

## Chapter 8. Production of Major Asian Vegetables in Florida

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The term “Asian Vegetable” is a broad one which encompasses both the vegetables grown in the countries that comprise Asia and those eaten by people of Asian extraction or who like Asian cuisine. Since many of the vegetables which are described in this chapter are members of families that are covered in depth in other chapters in this volume, that information will not be duplicated.

### CRUCIFERS

This group (Tables 1a and 1b) includes primarily crops with edible leaves, with the exception of kohlrabi where the swollen stem is consumed and daikon which is an edible root. They can be grown on raised beds without mulch (or with mulch if it is cost effective) and with drip, overhead or subsurface irrigation. Fertilizer recommendations for these crops are found in Chapter 7 under broccoli, cabbage or Chinese cabbage, except for daikon which is in Chapter 18. For pest control products, these crops are included in Crop Group 5 [Brassica (Cole) Leafy Vegetables]. The exception is daikon, which is in Crop Group 1 (Root and Tuber Vegetables) and is covered in Chapter 18.

#### BOTANY Nomenclature

Family – *Brassicaceae* (Cruciferae)

Cabbage, flat - *Brassica oleracea* var. *capitata*

Chinese broccoli / gailan or gai lan / kailan or kai lan / flowering kale - *Brassica oleracea* var. *alboglabra*

Chinese cabbage [includes: napa (tight headed) and chihili (semi-loose headed)]- *Brassica rapa* var. *pekinensis*

Chinese mustard (includes: bok choy, Shanghai choy / baby bok choy, yuchoi / yuchoy / u-choi / choy sum - *Brassica rapa* subsp. *chinensis*

Kohlrabi - *Brassica oleracea* var. *gongylodes*

Oriental radish: Daikon (Japanese) / lobok or lo bok (Chinese) - *Raphanus sativus* var. *longipinnatus*

### CUCURBITS

This group (Tables 2a and 2b) includes, eaten either immature or mature, and several vegetables with edible tender stems and leaves. All can be grown on raised beds, with or without plastic mulch, and with drip, overhead or subsurface irrigation. Most of the crops are trellised, primarily to maximize space, minimize bud drop and fruit rot caused by over shading and exposure to soil moisture and diseases and promote straight fruit. Winter melon is the exception since it is generally too heavy to trellis. Fertilizer recommendations for cucumbers (Chapter 9) are applicable for fuzzy melon, long gourd, both luffas, bittermelon and snake gourd. Recommendations for watermelon (Chapter 9) should be followed for winter melon and chayote. With the exception of chayote, where the entire fruit is planted, these crops are started from seed and grown as transplants prior to being set in the field. For pest control products, these crops are included in Crop Group 9 (Cucurbit Vegetables).

#### BOTANY Nomenclature

Bittermelon (Chinese and Indian types) - *Momordica charantia*

Chayote - *Sechium edule*

Fuzzy melon (immature fruit) and winter melon (mature fruit) - *Benincasa hispida*

Long gourd (oopoh) - *Lagenaria siceraria*

Angled luffa (silk squash) - *Luffa acutangula*

Smooth luffa - *Luffa aegyptica* (cylindrica)

Snake gourd - *Trichosanthes cucumerina*

**Table 1a.** Varieties of Asian Brassicas

<b>Crop</b>	<b>Varieties</b>
Cabbage, flat	Drumhead, KK Cross, KY Cross
Chinese broccoli / gailan / flowering kale	Green Lance
Chinese cabbage	
napa (tight-headed)	China Express, China Pride
chihili [semi-loose headed]	Michihili, Monument, Jade Pagoda
Chinese mustard	
bok choi	Canton Choice, Ching-Chiang, Hybrid Lucky choy, Long White, Short White
Shanghai choy / baby bok choy	Dynasty, Shanghai Green
yuchoi / yuchoy / u-choi /choy sum	Dwarf, Extra Dwarf,
Kohlrabi	Peking, Purple
Oriental radish	Daikon (Japanese): Everest, Hybrid Everest, Mikura Cross, Mino Early, Relish Lobok / lo bok (Chinese): Red Meat

