

# Heirloom Seed Library 2017 And Seed Saving Instruction Guide



# Welcome to the Heirloom Seed Lending Library

**The Heirloom Garden** broke ground in 2014, when Master Gardeners and the North Yakima Conservation District partnered to provide land, water, and start-up funds for a vegetable garden of open pollinated and heirloom varieties, many of which are rare and endangered. The garden creates a hands-on learning experience, using low-cost, sustainable, organic methods. The main goal is to create and maintain a seed lending library, provide free gardening education; and all remaining produce is donated to local food banks and meals programs. Every year we donate nearly a ton of fresh produce to our community.

**The Heirloom Seed Lending Library** loans seed to gardeners who plant the seed and then return new seeds that they grew from the borrowed ones. We understand that not all the borrowed seeds will grow to maturity and not all the seeds saved will be viable. Things happen! Learning to save seed is a process, and our free seed saving classes may help. By joining with other seed savers we improve health and nutrition; grow varieties with the flavor and qualities of our choosing (rather than that of large commercial growers); adapt varieties to our unique climate and soils; and increase plant diversity throughout our community. The Heirloom Seed Lending Library is a new project that is open to the public on a limited basis due to the size of our seed inventory.



Children tour the garden.

**Master Gardeners Free Classes** on topics specific to vegetable gardening are offered on the third Saturday of each month from May to September at 10:00 AM in the Heirloom Garden, located at 1522 South 18th Avenue, Yakima (the same location as our Plant Sale). The Heirloom Garden is open to the public by invitation or upon request. Contact Master Gardeners at: [gardener@co.yakima.wa.us](mailto:gardener@co.yakima.wa.us) or **574-1604** for more information.

The Demonstration Garden is an ornamental garden located in Ahtanum Youth Park, at 1000 Ahtanum, Union Gap. Free classes are offered on a wide range of garden related topics on the second and fourth Saturday of each month from April to October at 10:00 AM. The Demonstration Garden is open to the public during park hours. Parking is free while visiting the garden.



How to Prune Tomatoes

# Asian Long Beans

(*Vigna Unguiculata*) Long Beans are a warm weather staple crop of East Asia where they have been grown for centuries. The tender pods are crisp and rarely have strings. Very heat tolerant and high yielding. The aggressive vining habit requires a strong trellis for support. Plant 2-3 weeks after all danger of frost when soil temps are above 65°. Direct sow 1 inch deep and 3 inches apart. Harvest before beans inside begin to swell or pods will become fibrous, especially in the red varieties. Beans very rarely cross pollinate.



## Greenway Asparagus Bean

Vigorous climbing vines are easy to grow. Heavy yields. Needs warm soil to germinate and sturdy trellising. Pick when long green pods are 12-18 inches long. Best when sautéed, stir fried or pickled. 70 days. Seed donated by Diana Pieti.



## Chinese Red Noodle Bean

Vigorous climbing vines are easy to grow. Heavy yields. Needs warm soil to germinate and sturdy trellising. Pick when long burgundy pods are 12-18 inches long. Beautiful burgundy beans are easy to see at harvest. Some of the red color is retained when cooked. Especially attractive when mixed with green long beans and sautéed together. 70 days.

## Arikara Yellow Bush

Named for the Arikara Nation of South Dakota. This tribe of farmers suffered repeated small pox epidemics to near extinction. Sick and starving, they welcomed Lewis and Clark, sharing this seed. In 1807, Thomas Jefferson declared Arikara to be the very best (dried) bean. They can be eaten as a shelling or dried bean. 60-90 days. Seed donated by Monticello.



## Bountiful Bush

The name 'Bountiful' won the \$25 prize in a contest in 1899 when this variety was first introduced. Very early, productive, and hardy. Pods are 6" long on mounding plants 15" tall and 18" wide. 50-60 days.



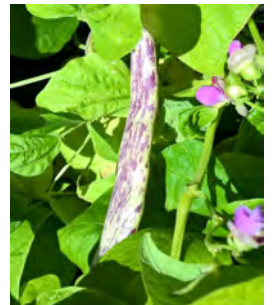
## Cherokee Wax Bush

A yellow wax bean with shiny black seeds at maturity. Can be eaten as a snap or dried bean. Very heavy yields. Resistant to pests and tolerant of poor weather conditions. Bush beans tend to produce all at once. For higher yields, stagger planting every 2 weeks until mid July. 45-55 days.



## Dragon's Tongue Bush

An heirloom wax bean originally cultivated in Holland in the 1700's. The 6-7 inch pods are yellow with purple streaks. Early, compact plants. High yields. Can be used as snap or shelling bean, are especially good in stir fries. Very attractive, compact plants. Also grow well in containers. 60-90 days.



## Scarlet Runner

Grown primarily for its red flowers but every part of this plant is edible. Vigorous vines grow up to 20 feet. Bean pods develop late in the cool fall weather. Survives light frost. Flat pods are 6-8" long with very good flavor, firm, meaty texture. Good steamed, sautéed, pickled, or frozen. Very attractive to hummingbirds and bees. High yields. 90 days.



# Beans (Bush, Pole, Runner)

(*Phaseolus vulgaris*) Pole and bush beans and are a warm weather staple crop of North and South America where they have been grown for over 2000 years. The immature pods are tender and crunchy, and should be eaten before the seeds fill out. In shelling beans the seeds are filled out but still green and tender, the pods are not eaten. For dried beans, leave pods on the plants until mature and pods dry on the vine. Strings develop in all varieties as pods mature.

(*Phaseolus coccineus*) Runner beans are usually grown ornamentally but all parts are edible. Pods develop in cool fall weather, growing long, wide, and flat. The bean pod texture is firm and meaty, holds up well for pickling, freezing, and canning. Not fibrous or stringy until seeds are filled out. Flowers are very attractive to hummingbirds. Long vines need very sturdy support. Rarely cross pollinate.

For all beans, sow 1 inch deep, 6 inches apart when soil temps are above 60-65°. Pole and runner beans need strong trellising.

## Beets and Chard

(*Beta vulgaris*) Beets have been eaten since ancient times in Egypt and Greece, and were spread across Europe by the Roman army. Centuries of selection have created, sugar beets, forage beets, table beets (known as beetroot in Europe) and chard, but all are botanically the same species. Beets will germinate in cool weather; but actually prefer very warm weather and soil to germinate, 70-85°, then mature in gradually cooling weather. Survives light frost. Sow in full sun or light shade in fertile soil 1/2" deep and 2" apart, then thin to 4" apart in all directions (8" for chard). Beets are biennials that grow roots and leaves the first season but will not flower or set seed until the roots are mature and have been exposed to 6 weeks of cold weather, consistently between 32-40°. All beets and chard can cross pollinate and pollen can travel up to 5 miles in the wind. This doesn't create much problem for home gardeners as so few let beets set seed.



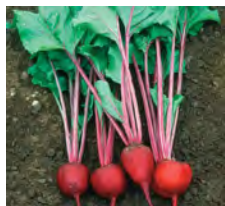
### Bull's Blood

This beet has leaves that are colors of iridescent dark purple and magenta. Leaves and roots are most tender when small. 40 days for leaves, 60 for roots.



### Detroit Dark Red

Old variety introduced in 1892. Good all purpose beet. Very dark red, uniform roots. 60 days.



### Early Wonder Tall Top

Grows well in both warm and cool weather. Tall glossy leaves are a good choice for greens. 50 days.



### Fordhook Giant White Chard

Very mild flavor. Large leaves can be used like spinach. White stems can be used like celery. Grows from early spring until hard frost. With a layer of mulch it may winter over and grow again in spring. 50 days.



### Ruby Red Chard

So beautiful it works well in ornamental beds too. Leaves can be used like spinach, stems like celery. Grows from early spring to hard frost. With a layer of mulch it may winter over and grow again in spring. 50 days.

## Carrots

(*Daucus carota*) Wild carrots date back 10,000 years and are found throughout Asia, the Middle East, and Europe, but probably originated in ancient Persia. Wild carrots are very tiny and bitter. Originally used as medicine, they were domesticated 5000 years ago. Selection for large roots and sweet flavor has made the carrot one of the most widely eaten root crops in the world. Orange carrots were originally selected from yellow and purple carrots in the 1500s in Holland.

