, that produced mature fruit in about 120 days. Also, seedlings can be started in a greenhouse, like other melons or squash, and can be transplanted outside, especially where the growing season is shorter and cooler. Winter melons need substantial amounts of water and fertilizer. Care must be taken not to over-water, as this causes the fruits to rot. Hay mulch underneath the fruits can help to alleviate this problem. Cucumber beetles are fond of winter melons, and wilt is also a problem. Vietnamese refugees usually grow winter melon on the ground, while the Cambodian refugee gardeners I have observed grew them on a trellis. This may have been due to the fact that these Cambodians only used the immature fruit, which do not need physical support for their weight. Winter melons taste like a slightly sweet zucchini and have a texture similar to zucchini in both the raw and cooked state. The Vietnamese chop and cook the entire fruit when it is immature. Mature fruits are prepared differently. The seeds are removed and the resulting cavity is stuffed with meat and green peppers, then baked. Or, the flesh of older winter melons are used to make a sugary candy.
WINTER SQUASH  \textit{Cucurbita maxima}

Chinese name: 斧瓜

Vietnamese name: Bí

Cambodian and Hmong refugees grow varieties of winter squash that they have brought with them from their homeland. The fruits are large, ribbed, and oval. Cultural practices used to grow these squash are apparently the same as with American varieties.

YARD-LONG BEAN  \textit{Vigna sinensis}

Vietnamese name: DAU DUA

Chinese name: 豇豆

The yard-long or asparagus bean is a native annual pole bean of southern Asia. It is a strong climber, closely related to the black-eyed pea. Its elongated pods (light yellowish to green) and 12 to 36 inches in length are ready to harvest 75 to 90 days after planting. Like other beans, they are planted after the last frost. Vietnamese and Cambodian refugees use tree limbs tied together as a trellis for these beans which, with plenty of water, will do well even through 100 degree F. weather. If picked while still young, the long pods are very tender, and have no strings. They are mildly sweet when cooked and do not have the strong green taste characteristic of other green beans. Yard long beans have a nutritional content similar to other beans and their tender stem tips and leaves can also be eaten. Some pods can be allowed to mature and then be dried for seeds for the following year.
Common American crops

In addition to the vegetables previously mentioned, Southeast Asian refugees have considerable interest in growing the following common American crops: cabbage (green and red), cantaloupe, carrots, cucumbers, lettuce, mints, onions, parsley, peanuts, summer squash, sweet corn, tomatoes, turnips, watermelon, and zucchini. There is limited interest in the following: bush beans, kale, leeks, and radishes. Little or no interest was expressed in other crops (like potatoes and beets). In addition to the above mentioned vegetables, there is much interest in bright colored flowers—zinnias, marigolds, geraniums, and sunflowers and in some fruits, especially strawberries, apples and pears. Apples and pears are often salt-pickled while green.

Possible Southeast Asian vegetable crops

There are several vegetable crops that are grown in China, Japan or other parts of Southeast Asia that may be of interest to refugee gardeners. The following vegetables marked with a plus sign are aquatic:

<table>
<thead>
<tr>
<th>Flowering cabbage</th>
<th>Brassica parachinensis</th>
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<tbody>
<tr>
<td>Chinese celery</td>
<td>Apium graveolens</td>
</tr>
<tr>
<td>Malabar spinach</td>
<td>Basella alba</td>
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<tr>
<td>Winged bean</td>
<td>Psophocarpus tetragonolobus</td>
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<tr>
<td>Hyacinth bean</td>
<td>Dolichos lablab</td>
</tr>
<tr>
<td>Burdock</td>
<td>Arctium lappa</td>
</tr>
<tr>
<td>Honewort</td>
<td>Cryptotaenia canadensis</td>
</tr>
<tr>
<td>Matrimony vine</td>
<td>Lycium chinense</td>
</tr>
<tr>
<td>Mallow</td>
<td>Malva verticillata</td>
</tr>
<tr>
<td>Water chestnut+</td>
<td>Eleocharis dulcis</td>
</tr>
<tr>
<td>Arrowhead+</td>
<td>Sagittaria sagittifolia</td>
</tr>
<tr>
<td>Ginger</td>
<td>Zingiber officinale</td>
</tr>
<tr>
<td>Kudzu</td>
<td>Pueraria lobata</td>
</tr>
<tr>
<td>Lotus+</td>
<td>Nelumbo nucifera</td>
</tr>
<tr>
<td>Yam</td>
<td>Dioscorea batatas</td>
</tr>
</tbody>
</table>

Community garden resources

The American Community Garden Association (ACGA) is a nonprofit organization of professional garden organizers, supporters and neighborhood leaders dedicated to improving communities nationwide through horticulture. Their Journal of Community Gardening (available for $30/year membership) provides a wealth of information and technical assistance on the development of community garden programs. Contact: ACGA, c/o Chicago Botanic Gardens, P.O. Box 480, Glencoe, IL 68022.
Acknowledgements

This booklet would not have been possible without the assistance of numerous individuals. The Community Garden Coalition of Columbia, Missouri supported this project in 1985 and 1986 by providing me with staff time and paying for expenses. I appreciate the help I received from the following people: the Cambodian and Vietnamese gardeners at the Claudell Lane Community Garden; Maureen O’Day for directing the Community Garden Coalition with me; Chanta Hem for personal information on Cambodian gardens; Huynh Quang Nhuong for personal information on Vietnamese gardens; Hong Lee of the Refugee Assistance Center (Columbia, Missouri) for Vietnamese vegetable names; Hong Por of the Refugee Assistance Center for Cambodian vegetable names; David Meyer and Teng Herr of the Refugee Assistance Center in Kansas City, Kansas, for information concerning Hmong refugee gardeners; David Austin for photos, (taken at the Claudell Lane Community Garden); Barbara Donette, Seattle PPatch, for showing me Hmong gardens in her city; Susan Jones for editing; and the following individuals for help in identifying some of the unusual species--David Dunn, University of Missouri Botany Department; Lincoln Constance, University of California at Berkley; Pete Lowry, Missouri Botanical Garden; Tom Antonio, Chicago Botanic Garden; and Tim Plowman, Botany Dept., Field Museum of Natural History (Chicago).

Development of a Southeast Asian refugee garden program

It has been an enjoyable experience working with Cambodian and Vietnamese gardeners and doing the research and writing that have resulted in this booklet. I hope that this work is the first step in the establishment of a nationwide program for developing community gardens for Southeast Asian refugees.

Seed sources

Baker Creek Heirloom Seeds
2278 Baker Creek Road
Mansfield, MO 65704
(417) 924-8917
http://rareseeds.com/seeds/Asian-Beans

Evergreen Y.H. Enterprises
P.O. Box 17538
Anaheim, CA 92817
(714) 637-5769
http://www.evergreenseeds.com/vegetableseeds.html

Johnny’s Selected Seeds
955 Benton Avenue
Winslow, Maine 04901
877-564-6697
http://www.johnnyseeds.com
Bibliography