**Table 1b.** Seeding and Planting Information for Asian Brassicas

<b>Planting dates</b>	<b>Chinese broccoli</b>	<b>Chinese cabbages</b>	<b>Chinese mustards</b>	<b>Daikon</b>
North Florida	Aug - Feb	Aug - Feb	Aug - Feb	Sept- Mar
Central Florida	Sept- Apr	Sept- Apr	Sept- Apr	Sept- Apr
South Florida	Sept- Apr	Sept- Apr	Sept- Apr	Sept- Apr
<b>Seeding information</b>				
Number of rows/44-inch wide beds (6 ft centers)	3-4	2-3	4	3 (fall/spring) to 4 (winter)
Distance between rows (in)	11	14 or 24	14 - mustard 11 – others (below)	11
Distance between plants (in)	3-5	14-18	12-18 mustard 8-12 Shanghai/choy sum 6-10 baby bok choy 2-4 u-choy	6-9
Seeding depth (in)	0.25 – 0.5	0.25 – 0.5	0.25 – 0.5	0.25
Seed per acre (lb)				
Days to maturity from seed				
Plant populations (acre)	116,160	18,671	29,040 mustard 43,560 Shanghai/choy sum 58,080 baby bok choy 174,240 u-choy	58,080

**Table 2a.** Varieties and Trellising Requirements of Asian Cucurbits

Crop	Varieties	Trellising
Bittermelon – Chinese	Chinese: Hong Kong Green, Hybrid Bangkok Large, Japan Green Sprinkle, Taiwan Large	Yes
Bittermelon - Indian	Indian: Hybrid India Star NS, India Green Queen, India long Green	
Chayote (short lived perennial)	The seed is the viviparous fruit itself. There is some debate as to whether varieties remain true	Yes
Fuzzy melon	Chiang Shin Joker, Seven Star Long	Yes
Long gourd	Hybrid India Long, Hybrid Asia Short	Yes
Angled luffa	Hybrid Green Glory, Lucky Boy, Summer Long	Yes
Smooth luffa	Smooth Beauty, Smooth Boy	Yes
Snake gourd	Extra Long Dancer, Hybrid Snaky, Long EX	Yes
Winter melon	Hybrid Asia Sweet, Hybrid Red Doll, Hybrid Wonder Wax	No

**Table 2b.** Seeding, Planting Information for Asian Cucurbits

Planting dates	Bittermelon	Long gourd	Angled luffa	Smooth luffa
North Florida	Feb – Apr; July – Aug	Feb – Apr; July – Aug	Feb – Apr; July – Aug	Feb – Apr; July – Aug
Central Florida	Jan – Mar; Sept	Jan – Mar; Sept	Jan – Mar; Sept	Jan – Mar; Sept
South Florida	Sept - Feb	Sept - Feb	Sept - Feb	Sept - Feb
<b>Seeding information</b>				
Distance between rows (in)	60 – 72	60 – 72	60 – 72	60 – 72
Distance between plants (in)	36 – 60	36 – 60	36 – 60	36 – 60
Seeding depth (in)				
Seed per acre				
Days to maturity from seed	80 – 100			
Days to maturity from transplant				
Plant populations (acre)	2904	2904	2904	2904
Planting dates	Fuzzy melon	Snake gourd	Chayote <sup>1</sup>	Winter melon
North Florida	Feb – Apr; July – Aug	Feb – Apr; July – Aug	Not recommended	Feb 15 – Apr 15
Central Florida	Jan – Mar; Sept	Jan – Mar; Sept	Not recommended	Jan 15 – Mar 15
South Florida	Sept - Feb	Sept - Feb	Sept - Feb	Dec 15 – Mar 1
<b>Seeding information</b>				
Distance between rows (in)	60 – 72	60 – 72	60 – 72	72 – 108
Distance between plants (in)	36 – 60	36 – 60	36 – 60	60 – 72
Seeding depth (in)	1.5 – 2.0	1.5 – 2.0	Whole fruit is used – should be covered half way	1.5 – 2.0
Seed per acre			2904 – whole fruit	
Days to maturity from seed				
Days to maturity from transplant				
Plant populations (acre)	2904	2904	2904	1452

<sup>1</sup> Chayote flowers and sets fruit under short day conditions and lives for a few years, so it is not recommended for areas where freezing temperatures are likely to occur on an annual basis.

