## **Preparation and Layout for Planting Vegetable, Flower and Herb Gardens**

**Solarize (May- July)**

Solarize the soil to eliminate pests and disease. June, July, and August are the best months to solarize as temperatures are highest. Solarize for at least 6 wks.

To prepare your site for solarization, clear the area of weeds and debris and incorporate any soil amendments.  Rake the area smooth and make "crowns" in the center so rainwater won't collect on the plastic and cool the soil.

Moist soil is best for solarization as moisture helps to conduct heat. Use clear plastic at least 1.5 millimeters thick to prevent the plastic from hardening and breaking down.

Stretch the plastic tightly over the prepared area and seal the edges by completely burying them in the soil. A reduction in weeds and soil pests should occur for the next three to four months.

**Soil test (Aug)**

Test the ph of the soil. Obtain a soil test form and soil sample bag from the Charlotte County Extension Center. Identify how the soil will be used i.e. vegetable garden and the soil test results will include amendment suggestions for the intended use. The UF/IFAS Soil Testing Lab in Gainesville will email/mail results in 3 to 6 days.

**Augment Soil (Aug)**

Vegetables prefer slightly acidic soil with a ph of 5.8 to 6.3 for Florida’s sandy soil. Acidic soil can be amended using lime and takes 2 to 3 months prior to planting to elevate the ph. It is difficult to lower the ph for a soil that is too alkaline.

Add compost to provide micronutrients, improve moisture retention, and deter nematodes. Compost is available at Green Planet on Rte 17 and/or make your own using the compost bin and tumbler.

**Fertilize (Sept)**

Broadcast fertilizer over the entire garden plot just before planting. A complete fertilizer works for most vegetables. This includes 8-8-8; 10-10-10; and 15-15-15. Follow the guidelines from the soil test. If the phosphorus is adequate, don’t add additional phosphorus found in a complete fertilizer as excess phosphorus is a pollutant in surface water.

During the growing season, 2 or 3 light applications of fertilizer can be applied as needed. Apply the fertilizer just beyond the outside leaves. Leafy vegetables such as lettuce, kale, and collards benefit from side dressings of nitrogen-containing fertilizer such as ammonium nitrate. Tuber and root crops, like carrots and potatoes, respond to potassium fertilizer such as muriate of potash.

**Propagate (Sept)**

Start seedlings for selected vegetables, flowers and herbs. For vegetable seedlings, refer to **Table 2 Planting Guide for Florida Vegetables**. The column identifying transplant ability shows which seeds need to be planted directly in the garden (III) vs started in seedling pots. Suggested seedlings include dill, cilantro, thyme, ageratum, basil, sage, zinnia, snapdragon, salvia, and ageratum.

**Planting (Sept/Oct)**

Plant according to the 3 growing seasons.

* Fall – mid Sept to early Nov
* Winter – Nov to Jan
* Spring- Late Jan to mid March

Refer to **Table 1 Plants for the Fall Growing Season** for 2 garden design layouts. The narrow beds (32 in. by 30 ft) limit how many varieties can be grown. Using both Garden A and Garden B designs provide consistency across the student teams while increasing the varieties that are grown. There is a mix of vegetables, flowers and herbs. Vegetables benefit from the flowers as they attract bees and other pollinators. Refer to this link for guidelines when selecting flowers <https://www.treehugger.com/lawn-garden/why-you-should-plant-vegetables-and-flowers-together.html>.

A helpful reference on vegetable gardening can be found on the IFAS site <http://edis.ifas.ufl.edu/vh021>.

**Table 1 Plants for the Fall Growing Season (mid Sept to early Nov)**

**Garden A Layout**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **carrot** | **kale** | **Summer squash** | **tomato** | **pepper** | **radish** | **Basil** | **Sage** | **Thyme** | **Zinnia** | **Celosia** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Allocated Space (ft)** | **Spacing between Plant (in)** | **Plants per Row** | **# Rows** | **Total Plants** |
| **vegetable** |  |  |  |  |  |
| carrot | 1.5 | 1 to 3 | 10 | 4 | 40 |
| kale | 3 | 8 to 12 | 3 | 3 | 9 |
| squash summer | 3 | 12 to 24 | 2 | 3 | 6 |
| tomato | 9 | 18 to 32 | 2 | 4 | 8 |
| pepper | 3 | 9 to 15 | 3 | 3 | 9 |
| radish | .5 | 1 | 15 | 1 | 30 |
| **herb** |  |  |  |  |  |
| basil | 2 | 4 to 12 | 6 | 2 | 12 |
| sage | 2 | 18 | 2 | 2 | 4 |
| thyme | 1 | 12 | 3 | 1 | 3 |
| **flower** |  |  |  |  |  |
| zinnia | 3 | 8 to 12 | 4 | 3 | 12 |
| celosia | 2 | 10 | 3 | 2 | 6 |
|  |  |  |  |  |  |