Sow carrots in early May for a summer crop or mid July for a fall and winter crop. Carrots need deeply prepared light soil. Sow seed 1/4" deep, thin to 4" apart. Carrots that reach maturity in cool weather are much sweeter than those ripened in summer heat. Carrots will overwinter with 4-5 inches of mulch. Carrots are biennials growing leaves and roots in the first year and flowers that set seed in the second. Flowers are insect pollinated and need at least 8 plants to assure numerous visits by pollinators. Cross pollination occurs between all varieties including wild carrots and Queen Anne's Lace.

### Atomic Red

A carrot with dark red skin and deep red-orange flesh. Long roots 6-8". 65 days.



### Chantenay

Develops very thick, stocky roots up to 2 pounds each, when allowed to mature in fall and overwinter. One of the best varieties for winter gardens. 60 days.



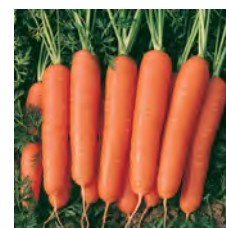
### Little Fingers

Very sweet. Small shallow roots are a better choice for heavy clay soils than longer rooted carrot varieties. 50 days.



### Scarlet Nantes

Good all purpose carrot, adapts to a wide range of soils and climates. 65 days.



### Yellowstone

A totally yellow carrot with a mild flavor. Can be eaten small or let grow very large for a winter storage carrot. 75 days.



# Cucumbers

(*Cucumis sativus*) Cucumbers originated in West Asia and have been cultivated for 3,000 years. They were spread across Europe by the Romans and arrived in the US in the 1600s. Do not plant until soil has warmed to 65°, as cold soil will result in poor germination. Plant in fertile soil with a steady supply of water. Applying mulch after the soil has warmed to 70°-75° will help retain moisture in the soil. Cucumbers set a large flush of fruits and then die back quickly. For higher yields and less problem with powdery mildew, plant a second crop about 4 weeks after the first planting. Trellising also reduces rot, powdery mildew, and some pest problems. Vines grow 5-6 feet. Cucumbers prefer to be direct seeded as they do not like to have their roots disturbed. If you decide to transplant, care should be taken to disturb the roots as little as possible. To save seed, fruits need to be very large, with hard skin, and should change color from green to yellow, tan, or orange. Cucumbers will cross pollinate with all other cucumbers (*c. sativus*). A few cucumbers are actually melons (*c. melo*) and will readily cross pollinate with all other melon varieties.

## Picklebush

Compact 2 foot vines, have 4", white spined fruits. Good yields. Resistant to powdery mildew. Good in containers. 55 days



## Straight Eight

All American Selections winner introduced in 1935. Smooth, dark green, straight with blunt ends are perfect for slicing and pickling. Harvest at 8 inches. 60 days.



## Suyo Long

Thin skinned, sweet ribbed fruits, 16" long from China. Harvest at any size. Trellis for straight fruits. Not heat tolerant. Blossoms and fruit set stop in the heat of August, dappled shade helps. 70 days. Original seed donated by Phyllis Pugnetti.



## Armenian Cucumber (*c. melo*)

Light-green, mild-tasting, ribbed fruits are actually melons and will cross pollinate with other melons but not cucumbers. The long fruits coil when growing on the ground, but grow straight when trellised. Best harvested at 12-18 inches, before the skin gets tough. 65 days.



## Gele Tros

An endangered yellow cucumber from Holland where it is called the 'ancient race'. Originally grown by the wealthy, as green cucumbers were considered common. Average yields of 8" very attractive fruits. Harvest when pale yellow. Fruits turn bitter and tough as the skin turns gold. To save seed wait until skin turns orange-tan. 60 days.



## Marketmore 76

The most popular cucumber grown in home gardens in the US and with good reason. Very high yields of dark green 8" fruits. Good slicer. Excellent taste, juicy, not bitter even when fruits get quite large. Disease resistant. Long vines benefit from trellising. Grow in fertile, warm soil. 60 days.

# Eggplant

(*Solanum melongena*) Eggplant originated in India or Asia over 2,500 years ago. The Moors brought it to Spain in the 8th century. Europeans thought it caused insanity and leprosy; so it took nearly 500 years to gradually become accepted as an edible. Today eggplant is eaten widely in Mediterranean cultures and is often eaten as a meat or pasta substitute. It is a warm weather crop that should be started indoors 8 weeks before transplanting in the garden. Plant seedlings about 2 feet apart, in full sun or light shade when the soil and night time temps are above 60°. Fruits are mature when they feel slightly soft. Immature fruits will be rock hard. Eggplant is attractive and works well in ornamental gardens and containers. To save for seed, fruits need to be very over mature. Leave ripe fruits on the plant for 4-5 extra weeks to allow seeds to fully mature. The fruit color should change to tan or brown, and have tough skin that has lost its shine. Eggplant can cross pollinate with other eggplant varieties. Grow only one variety or isolate by 500 feet.

## Ping Tung

Beautiful purple, 12"-18" long, slender, mild flavored fruits that are not bitter. White flesh. Very high yields. 70 days.





### Rosita

This beautiful eggplant came to the US from Puerto Rico in 1979 and is gaining in popularity. Stunning magenta-lavender color with pear shaped 8" fruits. White flesh. Slightly sweet, mild flavor that won't turn bitter. Average yields. 85 days.

## Lettuce

*(Lactuca sativa)* A cultivated crop since ancient times, originating around the Mediterranean 4,000 years ago. Lettuce is easy to grow but needs cool weather, bolting quickly in the heat. Direct sow in spring when soil is 50-65°. Seeds sprout and grow quickly in mild weather. Thin to 4" apart for leaf lettuce and 8-12" apart for head lettuce. Succession plant for a continuous crop. Harvest outer leaves of loose leaf varieties leaving the small center leaves to harvest again a few days later. For fall crop, sow 8 weeks before hard frost, when soil is no warmer than 72°. Lettuce varieties do not easily cross pollinate; an 8-10 feet isolation distance between varieties is necessary. For seed saving, you may harvest a few outer leaves before lettuce bolts. Seeds are ready 21 days after bloom.

### Red Leaf Lettuce

Broad red-bronze leaves are somewhat ruffled forming an open rosette. Harvest outer leaves leaving inner leaves to harvest a few days later. Grows continuously until hot weather arrives. 40-50 days.



### Red Romaine

Big upright heads with bright red crunchy leaves and chartreuse centers. Leaves are brighter red in light shade and more bronze in full sun. Harvest individual outer leaves, or wait until heads form. 50-60 days.



### Simpson Black Seeded

One of the most tender and delicately flavored leaf lettuces with large green ruffled leaves. Grows continuously until hot weather arrives. 40-50 days.



## Other Leafy Greens



### Buttercrunch Bibb

A very popular All American Selections winner. Loose heads have buttery texture. Cold resistance makes it a good choice for fall planting. Can harvest outer leaves or wait for heads to form. Dark green leaves with lighter yellow centers. 50-60 days.

### Arugula—Rocket (*Eruca sativa*)

Ancient crop grown in Rome. Tender smooth leaves with a peppery flavor. Small leaves are mild. Eat fresh or cooked. Compact plants are very cold hardy. Bolts quickly in the heat. Flowers are edible. 50 days. Original seed donated by Carol Woolcock.



### Merlot

A rare, loose leaf variety with beautiful glossy, curly leaves. The deepest red of all red varieties. Doesn't turn bronze. High in antioxidants. Has some heat and cold tolerance. 50-60 days. Original seed donated by Phyllis Pugnetti

### Kale—Blue Scotch Curly

*(Brassica oleracea)* Compact plants with curly leaves. One of the most cold hardy varieties. Kale will grow year round when mulched heavily in the fall. Will flower and set seed the following spring. Attractive in ornamental beds. 65 days.



