The information offered here is to help gardeners grow vegetables successfully. It focuses on common questions asked as well as conditions, pests, and diseases that occur in St. Tammany Parish home gardens. Every attempt has been made to ensure the accuracy of the information, but references should always be checked, and LSU AgCenter personnel contacted if there are questions.

Cucurbits

By Jerry Ballanco

Photo by Jerry Ballanco.

"It ain't what you don't know that causes trouble...it's what you know that ain't so."

Introduction

What wonderful vegetables are in this group AND most are pretty easy to grow. An added bonus is that they grow spring, summer, and fall. Cucumbers, squash, luffa, and cantaloupe can be planted any time from March to August (July and August plantings tend to struggle...badly.)

Based on a recent survey, in order of popularity, St Tammany gardeners plant cucumbers, summer squash, cantaloupe, winter squash, watermelon, and mirliton. Fewer grow pumpkins, spaghetti squash, cucuzza, gourds, and luffa. All cucurbits have similar growth and nutrition preferences and are bothered by many of the same pests and diseases. Exceptions are usually relative resistance or relative sensitivity to a pest or disease. In the following pages the words "larva," "caterpillar", and "worm" are used interchangeably to indicate the larval form of a lepidopteran.

This document will start with common needs and traits. Any species-specific needs, strengths, or problems are addressed at the end of the common traits or in the section that is specific to each group. For more information, refer to the provided links, the LSU Home Vegetable Gardening guide, and the many books written specifically for Louisiana gardeners.

Contents

Growing Cucurbits

Bush cucumber in container. Photo by Jerry Ballanco.

Patty pan squash. Photo by Jerry Ballanco.

All cucurbits may be grown in containers as well as garden soil, but the ground-gobbling sprawl of the vines requires forethought about placement. Cucumbers, cantaloupe, mirliton, and ever popular luffa are easier to manage and keep healthy when trained to grow on a trellis. Some varieties are specifically recommended for containers. These are BIG plants, give them room.

Growth and production may be lower in the heat of the summer. Temperatures above 90 and high humidity may make pollination and fruiting less reliable than in the cooler spring or fall.

Cucurbits have male and female flowers. Pollination of a female flower by pollen from a male flower is necessary for fruit to form (a good reason to welcome bees to your garden). A male blossom is typically at the end of a stalk. A female blossom has a stalk then a miniature fruit at the base of the blossom. Often a plant will produce male flowers first then follow with a mixture of male and female blossoms. Some cucurbits are bred to have a majority of female blossoms. The different varieties of the same vegetable may cross pollinate so saving seeds is a little tricky. Pests are less discriminating and will readily switch the species on which they feed.

Multiple female blossoms on yellow squash plant. Note the miniature fruit at the base of the flower. Photo by Jerry Ballanco.

https://plantvillage.psu.edu/topics/squash/infos (pretty comprehensive article on squash including pests and diseases with good photos)

Getting Them Started

Cucurbits need warm soil to germinate and thrive. Soil temperature should be 60 degrees F early in the morning for several days before direct seeding cucurbits. For watermelon, it should be 75° F.

Most gardeners direct seed by planting two seeds close together and, after some growth, eliminate the weaker of the two emergent seedlings. Cut the weaker plant at soil level to avoid disturbing the root system of the plant you are keeping. An added safety measure includes putting a cutworm collar around the seeds the day they are planted or when the seedling is transplanted. Squash plants are spaced 36 inches apart, cucumbers 12-18 inches apart, cantaloupe 18-24 inches apart, watermelon 48 inches apart.

If starting in a container, put two seeds into an 8–10-gallon container. (You may choose to sow the seeds into a 4" pot, then transplant when healthy growth of 2-4 leaves is obvious.) Use potting mix (not garden soil). Best depth to plant is 1/4-1/2 inch deep. Water them in and keep the soil moist. Germination is usually within a week.

Cucurbits do not like to be root bound or have their roots disturbed. If you have to buy plants that have already been started, select the ones that look healthy but have the least growth.