**Garden B Layout**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **lettuce** | **Pole beans** | **eggplant** | arugula | **Onion green** | **Winter squash** | **cilantro** | **dill** | garlic | ageratum | salvia | **strawberry** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Allocated Space (ft)** | **Spacing between Plant (in)** | **Plants per Row** | **# Rows** | **Total Plants** |
| **vegetable** |  |  |  |  |  |
| lettuce | 3 | 8 to 12 | 4 | 3 | 12 |
| beans (pole) | 6 | 3 to 5 | 5 | 2 | 10 |
| eggplant | 6 | 18 to 40 | 2 | 3 | 6 |
| arugula | 1 | 3 to 4 | 8 | 1 | 8 |
| onion (green) | 1 | 2 | 15 | 1 | 15 |
| squash (winter) | 3 | 36 to 60 | 1 | 1 | 1 |
| **herb** |  |  |  |  |  |
| Cilantro | 2 | 8 | 4 | 2 | 8 |
| Dill | 2 | 12 | 3 | 2 | 6 |
| garlic | 1 | 4 to 6 | 8 | 2 | 16 |
| **flower** |  |  |  |  |  |
| ageratum | 1 | 10 to 12 | 3 | 1 | 3 |
| salvia | 1 | 8 to 12 | 4 | 2 | 8 |
| **fruit** |  |  |  |  |  |
| strawberry | 3 | 10 to 18 | 3 | 6 | 18 |