### Parris Island Cos

Bred by the USDA on Parris Island, SC in 1952. Crisp romaine with 10" leaves. Prefers cool weather and partial shade. Tolerates heat and cold better than most varieties. Harvest individual leaves or wait until heads form. 40-50 days.

### Kale—Red Russian

*(Brassica oleracea)* Blue-green leaves with purple stems and veins. Very cold tolerant. Very mild flavor and tender leaves, usually wins blind taste tests. Kale will grow year round when mulched heavily in the fall. Will flower and set seed the following spring. Attractive in ornamental beds. 60 days.





### **Spinach** **Bloomsdale Long Standing**

(*spinacea oleracea*) A very old heirloom. Has large curled leaves, cold hardy, slow to bolt. Good yields. Prefers sun, tolerates shade. 50 days.



### **Sprigarello Riccio**

An ancient variety of leafy green very rare outside Italy. Frequently called leaf broccoli. Grows like kale. A cool weather crop, prefers shade in hot weather. Grows well even in full shade. Harvested for the leaves which are more tender than kale but with a very slight broccoli flavor. 50 days.

## **Okra**

(*Hibiscus esculentus* renamed *Abelmoschus esculentus*)

Okra is related to hibiscus, has beautiful flowers and pods, and is often grown ornamentally. It probably originated in Ethiopia and spread to Europe with the Moors, then came to the Americas with African slaves. Okra seeds are often pressed into oil or dried and ground into a coffee substitute. Okra is a tropical plant and should be started indoors about 8-10 weeks before planting into the garden. Okra grows very slowly and suffers insect damage when the soil and weather are cool, but grows rapidly in the heat and thrives when the temps soar into the 90s. In Yakima, plant into the garden around the first to the middle of June. Plant 1" deep and 12" apart in very fertile, well drained soil, in full sun. Pods should be harvested at about 3"-4" before they become tough and fibrous. To save seed, pods should be fully mature 7"-10" long, dry, and brittle.



### **Clear Clemson Superb**

Green pods and foliage. Seed donated by Ferry-Morse. No additional information is available.

### **Red Burgundy**

Deep red stems and pods, with large showy blooms of creamy white or pale yellow. A beautiful plant. Grows very quickly once the weather remains consistently above 85°. Harvest small pods often to keep productivity high. Needs 55 days of hot weather. Original seed donated by Monticello.



## **Peas**

(*Pisum sativum*) Peas are one of the oldest cultivated staple crops. They originated in the Near East and were originally grown for the dried seeds. Types of peas are—shelling, snow, and sugar snap. All are all grown the same way. They require light soil as the roots are not deep or vigorous. Plant seeds 1" deep and 3" apart in early spring when soil temp is around 50-55°. Pole peas need strong support. Bush peas may support each other when planted closely together in a wide row. Peas very rarely cross pollinate; no isolation distance is necessary. For seed saving, let pods remain on the plant until the pods are filled out with fully mature seeds, and the plants start to yellow and die back.

### **Dwarf Grey Sugar Snow**

Sweeter than most snow peas. Often grown for the beautiful edible lavender-red flowers and tender shoots. Average yields. Pick light green pods when very small, 2"-3" long, flat and not filled out. Very short vines, only 24" tall, don't need staking. 65 days.



### **Lincoln Shelling Pea**

Introduced in 1947. High yields of tender sweet shelling peas. Heat tolerant. Bush pea grows 24"-30" tall. 65 days.



### **Purple Podded Shelling**

Beautiful purple and magenta flowers are followed by deep-purple pods filled with green peas. Pretty enough to be grown as an ornamental. Used as a shelling pea. Strong, climbing vines 4'-5' tall. 60-65 days. Original seed donated by Sandra Westford.



### **Taichung Snow Peas**

Snow peas are grown for the edible pods and harvested before seeds develop. Usually eaten raw or in stir fries. Height of vines is inconsistent, growing 3'-6' tall. Some mild heat tolerance. 60-65 days.





### Sugar Magnolia Sugar Snap

The first purple podded sugar snap pea, grows on 6'-7' vines, beautiful purple flowers, sets pods over a long period of time. Sweetest before pods get too plump. Not as sweet as other sugar snap varieties. Very attractive in spring salads. 70 days.



### Sugar Snap

A snap pea with unusually thick-walled pods that are at their peak around 3 inches long. Very sweet. Pods are eaten fresh or sautéed. This is a bush variety that has some mild disease resistance. Grows to 30" tall. 60 days.

## Peppers

(*Capsicum annum*) Peppers are native to South and Central America. Columbus named the plant 'pepper' because it tasted a little like black pepper which at the time was the same price per ounce as gold. Columbus introduced the plants to Spain where they quickly spread throughout Europe. There are 5 species of peppers but *c. annum* includes most sweet and hot peppers. All peppers can cross pollinate. Genes for hot flavors are usually dominant. Peppers are frost tender and should be started indoors 8 weeks before transplanting. Peppers prefer warm weather, full sun, and moist, fertile soil that is 65° or warmer. Peppers are self-pollinating but can also be pollinated by insects. For seed saving, grow only one variety of pepper each season or maintain an isolation distance of 500'. Seed should be saved from very mature fruits. The color will change from green to red, orange or yellow and fruits will become dull and slightly soft, but not moldy or rotten. Hot peppers can be left on the plant until most of the fruits are dry, then pull the plants out with the roots intact and hang upside down in a warm dry area to store until using.

## Hot Peppers



### Cayenne Long Red

Plants are 2' tall, very vigorous and productive. Mature peppers are long slender, bright red, and very hot! Heavy yields make plants top heavy, may need staking or caging. 75 days.

### Habanero

Small, bright orange peppers are very hot! Water only when soil is dry to prevent bitterness. Plants are 2'-3' tall. 75 days.



### Jalapeno

Plants are 2' tall, very vigorous and productive. Peppers are often eaten green, but turn red at maturity. Mild heat. Heavy yields make plants top heavy, may need staking or caging. 75 days.



### Pepperoncini Greek

Sweet and only mildly hot. Peppers turn from green to yellow when ripe. Plants are 30" tall. Harvest when fruits are 2"-3" long. 65 days.



### Red Hot Chili

Fruit ripens from green to yellow, orange, and finally red. Medium hot fruits are 2" long on 18" tall plants. Attractive ornamental. Grow well in containers. 80 days.



## Sweet Peppers

### Antohi Romanian

This pepper is named for Jan Antohi, a Romanian acrobat touring the US in 1983, who defected and became a US citizen. With the fall of the Soviet Union he returned to Romania to visit his family in 1991. The story is that his mother sent some of her heirloom pepper seeds home with him so he could always have a taste of home. He donated some of the seed to Seed Savers Exchange. These are still hard to find in the US. A heart shaped, sweet pepper that is perfect for grilling. 50 days to yellow, 75 to red.







### California Wonder

An old time variety, introduced in 1928 and set the standard for bell peppers for decades. It has mild flavor, nice size of 4" blocky peppers, good yields. Most commonly used as a green pepper. Turns red when fully mature. 50-75 days.



### Chinese Giant Sweet Red

This sweet red pepper is not from China! It is a true American heirloom. Introduced by Burpee in 1900 as one of the first truly giant bell peppers, twice as big as any other bell pepper of its time. The high yields of huge blocky 4"-5", sweet, thick walled peppers that turn from green to bright red when mature. A real beauty with excellent flavor. 80 days. Seed donated by Phyllis Pugnetti.



### Etiuda

Blocky, thick walled, very sweet pepper, originally from Poland. Sturdy plants. Heavy yields of beautiful bright orange peppers. Rare outside Eastern Europe. 75 days.



### King of the North

Introduced in NY in 1934. A bell pepper for short-season growers, produces blocky fruits that are nicely flavored when picked green or red. Similar to California Wonder but more vigorous in northern areas. More tolerant to cool and hot weather than most peppers. 70 days.



### Sweet Banana

Very productive plants 24" tall. Mild yellow peppers are 6" long and slender turning bright red at maturity. An All American Selections Bronze Medal winner in 1941. Very ornamental. Very heavy yields. 75 days.