Nutrition

For all cucurbits, too much nitrogen will cause excess vegetative growth at the expense of fruit production. Pre-plant with 1/2 pound per 25 sq ft area of 8-24-24 or 13-13-13 four to six weeks before transplant or seeding. Plants need nutrition as they grow. In plant jargon, this is called side dressing.

Side dress cucurbits with 1 TBS . calcium nitrate when the plant starts to run and one month later. (To side dress, sprinkle 1 TBS of fertilizer about four inches from the stem, gently mix into the top one inch of soil, then water the area with as little splash as possible.) For cucurbits repeat the side dressing every four to six weeks until production ceases. Although not scientific, after the second side dressing with calcium nitrate. I alternate 1 TBS of 8-24-24 with calcium nitrate on a four-week schedule. The calcium nitrate is to lessen the chance of fruit developing blossom end rot.

Many gardeners prefer to use organic fertilizers. The spectrum of available resources makes inclusion in this document impractical. Use of organic products on an equivalent basis to those recommended here is certainly an option.

Water

Cucurbits have a large leaf surface and sprawling growth. In hot weather, they transpire (the equivalent of perspiring) a great deal. Their fruit has a very high percentage of water. The result is that they need a lot of water, supplied by rain or watering. They usually do not wilt from the heat or sun alone except in dry times with temperatures in the 90's or above. On days with those very high temperatures mid-day or afternoon shade may allow the plant to utilize more energy for growth and production. If a cucurbit wilts, it needs water or it has a serious pest or infection issue. If a cucurbit wilts in the morning, pest or disease is usually the cause of that wilt.

Light

Full sun is required for maximum fruit production.

Soil

Sandy loam that drains well is ideal for cucurbits. Cucumbers may give higher yield in clay soil, but no cucurbit does well in soil that stays wet.

Cucumbers

Cucumbers are vining plants that fruit readily and copiously. Fruit size ranges from small cocktail cucumbers to the long burpless varieties. All may be eaten fresh, smaller cucumbers are often preserved by canning as pickles or eaten as “ice box” pickles. Three “National Pickle” canning cucumber plants will yield nearly two gallons of pickles. Most cucumber varieties produce excellent fruit for 3-5 weeks, then quality and quantity decline. When that happens, it is best to pull the plants. If they stay in the garden, they become a magnet for pests and disease.

Standard cucumber in container. Photo by Jerry Ballanco

Anticipate that a vining cucumber will grow to 8-12 feet long with many side branches. Container varieties have more of a bush habitat. They produce delicious fruit but reduced in quantity compared to vining varieties.

If the pickleworms start to show up in July, I suggest pulling the plants and waiting until mid-September to try again. A fall crop is likely to be less productive than a spring crop.

Squash: Summer, Winter, Fall

Zucchini, yellow squash, and patty pan squash are all good spring and early summer producers. Harvest usually begins 7-8 weeks after planting. If you keep picking and the squash vine borers don’t find the plants, it is reasonable to expect production for 3-4 weeks before decline. Zucchini and patty pan squash both hide when they hear you coming so look carefully for the fruit. Once the fruit forms, it grows quite rapidly. Most gardeners, harvest summer squash smaller and more tender than is typically found in a grocery market.

Crookneck yellow squash. Photo by Jerry Ballanco

I suggest that significant decline in quality or quantity is a sign to remove the plant. In June or July, when the borers appear, super-human efforts are necessary to protect against their damage. After July, if you and the seedlings can tolerate the heat, the borer pressure is reduced (UMN extension).

Winter squash grows in the summer but ultimately develops a hard outer skin which allows it to be harvested and stored. Typical time from planting to harvest is 90-120 days. Acorn squash, pumpkins, and vegetable spaghetti all grow well but are attacked by borers. Butternut squash is less likely to be attacked.

Melons

Cantaloupe growing on trellis. Photo by Jerry Ballanco

Successfully growing cantaloupe and muskmelon is not only a thrill, it also makes available fruit that is far sweeter than many (early picked) grocery store melons. Delicious watermelon can be readily bought in our area but the thrill of growing a 3-pound or 50-pound watermelon is memorable.

