



**SPOTLIGHT PLANTS OF THE
SEMESTER:
Spring 2020**

CSUN Seed Library Initiative



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Introduction

About This Booklet

Enclosed is a selection of eight plant species and their care instructions. All of the species included are either growing in a CSUN garden on campus or are native California species.

How does this relate to sustainability?

Today climate change is one of the greatest threats that humanity faces. The focus of the CSUN Seed Library Initiative is using seed saving as a tool to address that threat; it can be a solution to many of the *challenges presented by climate change.

It can help address food insecurity in communities all over the world. Saving seeds from a garden ensures that you will have something to grow for the next season and you don't have to buy new seeds.

Growing your own crops can also help preserve cultural identities. Food is a large part of a culture. Having more control over what is being grown and eaten season to season means that certain dishes that are culturally significant may be eaten more frequently.

The global food system has also presented many challenges for the world as well as for lesser developed nations. It has an enormous carbon footprint due to the transportation of food worldwide.

Encouraging seed saving in urban gardens not only sustains those urban green spaces but also helps with preserving biodiversity. And lastly, one of the greatest benefits is how seed saving changes our relationship with food and nature. It can help people build stronger connections with their food when they understand how it's grown and where it comes from.

*These challenges are discussed in greater detail in the accompanied presentation.

Amaranth

AMARANTHACEAE *Amaranthus cruentus*



1 Red Amaranth stalks. Image credit: Andrey Zharkikh via The Spruce

Amaranth is one of those plants with a rich cultural history. The Aztecs held this plant in reverence as it was used in their human sacrifice rituals. The Hopi people of Arizona also used red amaranth to make a dye for a dish called piki bread. Besides that, Amaranth is an extremely nutritious

grain. It is high in lysine and when consumed with other plants or legumes can create a complete protein.

Plant Care:

Seeds can be sowed directly in well-drained soil starting in March and up until June. Seeds may also be started indoors for about 6-8 weeks and can be transferred to soil.

Transplanted seedlings should be spaced 12-18 inches apart. Direct sowed seeds should be thinned to the same spacing. These plants prefer full sun. Mature plants can range from 4½ - 6 ft tall.

Harvest:

Seeds can be harvested over time by shaking the seeds free from the plant and into a bag. The entire plant can also be harvested at once. The seed heads can be cut from the stalks and laid out on a flat cotton surface and covered to dry out completely. Seeds should not be dried in the direct sun,

Broccoli

BRASSICACEAE *Brassica oleracea*



3 Young broccoli floret. Image credit: Mitch Diamond via Getty Images

The word broccoli comes from the Italian plural of broccolo which means the flowering crest of a cabbage. The broccoli as we know it today came to be by the breeding of cultivated crops in the northern Mediterranean

which started around the sixth century BC. Also, with strong ties in the Roman Empire. It is a rich source of Vitamin C, Vitamin K, Vitamin A, Calcium, Iron, fiber, etc. It is best served when eaten raw, steamed, or stir-fried.

Plant Care:

Broccoli grows very well in plenty of sunlight and during cool seasons. It should be planted in the early spring and late summer for ideal results. It is also best to allow the broccoli to mature before and after the weather temperatures get too hot.

Broccoli seeds are capable of germinating in soil temperatures as low as 40°F, but of course warmer soil is preferred as it will greatly speed up its development. For spring plantings, broccoli may be started indoors or outdoors a few weeks ahead of your last frost date. Start seeds indoors 6 - 8 weeks before your last frost date. Sow outdoors 2 to 3 weeks before your last frost date or as soon as the soil can be worked.



Harvest:

To harvest the plant for consumption, make sure to make slanted cuts at the base of the head. This makes sure that water will not pool on the stalk and cause rot. It is best to harvest in the morning while the heads are firm and tight. Side shoots can be allowed to mature and harvested in the later weeks. Make sure to harvest before the heads begin the flower, by then they will not taste very well.

To harvest the seeds, do not harvest the head, leave it to turn yellow. The center of the broccoli will bolt up and produce seed pods. Let them dry on the plant outside. Feel the seed pods for dryness when they start to turn more of a golden-brown color. They should not be brittle when touched. Then store the seeds in a sealed container in a cool, dry place until you are ready to use them. They can be stored for years.