## Squash & Pumpkins

Squash and pumpkins are botanically the same. Originating in South America, they are an ancient staple crop that is now found around the world. Squash requires warm weather, and warm fertile soil 65-75°. Most are not frost tolerant. Summer squash are eaten at immaturity while still small and tender. Winter squash are mature when the skin is hard, but should be stored 1-3 months before eating to allow sugars to fully develop. Many can be stored for 4-12 months in a dry, cool place 60-65°. All squash are from 4 *Cucurbita* species: *c. maxima*; *c. mixta* (newly named *c. agyrosperma*); *c. mochata*; and *c. pepo*. Squash can cross pollinate only with other varieties from within the same species. To prevent cross pollination plant only one variety from each species in any growing season, or isolate and hand pollinate. All squash needs to be very over ripe for seeds to be mature. Grow several plants to insure enough blossoms for good pollination. Adding blooming cover crops or other flowers to the squash patch will encourage pollinators and increase and fruit set.

## Ornamental Pumpkins

### Jack Be Little (*c. pepo*)

Children love these! Mini pumpkins are 6-8 ounces and perfect for fall decorations or used as bowls for individual servings of pumpkin custard or squash soup. Vines grow up to 10' and bear 6-7 fruits per vine. Grows well on a fence or trellis. 95 days.



## Summer Squash

### Cocozella di Napoli (*c. pepo*)

An Italian heirloom squash that gets very large, very quickly. Harvest while fruits are still small, 4-10". Similar to Costata Romanesca but slightly smaller plants and fruits. 55 days.





### **Costata Romanesca** (*c. pepo*)

A rare Italian squash considered by many to have the best taste and texture of all zucchini. It is ribbed and green with lighter green stripes. Fruits get very large. Best harvested at about 12" while the blossom is still attached, but the flavor and texture remain very good up to 2'-3'. One of the few varieties that is good when dried. 60 days.



### **Dark Green Zucchini**

(*c. pepo*) Medium sized bushy plants produce very high yields. Fruits are very dark green, almost black and should be harvested at 6-10" for best flavor. 55 days.



### **Tromboncino** (*c. mochata*)

This rare Italian heirloom can be used as either summer or winter squash. Harvest like zucchini when it is 4-12", green and immature. For winter squash, wait to harvest until the fruits are 3-4' long, turn tan, and the skin becomes hard. Tastes much like butternut squash. The neck is all edible flesh; the seeds are in the bulb. When allowed to sprawl on the ground the fruits will form loops. When grown on a sturdy trellis fruits will be straight. Vigorous vines up to 15 feet. Resistant to pests and disease. Very high yields of 5-7 pound fruits. Will store 4-6 months. 60-90 days.



### **White Scallop Bush** (*c. pepo*)

A favorite among natives of the Americas for centuries. Exported to Europe where writings show it had gained widespread popularity by 1591. It was the most popular vegetable eaten by colonial Americans. This is a bush variety, but is still quite large. Best flavor when picked at 3" or smaller when fruits are still very tender. 45 days.

## Winter Squash

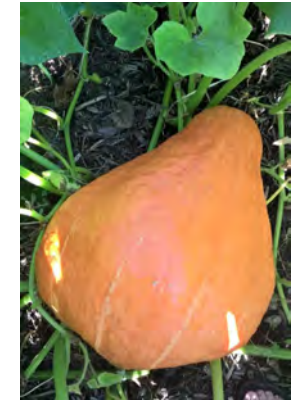
### **Acorn Table King** (*c. pepo*)

Good variety for the small garden. Glossy, dark green, ribbed 2 pound squash have thick pale orange flesh with excellent flavor. Compact 2' tall plants yield 5 to 8 fruits each. An All American Selections winner in 1974. 85 days.



### **Boston Marrow** (*c. maxima*)

Endangered variety. Large 20-30 pound, pear shaped, bright red-orange, sweet squash. Beautiful in fall decor. First documented in 1831 in Buffalo NY when Native Americans distributed seed as they travelled. Its cold tolerance made it one of the most common varieties grown in North America for 150 years. Vines grow to 15' or more. Heavy yields. Will store 6-10 months. 100 days.



### **Burgess Buttercup** (*c. maxima*)

Buttercup was introduced in 1931. The compact Burgess bush variety was introduced in 1952. Turban shaped fruits with a distinct button on the blossom end are 3-5 pounds with sweet orange flesh. 95 days.



### **Butternut** (*c. mochata*)

All American Selections winner in 1970. This squash was used for many years in commercially canned pumpkin. Fruits are sweet, 4-5 pounds and have thick flesh with a small seed cavity. 95 days.



### **Jarrahdale** (*c. maxima*)

This stunning blue-green pumpkin comes from the town of Jarrahdale in New Zealand. Fruits weigh 8-10 pounds with thick, sweet, golden flesh and a small seed cavity. Long keeper. Attractive in fall displays. 100 days. Original seed donated by Diana Pieti.



## Oregon Homestead

### Sweet Meat (*c. maxima*)

Endangered squash with very sweet, thick flesh and small seed cavity. Blue-green fruits lighten to grey-white or tan when ripe. Leave on the vine as late into the season as possible. Harvest right before frost. Heavy yields of large 12-25 pound squash. Stores well for 10-12 months. Start seed indoors 4-6 weeks before last frost date. 100 days. Seed donated by Phyllis Pugnetti.



### Spaghetti Squash (*c. pepo*)

This squash was introduced in 1934 in Japan. A very popular 3-5 pound squash with stringy flesh that is used as a vegetable spaghetti. 90 days



### Sugar Dumpling (*c. pepo*)

Small 1-2 pound green and cream striped fruits with sweet orange flesh, usually turning gold and cream after harvest. Average yields. Vines are a little brittle, use care if trellising. Good when stuffed and baked. 90 days.



### White Cushaw (*c. mixta*)

A rare squash with white skin and sweet, golden flesh. Easy to grow, good yields of large 15-25 pound fruits. Good pest resistance and cold tolerance. Leaves have a pattern of silvering which is normal and should not be mistaken for powdery mildew. A popular heirloom from the South introduced in 1891. Will store 5-6 months. 100 days.



## Solanum Berries

These are not true berries but are related to eggplant, and peppers. Solanum berries should be harvested when very ripe with no traces of green. The plants are attractive and look a bit like large pepper plants with clusters of small blossoms and colorful berries.

## Garden Huckleberries

(*Solanum scabrum*) Plants have clusters of 6-8 small white flowers all along the vines that develop into clusters of shiny, dark purple berries. Let berries ripen on the vine until some begin to look powdery and a few start to shrivel, then harvest the whole plant. Cooked berries taste a bit like Concorde grapes combined with blueberries. Must be cooked with lemon and sugar to develop flavor. Good in pies and jam. Yields 3-5 pounds per plant. Attractive plants are 30" tall and do well in containers. Raw berries have an unpleasant bitter metallic taste.



## Tomatoes

(*Lycopersicon lycopersicum*) An ancient crop native to South America. Types of tomatoes include:

**Determinant (det)** with short vines 2'-4' that should not be pruned, except to remove all the branches near the ground to prevent leaves and fruits from touching the soil. About 75% of fruit ripens at the same time. Plants are smaller and often times labeled as bush, or patio tomatoes.

**Semi-determinant (s-det)** are in all respects like determinate except that they grow to 5'-8' tall and need to be staked or trellised or need room to sprawl on the ground.

**Indeterminant (ind.)** have long vines, 10-15 feet. They set fruit all season and usually benefit from pruning. Need very sturdy trellising, or allow to sprawl on the ground.

Tomato seed should be saved from a minimum of 6 plants to assure adequate genetic variation. Plants are self-pollinating so no isolation distance is necessary. Plant indoors 6-8 weeks before last frost date. Transplant outdoors when soil temps are 60-70°. Plants thrive and set fruit when air temps are between 65-85°. Most tomato plants will not survive when soil is consistently colder than 50°, and will not set fruit when air temp is consistently over 90°.