## LEGUMES

The Asian legume group (Tables 3a and 3b) includes fruits (usually known as pods), which are eaten at the immature stage, crop with edible immature seeds (green shell), and stem tips. The winged bean also has edible leaves and roots, though the latter do not appear to be cultivated commercially in the Continental U.S. All the pole or indeterminate types can be grown on raised beds without mulch using drip, overhead or subsurface irrigation. Fenugreek does not grow well in rocky soils, such as those found in Miami-Dade County. Pigeon peas are a semi-perennial shrub in warmer areas. Many pigeon pea and winged bean varieties are short day and only flower during the fall. There are some day neutral varieties available of both crops. Fertilizer recommendations for pole beans are generally applicable to this group. All of these crops are started from seed, though winged beans require scarification prior to planting. All the indeterminate types need some type of support, ranging from individual bamboo stakes to trellises. For pest control products, these crops are included in Crop Group 6 (Legume Vegetables [Succulent or Dried]), with the exception of pea shoots which are not in a crop group at present.

### BOTANY Nomenclature

Cluster bean, Guar – *Cyamopsis tetragonolobus*

Edamame – *Glycine max*

Fenugreek, methi – *Trigonella foenum-gracum*

Hyacinth bean, lablab bean – *Lablab purpureus*  
(*Dolichos lablab*, *D. nigar*, *Lablab vulgaris*)

Pigeon pea – *Cajanus cajan*

Snow / snap (edible podded) pea – *Pisum sativum*

Winged bean – *Psophocarpus tetragonolobus*

Yard-long bean – *Vigna unguiculata*

## SOLANUMS

The Asian solanum group (Tables 4a and 4b) includes three types of eggplant and bird's eye pepper. Pea eggplant, which was discussed in previous editions of the Handbook, is on the Federal Noxious Weed list, so it has not included here. The harvestable product includes fruits which are eaten at the immature or mature stage. All can be grown on raised beds with or without plastic mulch and using either drip or subsurface irrigation. As with most eggplants, these types tend to be short-lived perennials, especially the Thai eggplant which is a relatively compact, stocky plant. They can be severely pruned and allowed to regrow if staking does not prohibit this operation. Fertilizer recommendations for eggplant should be used for the three types of eggplant, while those for peppers should be followed for bird's eye peppers (Table 4c). These crops can be started from seed or transplants. All the indeterminate types need some type of support.

### BOTANY Nomenclature

Oriental eggplant, Japanese / Chinese – *Solanum melongena*

Thai eggplant – *Solanum melongena*

Indian eggplant – *Solanum melongena*

Bird's-eye pepper – *Capsicum frutescens* though some say perhaps *C. chinense*

## SEED SOURCES

Evergreen Seeds,  
<http://www.evergreenseeds.com/>

Johnny's Selected Seed,  
<http://www.johnnyseeds.com/>

Kitazawa Seeds,  
<http://www.kitazawaseed.com/>

Known-you Seed Company, Ltd.,  
<http://www.knownyou.com/>

Redwood City Seed Company,  
<http://www.ecoseeds.com/>

Sakata,  
<http://www.sakata.com/Catalog.aspx>

Takii Seeds,  
<http://www.takii.com/>

**Table 3a.** Names, Life Cycle, Varieties and Trellising Requirements of Asian Legumes

Crop	Life cycle	Varieties	Trellising
Cluster bean, Guar	Annual		Yes
Edamame	Annual	Green Legend, Lucky Lion	No
Fenugreek, methi	Annual		No
Hyacinth bean, lablab bean	Annual	Asia Purple, Asia White	No
Pigeon pea (a short-lived perennial)	Short-lived perennial		No
Snow / snap (edible podded) pea	Annual	Mammoth Melting Sugar, Dou Miao	Yes
Winged bean	Annual	Youdou	Yes
Yard-long bean	Annual	Orient Extra Long, Stickless Wonder	Yes