**Table 2  Planting Guide for Florida Vegetables**

|  | **Planting Dates** | **Yield per 10 ft (pounds)** | **Plants per 10 ft 2** | **Days to Harvest 3** | **Plant spacing inch** | **Rows spacing4** | **Seed depth (inches)** | **Transplant Ability 5** | **Plant Family 6** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arugula | Oct–Mar | 2.5 | 30–40 | 35–60 | 3–4 | 10 | ¼ | I | (Cabbage) Brassicaceae |
| Beans, bush | Sept–Apr | 4.5 | 30–60 | 45–60 | 2–4 | 18 | 1–1½ | III | (Bean) Fabaceae |
| Beans, pole | Sept–Apr | 8 | 24–40 | 50–70 | 3–5 | 36 | 1–1½ | III | (Bean) Fabaceae |
| Beans, lima | Sept–Apr | 5 | 20–40 | 60–80 | 3–6 | 18 | 1–1½ | III | (Bean) Fabaceae |
| Beets | Oct–Jan | 7.5 | 30–60 | 50–70 | 2–4 | 12 | ½ –1 | I | (Beet) Chenopodiaceae |
| Broccoli | Oct–Jan | 5 | 8–12 | 75–90 (50–70) | 10–15 | 24 | ¼– ½ | I | (Cabbage) Brassicaceae |
| Brussels Sprouts | Oct–Jan | 10 | 5–7 | 90–120 (70–90) | 18–24 | 24 | ¼–½ | I | (Cabbage) Brassicaceae |
| Cabbage | Sept–Jan | 12 | 8–13 | 85–110 (70–90) | 9–16 | 24 | ¼– ½ | I | (Cabbage) Brassicaceae |
| Cantaloupes | Dec–Mar | 15 | 4–6 | 85–110 (70–90) | 20–36 | 60 | ½–1 | III | (Squash) Cucurbitaccae |
| Carrots | Sept–Mar | 10 | 40–120 | 70–120 | 1–3 | 10 | ¼ | II | (Carrot) Apiaceae |
| Cauliflower | Sept–Jan | 8 | 7–10 | 75–90 (50–70) | 12–18 | 24 | ¼– ½ | I | (Cabbage) Brassicaceae |
| Celery | Oct–Mar | 15 | 10–20 | 75–90 | 6–12 | 18 | On surface | II | (Carrot) Apiaceae |
| Chinese cabbage | Sept–Apr | 10 | 7–9 | 70–90 (60–70) | 14–18 | 14 | ¼ – ½ | I | (Cabbage) Brassicaceae |
| Collards | Sept–Jan | 15 | 5–10 | 70–90 (50–70) | 12–24 | 24 | ¼– ½ | I | (Cabbage) Brassicaceae |
| Corn, sweet | Oct–Mar | 12 | 15–20 | 65–90 | 6–8 | 28 | 1–1½ | III | (Grass) Poaceae |
| Cucumbers | Sep–Feb | 10 | 10–20 | 40–65 | 6–12 | 48 | ½–¾ | III | (Squash) Cucurbitaceae |
| Eggplant | Aug–Feb | 20 | 3–7 | 90–115 (70–90) | 18–40 | 36 | ½–¾ | I | (Tomato) Solanaceae |
| Endive/ Escarole | Sept–Mar | 7.5 | 8–9 | 60–80 | 14–16 | 18 | ¼ | I | (Aster) Asteraceae |
| Kale | Sept–Jan | 7.5 | 9–10 | 50–70 | 8–12 | 18– | ¼– ½ | I | (Cabbage) Brassicaceae |
| Kohlrabi | Oct–Feb | 10 | 24–40 | 70–80 (50–55) | 3–5 | 24 | ½ | I | (Cabbage) Brassicaceae |
| Lettuce | Sept–Feb | 7.5 | 10–15 | 60–80 | 8–12 | 18 | ¼ | I | (Aster) Asteraceae |
| Mustard | Sept–Jan | 10 | 12–24 | 40–50 | 5–10 | 12 | ¼– ½ | II | (Cabbage) Brassicaceae |
| Okra | Jan–Mar Aug–Oct | 7 | 12–30 | 60–70 | 4–10 | 36 | ½–1 | III | (Hibiscus) Malvaceae |
| Onions, Bulbing | Oct | 10 | 30 | 100–130 | 4–6 | 14 | ¼–½ | III | (Lily) Liliaceae |
| Onions, Bunching (Green and Shallots) | Sept–Mar | 10 | 30 | 50–75 (green) 75–100 (shallots) | 2 (green) 6–8 (shallots) | 14 | ¼–½ | III | (Lily) Liliaceae |
| Peas, Snow or English | Nov–Feb | 4 | 20–60 | 60–80 | 2–6 | 12 | 1–1½ | III | (Bean) Fabaceae |
| Peas, southern | Sept–Apr | 8 | 20–60 | 75–90 | 2–6 | 12 | 1–1½ | III | (Bean) Fabaceae |
| Peppers | Aug–Feb | 5 | 8–13 | 90–100 (65–75) | 9–15 | 15 | ¼–½ | I | (Tomato) Solanaceae |
| Potatoes, Irish | Oct–Jan | 15 | 12–24 | 85–110 | 5–10 | 36–42 | 3–4 (seed pieces) | II | (Tomato) Solanaceae |
| Potatoes, sweet | Dec–Sept | 30 | 10–12 | 85–130 | 10–12 | 36 | — | I | (Morning Glory) Convolvulaceae |
| Pumpkin | Early Aug | 30 | 2–4 | 80–100 (70–90) | 36–60 | 60 | 1½ –2 | III | (Squash) Cucurbitaceae |
| Radish | Oct–Mar | 4 | 120 | 20–30 | 1 | 6 | ¼ | III | (Cabbage) Brassicaceae |
| Spinach | Oct–Feb | 4 | 20–60 | 45–60 | 2–6 | 12 | ½ | II | (Beet) Chenopodiaceae |
| Squash, Summer | Aug–Mar | 15 | 5–10 | 40–50 | 12–24 | 36 | 1–1½ | III | (Squash) Cucurbitaceae |
| Squash, Winter | Aug–Mar | 30 | 2–4 | 85–120 | 36–60 | 60 | 1½ –2 | III | (Squash) Cucurbitaceae |
| Strawberry | Oct 1– Dec 1 | 9–12 | 8–10 | (30–60) | 12–16 | 12 | – – – | I | (Rose) Rosaceae |
| Swiss Chard | Sept–Mar | 8–12 | 10–20 | 45–60 | 6–12 | 18 | ¼–½ | I | (Beet) Chenopodiaceae |
| Tomatoes (supported) | Aug–Feb | 2 | 4–7 | 90–110 (70–90) | 18–32 | 48 | ¼– ½ | I | (Tomato) Solanaceae |
| Turnips | Sept–Jan | 15 | 20–60 | 40–60 | 2–6 | 12 | ¼– ½ | III | (Cabbage) Brassicaceae |
| Watermelon | Dec–Mar | 40 | 3–5 | 80–100 (60–90) | 24–48 | 60 | 1½ –2 | III | (Squash) Cucurbitaceae |