## Determinant Tomatoes

### Heintz 9129 (det.)

Average yields on small plants, only 24-30" tall, good in containers. Developed for commercial uses at a Heintz Company breeding station. Taste and texture are similar to a commercial processing tomato. Tough skin and flesh, holds up for canning chunky sauces and salsas. 5-8 ounce fruits. 75 days.





### **Karen's Orange** (det.)

Very rare. Very high yields on a small plant, 24-30" tall. Good in containers. Sweet, and juicy, with beautiful orange color. Sets fruit in hot and cool weather. We renamed this tomato from Orange King to Karen's Orange as there are several varieties named Orange King; and all have very different qualities. Karen Orange is a retired teacher and Master Gardener. 65 days.

### **Sweet Israeli** (s-det.)

Bred for the hot, dry climate of Israel. A variety for commercial uses, has firm skin and flesh. Red 5-8 ounce tomatoes, moderate yields. Performs well during hot weather when others fail. Grows 6'-8' tall with wispy foliage. Not prone to sunscald. 75 days.



## Indeterminant Tomatoes

## Semi-determinant Tomatoes



### **Ace 55 Bush** (s-det.)

Excellent for slicing and salads. A low-acid fruit that produces good yields of 6-10 ounce sweet, mild fruits. Low-acid tomatoes cannot be safely canned in an open water bath. Plants are 4'-6' tall. 75 days.

### **Azoychka** (ind.)

Very rare. Bred by a Russian hobby gardener. Beautiful bright lemon yellow, early tomato with 5-8 ounce fruits. High yields. A good balance of sweet and tart especially for a yellow variety. Selected by Tomato Growers Supply as the 2013 Tomato of the Year. For best flavor, harvest before color turns from yellow to gold. 65 days.



### **Black Sea Man** (s-det.)

A beautiful, rare Russian heirloom from the Black Sea area. Prefers less water than most varieties. Dense canopy of potato leaves prevents sunscald. Plants are 8' tall. Very high yields of 8-12 ounce fruits. Thick branches require staking to prevent breaking under weight of fruits. At maturity the color is a deep mahogany with olive green shoulders. Fruit is very juicy with intense flavors of savory, smoky, sweet, and tart. Awarded the *Best Tasting Tomato* at Tomatofest 2016. 75 days.



## Sweet Tomatoes

Some of the sweetest and most flavorful tomatoes have green shoulders, a trait where the fruit ripens from the bottom to the top with the shoulders being the last part to change color. About 80% of the sugar in tomatoes is developed in the leaves and later transported to the fruit. Green shoulders on the fruits develop sugar in the same way. So even if the fruit is picked before it is fully ripe, the green shoulders continue to develop sugar and flavor. Other tomatoes can be picked green and will develop nice color; but they won't develop any more sugar.

### **Mushroom Basket** (s-det.)

A rare Russian heirloom. Large 8-14 ounce pink tomatoes with ruffled edges, meaty interior and few seeds. Attractive hollowed out and used as a bowl for salads. Plants are 6-7' tall, need staking due to weight of fruits. Moderate yields. This variety was awarded *Most Beautiful Tomato* at Tomatofest 2016. 75 days. Original seed donated by Pat Moszeter.





### **Eva Purple Ball** (ind.)

A pink tomato from the Black Forest brought to the US by German immigrants in the early 1800s. Fruits are juicy with a mild flavor, neither too sweet or tart. The plants are very vigorous, with average yields of 5-6 ounce fruits. Somewhat disease resistant. 70 days.



### **Jubilee** (ind.)

First introduced in 1943 as an All-America Selection winner. The golden orange Jubilee has 6-10 ounce fruits with very meaty, thick-walled interiors, mild flavor and few seeds. High yields. 75 days



### **Large Red Oxheart** (ind.)

A Russian large red heart-shaped tomato, 8-16 ounce fruits. Plants are slow to germinate and grow. But once they get going they are very vigorous! Fruit continues to ripen very well even in cool fall weather. Tolerates light frost. The largest and latest tomato in our 2015 garden. Include one or two plants in your garden to extend the season. Heavy fall yields. 85 days.



### **Opalka** (ind.)

A rare Polish heirloom brought to NY by the Opalka family in the early 1900s. Average yields of 5" long horn-shaped, red paste tomatoes that look more like red peppers than tomatoes. Fruit is meaty, has few seeds, and is sweeter than most paste tomatoes. Good in sauces and sun dried. 80 days.



### **Solar Flair** (ind.)

Consistently a very beautiful and productive 5-8 ounce tomato. The outside has yellow, green, orange and red striations that look like the Aurora Borealis. Inside is solid red, juicy with a balance of sweet and slightly tart flavors. Has dense leaf canopy and sturdy branches. Good yields. 75 days.

## Did You Know?

Have you ever wondered why some seeds have poor germination rates? Why do you need to plant some seed heavily and then thin? Maybe it isn't you. The Federal Germination Standard for commercially grown seed is as low as 50% for some seed. Carrots, peppers, peas, and spinach are some examples of a 50% germination standard. This is because the seeds on some plants don't all reach maturity at the same time. In some varieties it is impossible to tell the mature seed from immature seed. Regardless of the standard, all seeds from the Heirloom Seed Library have a germination rate of 80% or more unless otherwise noted on the package.

## Turnips

*(Brassica rapa)* Turnips have been eaten by humans and animals for 10,000 years. They were domesticated independently in Asia, India, and Europe. Turnips can cross pollinate with broccoli raab, Chinese cabbages and mustards. Flowers cannot pollinate themselves and require insects for pollination, therefore it is necessary to grow at least 5 plants of the same variety to assure good pollination. An isolation distance of half a mile between varieties is necessary for seed purity. Turnips are a biennial that grow leaves and roots in the first year, then flowers and seeds the second. They must be exposed to at least 6 weeks of cold temps consistently 35-45° in order to set seed. Turnips are undemanding, growing in cool weather 45°-70° turning woody and bitter when weather is above 75°. Sow seeds in full sun or light shade in fertile soil 1/2" deep and 2" apart, then thin to 4' apart in all directions. They come in white, cream, yellow, and bi-color with purple or red tops and white at the bottom. Contrary to popular belief, turnips and rutabagas are different species and can not cross pollinate.

### **Purple Top**

Smooth round roots are sweet and tender. Turnips are often 3"-4" across and blushed with pink or purple above the soil and white below the soil line. Turnips can be eaten cooked or raw. Eat young leaves in to salads or as cooked greens. 50 days.



# Herbs

## Genovese Basil

(*Ocimum basilicum*)

A classic basil, mildly spicy with a sweet fragrance that is easily recognized by cooks and gardeners alike. To keep plants bushy and growing all season, harvest near the bottom of a stem by cutting immediately above a leaf node. Warm weather, full sun or dappled shade.



## Lemon Basil

(*Ocimum basilicum*)

An aromatic herb used mostly for its sweet lemony fragrance, especially good in potpourri. Also used for cooking in curry, chicken, and fish. To keep plants bushy and growing all season, harvest near the bottom of a stem by cutting immediately above a leaf node. Warm weather, full sun or dappled shade.



## Thai Basil

(*Ocimum basilicum*)

Native to Southeast Asia. Has a strong clove scent and anise flavor. Attractive purple stems and edible flowers. 1997 All American Selection winner. To keep plants bushy, and growing all season, harvest near the bottom of a stem, cutting immediately above a leaf node. Warm weather, full sun or dappled shade.



## Cilantro/Coriander

(*Coriandrum sativum*) Leaves are cilantro and seeds are coriander. Grows in cool weather. Best when planted in late summer and grown in fall. When grown in a sheltered area with heavy mulch, cilantro may grow all winter then bolt in spring. When the plant bolts, the leaves appear fern-like and develop an unpleasant soapy flavor.



## Bouquet Dill

(*Anethum graveolens*) Early to flower with large seed heads. Fronds are used by cooks as dill weed, seeds are culinary dill seed, fresh flowers are also edible. Attractive in ornamental beds. Dill is a vigorous re-seeder. Full sun.