**Table 3b.** Seeding, Planting and Maturity Information for Asian Legumes

Planting dates	Cluster bean	Fenugreek	Edamame	Hyacinth bean
North Florida	Mar – Apr; Aug	Mar – Apr; Aug	Mar – Apr; Aug	Mar – Apr; Aug
Central Florida	Feb – Mar; Aug – Sept	Feb – Mar; Aug – Sept	Feb – Mar; Aug – Sept	Feb – Mar; Aug – Sept
South Florida	Sept - Apr	Sept - Apr	Sept - Apr	Sept - Apr
<b>Seeding information</b>				
Distance between rows (in)	24	9	20 - 24	20
Distance between plants (in)	6	2 – 3, thin to 4 (if only growing a small amount)	2 – 6	4 - 6
Seeding depth (in)	1 – 1.5	1 – 1.5	1 – 1.5	1 – 1.5
Seed per acre	43,560	348,480	156,820	78,409
Days to maturity from seed	90 – 120			
Plant populations (acre)				
Planting dates	Pigeon pea	Snow / snap pea	Winged bean	Yard-long bean
North Florida		Jan – Mar		Mar – July
Central Florida		Nov – Feb		Feb – Aug
South Florida	Mar – Apr	Nov – Feb	Mar – Apr	Sept - Apr
<b>Seeding information</b>				
Distance between rows (in)	24 – 36	30 – 36 (hand harvest) 8 – 10 (machine harvest)	36	28 – 36
Distance between plants (in)	24 – 36	1.2 – 2	8	2 – 4
Seeding depth (in)	1 – 1.5	1 – 1.5	1 – 1.5	1 – 1.5
Seed per acre				
Days to maturity from seed	180 (early varieties); 270 – 365 days (late varieties)		90 – if day neutral varieties are used; SD otherwise	70
Plant populations (acre)	10,890	174,240 (hand)	21,7801	112,012

**Table 4a.** Names, Varieties and Trellising Requirements of Asian Solanums

<b>Crop</b>	<b>Varieties</b>	<b>Staking</b>
Oriental eggplant, Japanese / Chinese	Japanese: Hybrid Mangan Chinese: Hybrid Purple Charm, Ma-Zu Purple	Yes
Thai eggplant – this can be a short-lived perennial	White: Hybrid White Ball Green: Green Beauty Purple: Hybrid Violet Prince Variegated: Hybrid Tiger	Maybe
Indian eggplant, dark & wine colored	Hybrid Bharata Star, Hybrid Chu-Chu	Yes
Bird's-eye pepper		Maybe

**Table 4b.** Seeding, Planting and Maturity Information for Asian Solanums

<b>Planting dates</b>	<b>Eggplant</b>			<b>Bird's eye peper</b>
	<b>Japanese/ Chinese</b>	<b>Thai</b>	<b>Indian</b>	
North Florida	Feb – Mar	Feb – Mar	Feb – Mar	Aug 15; Feb – Mar
Central Florida	Aug – Sept; Jan – Feb	Aug – Sept; Jan – Feb	Aug – Sept; Jan – Feb	Aug – Sept; Jan – Mar
South Florida	Aug - Feb	Aug - Feb	Aug - Feb	Aug – Feb
<b>Seeding information</b>				
Distance between rows (in)	36 – 72	36 – 72	36 – 72	36 – 48
Distance between plants (in)	18 – 40	36 – 60	18 – 40	10 – 24
Seeding depth (in)	0.5 – 0.75	0.5 – 0.75	0.5 – 0.75	0.5 – 0.75
Seed per acre to transplant (lbs)	0.25 – 0.5	0.25 – 0.5	0.25 – 0.5	0.25 – 0.5
Days to maturity from transplant				
Plant populations (acre)	9,680	9,680	4,840	17,500