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California Golden Currant

GROSSULARIACEAE *Ribes aureum*



‡ Golden Currant berries. Image credit: Robert Perry via [Inland Valley Garden Planner](#)

The name currant comes from the Greek phrase Zante Currant which translates to “raisins of Corinth” because they resembled grapes grown on the island of Corinth. While this particular species is native to California there are many different types of the currant species and these plants are widespread throughout the U.S. The fruits are edible and often eaten on their own or made into jams and jellies. They used to

be an important crop for Native American peoples living in the Great Plains.

Plant Care:

To start from seed, you must start with a process called stratification. Seeds must be placed between two layers of peat moss in a container with holes for 2-3 months in a 33-34°F refrigerator. Then, seeds can be transferred to a sterile seed-starting mix, they germinate best in full sunlight in temperatures from 65-75°F. From there the seedlings can be transferred to an appropriately sized pot and once it's big enough it can be transferred to soil.

The golden currant is a deciduous shrub. Cuttings and suckers can also be propagated. Mature plants may reach a height of 6-10 ft tall and 5-7 ft wide. Plants may only need to be watered 2x a month when they become

established as they are acclimated to the climate. In the fall prune suckers and crossing or weak branches. Plants prefer full sun in more moderated temperatures and partial shade in hotter and drier regions.

Harvest:

Fruits are usually ready for consumption in late spring and summer. Fruits should be plump and be bright yellow or orange in color. If you started from seed your plant will not produce fruits for the first 3 years. For seed saving purposes the wet process should be employed once the fruits are ripe. For more information on the process of seed saving please review our Seed Saving Methods pamphlet.



5 Golden currant seeds. Image credit: Steve Hurst via ARS Systematic Botany and Mycology Laboratory

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California Grape

VITACEAE *Vitis californica*



[6 Young California grape plant. Image credit: Brother Alfred Brousseau via St. Mary College of California](#)

The cultivation of the domesticated grape began thousands of years ago (some reports suggesting 6-8,000 years) in many regions such as the Near East, Asia, Egypt, Greece, etc. Yeast is one of the earliest domesticated microorganisms (naturally occurring on the skins of grapes) and led to the discovery

of alcoholic drinks. In North America, native grapes belong to various species of the genus *Vitis* and proliferate in the wild across the continent. And they were also part of multiple Native Americans diets. A majority of grapes grown world-wide (72 - 82 %) are used to make wine, while the rest are eaten fresh as grapes or raisins. They are a good source of vitamin K, copper, B vitamins, promote heart health, are high in antioxidants, etc.

Plant Care:

To start from seeds place them inside of a container with a little damp peat moss. Around one tablespoon of peat moss should be enough for up to 50 seeds. After that, place a top on the container and leave it in a 35-40°F refrigerator for around three months. This process is called stratification. After that time, plant the seeds at a depth of about three times their length in a flat, damp, and sterile seed mix. Space the seeds 1 ½ inches apart from each other. Long light exposure is required for up to around 16 hours because the seeds germinate best in these conditions. Make sure the seed mix remains damp. After about two months seedlings can be transferred to soil or an appropriately sized pot.



It is generally agreed to plant your grape vines in early spring. Grape vines should be soaked in water for 3 to 6 hours before planting. Cut off any broken roots before sowing. Vines should be placed 6-8 ft. apart. During the first year, it is important to water about 1 inch a week. After the vines are established continue to water regularly but be careful to not over-water.

Fertilizers (depending on your variety) should only be used if the vines appear to need them; generally, you should only need a small amount and it should be applied one foot away from the vine's base. Soil should be kept at an optimal pH of 5.0-7.0.

Harvest:

Grape vines generally do not produce fruit until their third year. Once grapes are picked, they generally don't get any sweeter. Taste them first before harvesting, they're generally ripe around late summer. Employ the wet process from the seed saving pamphlet for seed saving.