## Lemon Balm

(*Melissa officinalis*) Native to the Europe and Asia. Leaves have a fresh citrus aroma. A non-invasive mint that spreads only by seeds. Cut back often to prevent flowering and to keep the plant bushy and healthy. Needs well drained soil, dappled or afternoon shade.



## Oregano—Greek

(*Origanum vulgare*) Native to the Mediterranean, prefers hot, dry climates. Grows well in pots. Harvest before bloom. Strong flavor is preferred by many cooks. Aggressive re-seeder. Perennial. Full sun.



## Oregano—Italian

(*Origanum vulgare*) Grows, looks, and tastes like Greek oregano but with a mild, subtle flavor.

## Italian Parsley

(*Petroselinum crispin*) A flat leaf parsley preferred for cooking. A biennial that grows leaves and roots the first year, flowers and seeds the second. Leaves, flowers and roots are edible. Bitter after bloom. Re-seeds easily in the second year. Full sun, tolerates part shade.



# Flowers



## Butterfly Flower

Unfortunately this plant is also called milkweed, but it's not a weed! Attractive foliage is 24" tall with bright orange blooms. Very attractive to butterflies. Drought tolerant, low water. Full sun.



## Cardoon

An attractive warm weather thistle like plant grows to 5' tall with large purple blooms. Start inside 6 weeks before transplanting. Plant outside 3-4 weeks after the last frost when soil and night temps are warm. Cardoon is edible but is more often grown as an ornamental. Full sun.



## Columbine—Rose

Full sun or part shade. Compact mounding foliage with blooms above foliage. Tolerates poor soil. Attracts hummingbirds. 12"-18" tall. Store seeds in refrigerator. Seeds need sunlight, do not cover with soil, takes up to 30 to sprout.



## Coneflower— Purple

Large full-headed flowers topped with golden-tipped cones. Slow growth the first year. Drought tolerant. Divide every 3-4 years. Hardy, full sun. 18"-24" tall.



## Coreopsis—Early Sunrise

Easy to grow. Compact mounding growth habit. Prefers unamended soil, heat, and full sun. Deadhead to keep plants blooming and reduce aggressive re-seeding. 12"-18" tall.



## Cosmos—Orange

Free flowering, open lacy foliage gives an airy touch to the garden from midsummer to frost. Good filler in the back of the garden or plant among zucchini and squash to bring in pollinators. Grows best in full sun. Tolerates poor soil, heat, and humidity. 30-36" tall.

## Hollyhock—Mars Magic

A biennial that grows a small rosette of leaves in the first year, sending up a 4'-6' flower stalk the second year. Blooms are single blossom, trumpet shaped, bright cherry red. Readily re-seeds.



## Hollyhock—Nigra

A biennial that grows a small rosette of leaves in the first year, sending up a 4'-6' flower stalk the second. Blooms are single blossom, trumpet shaped, dark maroon that is almost black. Readily re-seeds.



## Love in a Puff

Also known as Balloon Vine Plant. A warm weather tropical vine grows 3-6 feet. Has small white flowers followed by papery lantern like pods with small round seeds each having a white spot in the shape of a heart.



## Sunflower—Giant Yellow

Very large golden blooms with black centers, 12" across, on single stalk. Plants are 8' tall. Good to screen unattractive spots in your garden. Attractive to bees and butterflies. Sunflowers cross pollinate easily. These may not grow true to original parent plant.



## Sunflower—Lemon Queen

Large lemon yellow blooms with large chocolate centers 5"-6" across, on multi branched plants up to 6' tall. Attractive to bees and butterflies. Sunflowers cross pollinate easily. These may not grow true to original parent plant.



## Sunflower—Mixed

Several flowers on multi-branched stalk. Blooms are 6" across with yellow petals and black centers. Plants are 6'-8' tall. Attractive to bees and butterflies. Sunflowers cross pollinate easily. These may not be true to the original parent plant.



# Cover Crops

Cover crops are good for the soil. They loosen and lighten heavy soils; prevent erosion; increase water holding capacity; moderate soil temperature; and also bring in pollinators, predators, and decomposers. It requires discipline to give up 10-25% of your garden's growing space in order to grow cover crops; but taking care of the soil always pays off in the long run with higher yields and fewer pests and other garden problems.



## **Buckwheat** (*fagopyrum esculentum*)

A warm season grain crop often used to attract pollinators and beneficial insects. Rapid, dense growth chokes out weeds and shades soil. Buckwheat grows in a wide range of conditions, but prefers daytime temperatures around 60-75° and slightly cooler nights. Seeds will sprout in 3-5 days, blooms at 6 weeks, seeds begin to set at 8 weeks. Buckwheat is not invasive but does re-seed easily. Plants should be cut or pulled after blossom but before seed set. Very shallow root system. Does not grow well in heavy soils. Top growth may be used as mulch or turned into the soil. An excellent companion crop for cucurbitas to attract pollinators which may improve yields, or to attract predator insects for control of cabbage worms and aphids in brassicas and other crops susceptible to these pests. For a grain crop, sow 12-14 weeks before fall frost. Not cold hardy! Light frost will kill buckwheat. 12-18" tall.



## **Agricultural Mustard** (*Sinapis alba*)

Easy to grow. Attracts pollinators and beneficial insects. Rapid, dense growth chokes out weeds and shades soil. Compact mounding foliage with wispy upright stems that hold blooms above foliage. Sow seed over the surface of the soil and gently tamp in to make good contact with soil. Plant in full sun or part shade. Seeds sprout rapidly when temps are 65-85°. Tolerates poor soil. Somewhat drought tolerant. Will not tolerate waterlogged soil. Flowers appear in 4-6 weeks, seeds start to form at 8-10 weeks. Mustard re-seeds easily. Plants should be cut or pulled after blossom but before seed set. Top growth may be used as mulch or turned into the soil. An excellent cover crop for cucurbitas to attract pollinators which may improve yields, or when planted before root crops may have some mild beneficial effect on soil pests. Very shallow roots. 18-24" tall.



## **Sunn Hemp** (*Crotalaria juncea L.*)

A tall, fast growing tropical legume that requires very warm weather. Grown for its abundant biomass both above and below the ground. Used to add organic matter in soil, loosen heavy soil, and add nitrogen to the soil. Plant 1" deep in full sun 8 weeks before expected frost when soil temps are still warm 70° or warmer. When plants begin to flower, cut at the ground, before stalks become woody. Will not set seed outside the tropics. Makes excellent mulch and compost. Grows to 6'.



## **Winter Mix — Rye, Vetch, and Tiller Radish**

Rye grows large amounts of biomass both above and below the soil, breaking up heavy soil and providing carbon to the soil. Vetch is a legume that adds substantial nitrogen to the soil. Fodder radishes grow up to 3' deep and act as a bio-drill to break up heavy soil, scavenge nutrients from deep in the soil, provide soil cover to reduce winter erosion, and release nitrogen as the radishes decompose. Plant in late July to mid August, and leave all winter. Will winter kill during very cold winters. In mild winters, this crop will over winter and grow again in spring. You can cut through the crown of plants to kill or wait for hot summer weather to kill this cool weather cover crop. Even when the leaf canopy is less than 12" the roots mass will be substantial to a depth of 2 feet. A good cover crop for beginners.