**Table 3   Suggested varieties for Florida gardens**

| **CROP** | **RECOMMENDED VARIETIES1** | **NOTES/REMARKS** |
| --- | --- | --- |
| **Arugula** | Speedy, Astro | Plant at 2–3 week intervals from fall through spring for a continual harvest. The dark green, spicy leaves can be steamed, pureed, or used raw in salads and sandwiches. Harvest individual leaves as needed or the entire plant when it is 8–10 inches tall. High temperatures cause arugula to flower and become bitter. |
| **Beans, pole** | McCaslan, Kentucky Wonder, Blue Lake | Fertilize at 1/2 the rate used for other vegetables; too much nitrogen limits production. Support vines. May be grown with corn for vine support. Plant rust-resistant varieties. |
| **Carrots** | Imperator, Nantes, Danvers, Chantenay | Grow carrots on a raised bed for best results. Sow seeds shallowly. They are slow to germinate. Keep soil consistently moist throughout the germination and growing periods. Thin seedlings to recommended spacing when they are an inch tall. Excellent source of vitamin A |
| **Eggplant** | Black Beauty, Dusky, Long, Ichiban, Cloud Nine (white) | Requires warm soil and weather. Harvest into summer. May need staking. Bitter fruit caused by high temperatures or drought conditions. |
| **Kale** | Vates Dwarf Blue Curled, Tuscan (lacinato), Winterbor, Redbor | Good source of greens late fall through early spring in north and central Florida. Harvest outer leaves, but no more than 1/3 of the plant at one time. Ornamental types are edible, but not very tasty. |
| **Lettuce** | **Crisphead**: Great Lakes  **Butterhead**: Ermosa, Bibb, TomThumb, Buttercrunch  **Loose** **Leaf**: Simpson types, Salad Bowl, Red Sails, New Red Fire**,** Oak Leaf, Salad Bowl, Royal Oak  **Romaine**: Parris Island Cos, Outredgeous | Leaf types grows well in Florida; grow crisphead type only in coolest months. Damaged by freezing temperatures. Warm temperatures cause bitterness. Sow seeds very shallow as they need light to germinate. Intercrop lettuce with long-season and/or taller vegetables. |
| **Onions** | **Green**: Evergreen Bunching, White Lisbon Bunching | Depending on type, onions may be grown from seed, sets, transplants, or division. Green/bunching onions may be grown fall through spring. Plant close and harvest (thin) as needed. Insert sets upright for straight stems. Divide and reset multiplier types every year. |
| **Peppers** | **Sweet**:California Wonder, Red Knight, Big Bertha, Sweet Banana, Giant Marconi, Cubanelle  **Hot**:Early Jalapeno, Jalapeno M; Cherry Bomb, Hungarian Hot Wax, Big Chile II, Mariachi, Numex, Ancho, Thai, Anaheim Chile, Long Cayenne, Habanero, Caribbean Red Habanero | Transplants often more successful than seeds. Mulching especially beneficial. Will often produce into summer. Pepper “heat” depends on variety and is measured in Scoville units. |
| **Radish** | Cherry Belle, White Icicle, Sparkler, Champion, Daikon | Easy and fast-growing; thin early and inter-crop with slow-growing vegetables to save space. Plant every two weeks during the growing season for a continuous supply. Spicy, bitter flavor caused by hot weather and over-maturity. Winter/Oriental radishes (such as Daikon) also grow well in Florida. |
| **Squash** | **Summer**: Early Prolific Straightneck, Summer Crookneck, Early White Scallop, chayote  **Zucchini**: Cocozelle, Spineless Beauty, Black Beauty, Chayote, Calabaza  **Winter**: spaghetti, Table King, Table Queen & Table Ace (Acorn), Waltham, Early Butternut (butternut) | Summer squash and zucchini are usually bush types; winter squash have a spreading, vining habit. Calabaza is similar, but is a heat-and disease-resistant hard-shelled squash, similar to a butternut or acorn in taste. Chayote is a vine that needs support. All cucurbits have male and and female flowers separated on the plant and pollination by insects is required for fruit set. Crossing between types occurs, but is only evident when seeds are saved. Leaf and fruit diseases are fairly common. Winter types store well. |
| **Strawberry** | Chandler, Oso Grande, Sweet Charlie, Selva, Camarosa, Festival | Grown as an annual crop in Florida starting with disease-free plants in the fall. Plant only varieties adapted to Florida. |
| **Tomatoes** | **Large Fruit:** Celebrity, Heat Wave II, Better Boy, Beefmaster, BHN444-Southern Star\*, Amelia\*, BHN 640\*, Tasti-Lee™  **Small Fruit**: Sweet 100, Juliet, Red Grape, Sun Gold, Sugar Snack, Sweet Baby Girl  **Heirloom**: Green Zebra, Cherokee Purple, Eva Purple Ball, Brandywine, Mortgage Lifter, Delicious | Staking/supporting and mulching are beneficial. Flowers self-pollinate. Blossom drop is usually due to too high or too low temperatures and/or excessive nitrogen fertilization. Serious problems include blossom-end rot, wilts, whitefly, and leafminers. Cherry types are heat resistant  \*Resistant to TSWV (Tomato Spotted Wilt Virus) |