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Cauliflower

BRASSICACEAE *Brassica oleracea*



7 Cauliflower head. Image credit: Louise LeGresley via Getty Images

Cauliflower and broccoli actually belong to the same genus and species. This is because cauliflower is a product of the selective breeding of broccoli. Broccoli was a revered crop and often grown in royal gardens. Over many years' broccoli was grown selectively to produce the

most tender shoots. After a while the shoots turned white in color and thus was the beginning of cauliflower. Today cauliflower comes in other colors, like orange and purple.

Plant Care:

The best time to grow cauliflower is in fall during the cold season, they can be planted from August 1st – May 15th. To start from seed, plant them ¼ - ½ inch deep in the soil. The soil has to be kept moist and warm, preferably a temperature of 65-70°F. The plants should be 18- 24 inches apart. When growing cauliflower, a site needs to be chosen where there is at least 6 hours of full sun. Cauliflower is best started from transplants for both spring and fall. The transplant will not grow if planted 2 - 3 weeks before the average frost-free date in the spring.

Harvest:

This plant is ready to harvest after about 50 - 100 days and when the head of the cauliflower is 6-8 inches wide. The best time to harvest is in the morning when the heads are white, firm, and compact. When cutting



it off the plant, be sure to make slanted cuts and to leave a few leaves around the head to keep the plant protected.

Cauliflower is a biennial. Since Cauliflower is a biennial, seeds will not be produced until their second season when it flowers. After the plant flowers in the second year of growth, the seed pods will mature and become dry and brown. Brassica crops have a short period where the seeds can be harvested because they could shatter, and birds will start to eat them. Branches of mature fruits can be threshed by rubbing the pods between one's hands or by hitting the brittle pods against any surface that will cause fruits to break open. If the pods are dry, they will release their seeds easily.

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Fava Beans

LEGUMINOSAE *Vicia faba*



[8 Flowers on a young fava bean plant. Image credit: Marie Iannotti via The Spruce](#)

The fava bean has a long tradition of cultivation, having played a role in eastern Mediterranean diet since 6000 BCE or even earlier. They are naturally indigenous to the Mediterranean and Southwest Asia. They are often grown as a cover crop to prevent erosion and can

withstand harsh and cold climates. They contain lots of fiber, vitamin K, vitamin B6, zinc, copper, iron, magnesium, and promote healthy red blood cells.

Plant Care:

The beans are a cool weather plant, requiring full sunlight to partial shade. It is best to grow them in September for a late fall harvest or even in November for spring picking.

Plants are very hardy and can grow in 21°F degree weather. In some regions they may be sowed in January for summer harvest. Seeds should be sown 1-2 inches deep in the soil and spaced about 6-8 inches apart. They grow as rigid, upright plants and can reach heights ranging from 2 - 5 feet, they often require staking as they mature.

Harvest:

To harvest, pick early while the pods are skinny, large, and bright. At this stage the beans can be eaten whole. If you wait until the pods are 6 – 8

inches long (about 75-80 days after planting) you can harvest good sized beans, though at this point the pod is no longer edible. When the pods have been discarded the seeds need to be processed. At this point the outer skin on the bean is not edible, they can easily be removed after boiling for a minute and cooling in an ice bath.

To save seed, the entire pod must completely dry out. Plants can be left in the ground until then or the whole plant can be harvested and hung upside down in a dry and airy place. Once the pods and seeds are completely dry the seeds can be removed from the pods and stored. Fava beans are not the easiest to thresh, hand shelling is not recommended for large amounts of pods. After processing, they can be stored in a cool dry place for around 10 to 12 months.



9 Fava bean seed. Image credit: Tracey Slotta via ARS Systematic Botany and Mycology Laboratory.

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Jalapeño

SOLANACEAE *Capsicum annuum*



10 Ripening jalapeños. Image credit: GomezDavid via Getty Images

Peppers have been cultivated in Central America since before Columbus. There are many different types of peppers with different qualities that belong to the same genus and species. For example, cayenne, jalapeno and bell peppers are all *Capsicum annuum*. They can also come in

a wide range of colors: green, red, yellow, orange, purple and black. In most parts of the world green peppers are not eaten because they are considered unripe. However, American cuisine is often notable for its incorporation of green peppers.