# Air and Soil Temperature Chart

Vegetable Crop		Air Temperatures Degrees F		Soil Temperature Degrees F	
<i>Plant</i>	<i>Season</i>	<i>Range</i>	<i>Optimum</i>	<i>Optimum</i>	<i>Range</i>
Beet	Cool	40 - 75	60 - 65	85	
Beans	Warm	50 - 80	60 - 70	80	60 - 85
Broccoli	Cool	40 - 75	60 - 65		
Brussels Sprouts	Cool	40 - 75	60 - 65	75	40 - 80
Cabbage	Cool	40 - 75	60 - 65	85	45 - 95
Cabbage Chinese	Cool	45 - 75	60 - 65	80	45 - 85
Carrot	Cool	45 - 75	60 - 65	80	45 - 85
Cauliflower	Cool	45 - 75	60 - 65	80	45 - 85
Celeriac	Cool	45 - 75	60 - 65	70	60 - 70
Celery	Cool	45 - 75	60 - 65	70	60 - 70
Chard	Cool	40 - 75	60 - 65	85	50 - 85
Chive	Cool	45 - 85	55 - 75		
Collard	Cool	40 - 75	60 - 65	85	45 - 95
Corn	Warm	50 - 95	60 - 75	95	60 - 95
Cucumber	Warm	60 - 90	65 - 75	95	60 - 95
Eggplant	Hot	65 - 95	70 - 85	85	75 - 95
Endive	Cool	45 - 75	60 - 65	75	40 - 85
Fennel	Cool	45 - 75	60 - 65		
Garlic	Cool	45 - 85	55 - 75		
Kale	Cool	40 - 75	60 - 65	65	55 - 65
Kohlrabi	Cool	40 - 75	60 - 65	60	55 - 75
Leek	Cool	45 - 85	55 - 75		
Lettuce	Cool	45 - 75	60 - 65	75	40 - 85
Melons	Warm	60 - 90	65 - 75	90	75 - 95
Mustard	Cool	45 - 75	60 - 65		
Okra	Hot	65 - 95	70 - 85	95	70 - 95
Onion	Cool	45 - 85	55 - 75	75	50 - 95
Parsnip	Cool	40 - 75	60 - 65	65	50 - 70
Peas	Cool	45 - 75	60 - 65	75	40 - 75
Peppers Hot	Hot	65 - 95	70 - 85	85	60 - 95
Peppers Sweet	Hot	65 - 85	70 - 75	85	60 - 95
Potato	Cool	45 - 75	60 - 65		
Potato Sweet	Hot	65 - 95	70 - 85		
Pumpkin	Warm	50 - 90	65 - 75	95	70 - 95
Radish	Cool	40 - 75	60 - 65	85	45 - 90
Rutabaga	Cool	40 - 75	60 - 65	85	60 - 105
Salsify	Cool	45 - 85	55 - 75		
Shallot	Cool	45 - 85	55 - 75	75	50 - 95
Spinach	Cool	40 - 75	60 - 65	70	45 - 75
Squash (Summer & Winter)	Warm	50 - 90	65 - 75	95	70 - 95
Tomato	Hot	65 - 85	70 - 75	85	60 - 85
Turnip	Cool	40 - 75	60 - 65	85	60 - 105

## Helpful Tips:

Most vegetable seeds prefer soil temps around 72-77° for germination. The most notable exceptions are spinach and mache (corn salad) that like it closer to 55°, while most root crops, beets, carrots, parsnips, rutabagas and turnips aren't picky but prefer it warm, closer to 80-85°.

Plants that like warm soil but cool air temps prefer to be planted in the late summer when the soil is still warm but cool fall weather is approaching.

# Seed Saving Instructions

## Easy



### Leguminosae

#### Beans, Peas, Legumes

Legume flowers are perfect, self-pollinating blossoms, meaning that pollination takes place before the flower opens. For this reason, it is uncommon for legumes to cross pollinate naturally. However, if the seed is precious or rare you may want to take extra precaution to grow only one variety from each species to assure that there is no accidental cross pollination. Peas are (*P. sativum*) and common beans are (*P. Vulgaris*) but there are many other species of legumes. Legumes only cross pollinate within their species.

Always save seed from healthy plants that bear heavily. Pods should be allowed to dry on the vine. If possible, plants should be totally dry—stems, leaves, and pods. This will increase the germination rate. If pods are totally dry but plants are still growing, seeds will be viable but some seed may not be fully mature so germination rates will be lower. As the plant matures cull out any plants that do not look true to the parent plant. Plant size, leaf shape, flower color, and pod appearance should all look like the original parent plants.

To save seed from beans the dried pods need to be very dry, thin, and papery. Break the pod above the seed and let the seed fall into a container. Repeat for each seed. Pea pods are thicker, but when fully dry, usually the pods can be split open along the seam to release the seeds. This method may seem somewhat slow but when done this way, the seed will not need to be winnowed. All legumes are susceptible to bean weevils which can destroy stored seeds in a very short time. Weevils lay eggs inside the pods; when seed is dry the weevils hatch and eat the seed. Storing seed in a freezer for 7-10 days will kill the weevils. Seed must be totally dry to prevent damage from the freezing process. To check for dryness place a few seeds on a hard surface and hit with a hammer, if seeds shatter they are ready to be frozen; if seeds mash they need more drying time. Most legume seeds will maintain germination rates of 50% or higher for 4-5 years when stored in a cool, dark, dry place. If seed is stored in a freezer it will remain viable for 10 years. The standard for commercially sold seed is 70% germination rate.



### Compositae

#### Lettuce

Lettuce is an annual that sends up a seed stalk when the days grow long and warm weather arrives. Plants that bolt early may result in immature seed. Seed should only be saved from plants that are true to the parent type. Plants that are different in color, size, shape, or leaf style should not be allowed to go to seed. There are six types of lettuce; crisphead, butterhead, cos, leaf, stem, and Latin. All belong to *Lactuca sativa*. All lettuce are inbreeding plants with perfect blossoms. There is less than a 5% chance of naturally occurring cross pollination. If it is necessary to assure absolute purity, an isolation distance of 50 feet is recommended. Lettuce seeds ripen irregularly and are ready to harvest 12-24 days after flowering. To harvest, vigorously shake the seed head into a bag every day during that period. The loose seed will fall into the bottom of the bag. An alternate method is to wait until about 10 days after flower and then cut the whole plant. Place the seed head upside down into a bag. When the seed head is totally dry, vigorously shake while seed head is still in the bag. This will result in fairly clean seed that will need little or no winnowing. More seed can be obtained by rubbing the seed head between your palms. However, approximately half of the volume will be chaff. The seed and chaff are about the same size and weight, so much seed is lost in the winnowing process. To winnow, use a fine mesh strainer just large enough to let the seed pass through, then remove the chaff. Next use a fine mesh that is too small for the seed to pass through and gently rub with your fingers the seed will remain above the mesh and the fine chaff fall through. This is a time consuming process. Lettuce seed will remain viable for 3 years when stored in a cool, dry, dark place. The standard for commercially sold seed is 80% germination rate.



## Solanaceae Tomatoes, Peppers, Eggplant

The Solanaceae family includes 90 genera and 2000 species of plants that includes tomatoes, peppers, and eggplant. Most originated in Central and South America. Solanaceae are self-pollinating and are not particularly attractive to bees but many other insects are attracted to the blooms which results in occasional cross pollination. There is disagreement among plant breeders and seed savers as to how often this occurs, but is generally thought to be less than 5%. Seed must be harvest from fully ripe, very mature fruits.

### Tomatoes (*Lycopersicon lycopersicon*)


All tomatoes are inbreeding and have perfect, self-pollinating blooms, meaning pollination takes place before the blossom opens. Some agitation of the plant, usually by wind, will increase pollination rates. There is much disagreement among plant breeders and seed savers as to how often tomatoes naturally cross pollinate but it seems to happen in up to 5% of blossoms. If the seed is precious or rare you should grow only one variety or may isolate each variety by 50 feet. To maintain genetic variation seed should be saved from a **minimum** of 6 plants, more is better.

To save seed, wash very ripe and fully mature fruits then cut horizontally and squeeze seeds and surrounding gel into a bowl. Each seed is encased in a gel that contains chemicals to inhibit seed germination while still inside the fruit. To aid in separating the seed from the pulp add one cup of water for each cup of pulp. Set the bowl aside for 2-4 days out of direct sunlight. Do not leave seeds in water longer as they will start to germinate. Stir once a day. The seeds should start to drop to the bottom of the bowl and the pulp will float to the top. As the pulp ferments it may begin to smell bad and you may see mold on the pulp. This is normal. Seeds that continue to float are immature and will not germinate, so should not be saved. After the seeds have separated from the pulp, carefully pour off the pulp and most of the water leaving the seeds in the bottom of the container. Add water and rinse again until the water is clear of pulp. Pour seeds into a sieve and rinse well. Dry bottom of sieve and pour seeds into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Fully dry seed will break when folded. If seeds bend, additional drying time is needed. Seed stored in a cool, dry, dark place will remain viable for 5-10 years. When stored for 25 years germination rates often remain above 50%. The standard for commercially sold seed is 75% germination rate.