Plant Care:

The best time to plant Jalapeño seeds is from January - March or 6 weeks before the last expected frost. Seeds can be directly sown in soil at a depth of $\frac{1}{4}$ of an inch deep. Seeds should be spaced 14-16 inches apart if planted in the same plot. Plant prefer to be in full sunlight. If the jalapeño is ready to harvest and it is not harvested from the plant it can cause the other peppers to slow down its growth.

Harvest:

Jalapeños are ready to harvest in 3-4 months. They will be 3-6 inches long, have green and glossy skin, and be very firm to the touch. Jalapeños can be deep green or red in color when they are more mature.

The seeds can be harvested from a jalapeño whether the jalapeño was just harvested or dried up. Jalapeño seeds can be harvested using the dry or wet method, though the dry method is easier to do. First, completely dry



the jalapeño. You can do this by harvesting the entire plant when the fruit is completely mature and hanging them upside down inside an airy room. Then cut it open and remove the seeds from the white membrane and let dry for 2 - 3 days. The wet method takes a little more time because you have to remove the immature and nonviable seeds. Remove the seeds from the pepper and place them in a bowl of water, the bad seeds will float up and the good seeds will sink to the bottom. Spread the good seeds out on a newspaper for a couple of days to dry.

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Tomato

SOLANACEAE *Lycopersicon lycopersicum*



11 Variety of tomatoes. Image credit: Marie Iannotti via The Spruce

The tomato was actually cultivated from wild perennials and are indigenous to Central and South America. Tomatoes did not reach Europe until they were brought there by Columbus. In Europe, at first it was believed that tomatoes were deadly poisonous. Tomatoes actually come in far more colors than red, especially heirloom tomatoes. They can be red, white,

yellow, green, purple, brown and black in color. Some tomato varieties are even striped.

Plant Care:

Tomatoes can either grow outside or indoors. Tomato plants are often started indoor, when they are 4-6 weeks they are transplanted before the last spring frost and the soil starts to warm. Seeds need to be planted $\frac{1}{4}$ of an inch deep in the soil. During germination the temperature needs to be at least 45°F and the soil needs to be at a minimum of 50°F. Tomatoes need space to grow so they need to be 24 - 48 inches apart.

Harvest:

To harvest, tomatoes should be firm to the touch. The tomato should be harvested when it is a mature green and it will ripen on the vine. When picked at that time it prevents splitting or bruising. It usually takes 7 - 8 weeks for the tomato to ripen.

Seeds need to mature in order to be saved, seeds are fully mature when the tomato is ready to eat. Tomato seeds can be saved in two ways: left out to



dry on a napkin or fermentation. To save seeds via fermentation it is necessary to separate the seeds from the pulp. The separated seeds should be placed into a container and left to sit for at least one day in a warm spot that is 80 - 90°F in direct sunlight so the pulp can ferment. This process allows the tomato seeds to separate from the gelatinous overlay covering them. Seeds that are feasible will sink to the bottom, and the dead seeds will float. A small amount of mold will form this should be poured off along with the dead seeds and the liquid. Thoroughly rinse the viable sunken seeds in running water. Once the seeds are clean, they can be placed on a napkin, screen, or coffee filter to dry for 5-7 days and can be promptly stored.

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Additional Resources

This booklet was intended to provide an introduction to the plant species contained. However, there is a wide range of resources readily available for further study and additional information.

Local Libraries:

There are countless books published that outline how to care for plants, when to harvest, how to save seed and etc. You may even be able to track down books containing information about one particular species. Some libraries have expanded their collections and now have online documents. At certain locations, librarians are also available via online messaging if you require any assistance in searching for specific information.

[CSUN Oviatt Library](#)

[Los Angeles County Library](#)

Online Resources:

Much of the same information that can be accessed in libraries can also be accessed via the internet through search engines. These are websites we really like.

[USDA Fact Sheets & Plant Guide](#)

[Calscape Plants Native to California](#)

[Gardening Know How](#)

[The Old Farmer's Almanac](#)

Seed Packets:

If you've ever purchased a packet of seeds, you'll notice there are generally instructions printed on them. This information is good for growing plants in the earlier stages but may be inadequate for future maintenance. Seed packets can be purchased at most hardware stores and online stores. Both generally carry additional resources and information.

[Seed Savers Exchange](#)

[Hudson Valley Seed Co.](#)



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