### Pepper (*Capsicum annum*)

There are four species of peppers but most sweet peppers and hot peppers belong to *C. annum*. Most peppers are green when immature and gradually change colors at maturity. Some agitation of the blossoms may increase pollination and fruit set. Although the blossoms are not particularly attractive to bees, many pepper varieties cross pollinate up to 80% of the time. The hot gene is dominant in peppers. If you are growing more than one variety of pepper an isolation distance of 500 feet is recommended. Plants can be grown in pots or dug at the end of the season and brought indoors where they will often continue to set fruit. To maintain genetic variation seed should be saved from a **minimum** of 6 plants, more is better.

Harvest pepper seeds when fruit is fully ripe, and very mature. Cut through the shoulder of the fruit and gently scrape the seeds from the fruit. Put seed in a small container with water. Mature seed will drop to the bottom and immature seed and pulp will float to the top. Pour off water and pulp, leaving mature seed. Pour into sieve and rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Fully dry seed will break when folded. If seeds bend, additional drying time is needed. Small peppers can be processed in a blender with water to separate the seed from the fruit. Then continue to process the same as for large peppers. Seed stored in a cool, dry, dark place will have 50% germination rates for 3 years. The standard for commercially sold seed is 55% germination rate.



## Solanaceae

### Tomatoes, Peppers, Eggplant

#### **Eggplant** (*Solanum melongena*)


Eggplant originated in India from very bitter small fruited spiny plants. Centuries of human selection have resulted in large fruits that often lack the bitterness of the original plants. Eggplant are annuals in northern climates because they will not tolerate frost. Plants can be grown in pots or dug at the end of the season and brought indoors where they will often continue to set fruit. Eggplant fruits can be green, white, yellow, tan, orange, red, pink, purple, or striped.

Eggplant are inbreeding with perfect flowers and are usually self-pollinating. Eggplant are not particularly attractive to bees but some cross pollination does occur. To prevent accidental cross pollination an isolation distance of 50 feet is recommended. To maintain genetic variation seed should be saved from a **minimum** of 6 plants, more is better.

To save seed, let fruits grow very far past edible stage, fully ripe but not moldy. All eggplant will change color, become dull, and have a hard shell. Mature seeds will be near the blossom end of the fruit. Seed should only be saved from the bottom 1/3 of the fruit. Seeds closer to the stem will be immature. To separate seed from the flesh use a box grater. Add the grated flesh and seed to a bowl of water and begin squeezing the pulp to release the seed. Mature seed will sink to the bottom and immature seed and pulp will rise to the top. Pour off water and pulp. Add water and repeat until all pulp is gone and water is clear. Pour seed into a sieve and rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Seed will maintain 50% germination for 7 years when stored in a cool, dry, dark location. The standard for commercially sold seed is 60% germination rate.

## Seed Saving Instructions

### Intermediate



## Cucurbitaceae

### Cucumbers, Melons, Squash

Cucurbitas can be found in every country and culture on the earth. They are some of the first plants used humans. Most cucurbitas are heat loving annuals and are not frost tolerant. All cucurbitas rely on insects for pollination. Each plant produces both male and female flowers that are very attractive to insects. Plants must have both male and female flowers in bloom at the same time for good pollination rates and high fruit set. Adding flowering plants near cucurbitas will increase visits by pollinators. There are many species of cucurbitas and all plants will readily cross pollinate within their own species. A minimum isolation distance of ½ mile is required to prevent unwanted crosses of cucurbitas within the same species. Cross pollination outside their species is unusual but does happen very rarely. There are many methods to assure that cross-pollination does not occur; but all are labor intensive. However, you can plant one variety from each species without concern about accidental cross pollination. Be sure to check with nearby neighbors so your cucurbitas do not cross with theirs. To assure genetic variation save seed from as many different plants of the same species as possible.

To save seed: The following is a guideline about species of cucurbitas. You may plant one variety from each species without worry of cross pollinating.

**To avoid cross pollination, you must identify the species of each squash, melon, and cucumber.**



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#### **Cucumbers** (*Cucumis sativus*)

Cucumbers should be very large well past the edible stage. The skin should be hard and change color. Save seed from half the cucumber near the blossom end. Seed near the stem are usually immature. Scrape seed and gel out of fruit into a bowl of water. Set aside in a very warm location (90°) out of direct sunlight to ferment for 12-24 hours. Stir twice a day. When fermentation is complete most seeds will drop to the bottom while the pulp, seed cases, and immature hollow seeds will float. Pour off water and pulp. Add water and repeat until all pulp is gone and water is clear. Pour seed into a sieve and rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Seed will remain viable for 10 years when stored in a cool, dark, dry location. The standard for commercially sold seed is 80% germination rate.

#### **Melons & Cucumber Melons** (*Cucumis melo*)

Many melons are frustrating to grow because they require insect pollination but only 10-20% of female flowers will set fruit. Planting with blooming flowers will encourage more visits by insects and may increase fruit set. Hand pollination doesn't usually increase yields. Seeds are mature when fruits are over ripe. Scoop seeds into a bowl of water and work between your fingers to release from the pulp. Pour off water, pulp and floating immature seeds. Add water and repeat until water is clear. Pour seed into a sieve and rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Seed will remain viable for 5 years when stored in a cool, dark, dry location. The standard for commercially sold seed is 70% germination rate. (Armenian cucumbers are *c. melo* and must be very large with hard skin. Only save seed from the bottom half of the fruit near the blossom end.)

#### **Watermelons** (*Citrullus lanatus*)

Watermelons are insect pollinated. They often set 2 flushes of blooms. Up to 90% of the first blooms will drop off the vine without setting fruit. The second flush of blooms set fruit about 50% of the time. Planting with blooming flowers will encourage more visits by insects and may increase fruit set. Seeds are mature when fruits are over ripe. Scoop seeds into a bowl of water and work between your fingers to release from the pulp. Pour off water, pulp and floating immature seeds. Add water and repeat until water is clear. Pour seed into a sieve. Use a small amount of dish soap to wash seed then rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Depending on variety, seed will remain viable for 6 years when stored in a cool, dark, dry location. The standard for commercially sold seed is 70% germination rate.

#### **Banana, Hubbard, Buttercup, Turban Squash** (*Cucurbita maxima*)

#### **Cushaw Squash** (*Cucurbita mixta*, new Latin designation: *Cucurbita argyrosperma*)

#### **Butternut and Cheese Squash** (*Cucurbita mochata*)

#### **Mini Pumpkins, Zucchini, and Acorn Squash** (*Cucurbita pepo*)

All squash are insect pollinated. Planting with blooming flowers will encourage more visits by insects and may increase fruit set. All winter squash must be fully ripe and then allowed to sit at room temperature for 1-2 additional months before saving seed. All zucchini and summer squash must be very over ripe. Fruits should be very large, with hard skin that has changed color. Fruits should be cut from the vine and allowed to sit at room temperature for 3-4 additional weeks. For long shaped squashes, like zucchini and banana squash, save only the half of the seeds that are closest to the blossom end. Seeds near the stem may be immature. In the squash cavity, work seeds between your fingers to release from the pulp. Mature seeds release from pulp easier than immature seeds. Scrape seeds into a bowl. Add water, pulp will rise. Pour off water and pulp. Add water and repeat until water is clear. There is no easy way to tell which seed are immature as all seeds will sink including the immature ones. (Mature seed are plump; immature seeds look flat.) Pour seed into a sieve and rinse well. Dry bottom of sieve and pour seed into a glass or plastic bowl or plate. Seed will stick to paper plates or paper towels. Put seed in a dry, warm place (not hot) out of direct sunlight. To aid in even drying and prevent clumping stir the seed twice a day until completely dry, about 1-2 weeks. Depending on variety, seed will remain viable for 6 years when stored in a cool, dark, dry location. The standard for commercially sold seed varies by variety but is between 60-80% germination rates.