Cantaloupe and muskmelon usually produce first fruit about 3 months after planting. Three to five melons may be expected on the very rangy vines. Training the vines to a trellis reduces disease stress and saves a lot of room in the garden. Though it is usually not necessary, some form of support for the melon to reduce stress on the stem might be provided. These melons are typically ready for eating when the stem separates easily from the top of the fruit. BEWARE!!! Possum and racoons love melons and have a knack for knowing the day before you plan to pick it. Unfortunately, these melons do not get sweeter after picking though the melon may feel less firm to handling over time. After picking a fresh melon, it may be stored with or without refrigeration.

The most frequent pests are cucumber beetles and pickleworms.

Watermelon vines are obnoxious so give them a lot of room. Harvest is usually 3-4 months after planting and, if you watch the plant, you may despair that female blossoms will ever appear. It is as likely as not; you will suddenly see a 2- to 3-pound melon seeming to appear out of nowhere. Because of the need to wait till the temperature will consistently be above 70 degrees to plant, the size of the vine and leaves, and the fact that it is all on the ground, watermelon plants must be watched closely for fungal diseases, especially if it is a hot rainy spring and summer.

Some practice and lots of luck are important when deciding when to harvest. One tip is that the tendril closest to the melon will shrivel and turn brown and the bottom of the melon will change from white to yellow. “Thumping” is for the experts. BEWARE!!! Possum and racoons love melons and have a knack for knowing the day before you plan to pick it.

Luffa

Luffa on the vine. Photo by Jerry Ballanco.

Dried Luffa. Photo by Jerry Ballanco.

Peeled luffa and seeds. Photo by Jerry Ballanco.

Every self-respecting hippie remembers when the inner skeleton of this fruit was a popular substitute for a washcloth or dish cloth. I don't like rubbing my skin with barbed wire so, instead, I use them as excellent cleaning tools in the garden shed and greenhouse. They also make very good, reusable, washable, scrub brushes when abrasives are necessary for kitchen duty. The young plants are edible but not particularly interesting. A spent luffa is easily composted at the end of its useful life.

Luffa vines make watermelon vines look like miniatures so allow plenty of room. A trellis is a much better plan. If you plant it close enough to a tree, it will pretend it is a wisteria and grow well into the tree. It is fun to grow, prolific enough to supply 20 or so luffa, and is seldom bothered by disease. Cucumber beetles will go to the flowers, but production and quality don't seem diminished.

Peculiar Things Cucurbits Do

Blossom End Rot: *Any cucurbit or solanaceous crop*

Blossom end rot is seen in cucurbits and solanaceous crops. Basically, the blossom end of the fruit turns brown, soft, and nasty. The process is the same in all impacted fruit and is thought to be caused by localized deficiency of calcium. The soil may hold adequate calcium. However, because of low pH, inconsistent soil moisture to hold the calcium in solution, or too rapid growth, the calcium is unavailable to the fruit at a critical phase of development. Plants with a heavy fruit load are more susceptible to blossom end rot than those with sparser production.

Give each plant 1 TBS calcium nitrate when it first starts to run, at first blossom set, then every three to four weeks while still producing. The extra calcium helps prevent blossom end rot, but once blossom end rot starts, the fruit is doomed. With melons, alternate the calcium nitrate with 1 TBS of 8-24-24 after blossom set.

https://www.canr.msu.edu/news/blossom_end_rot_causes_and_cures_in_garden_vegetables (a causes and prevention discussion of blossom end rot in different fruit)

Blossom end rot. Photo by CPSU.

Photo by MSU extension.

Wilting as a Symptom

Partial wilt due to squash vine borer. Photo by Jerry Ballanco.

Most cucurbits have big leaves. On hot, sunny days, they may transpire more water than the roots can supply. If that is the case, the plant will look somewhat wilted in the afternoon but, by late evening or the next morning, the plant will appear its usual vigorous self. If the soil feels moist, do not give more water. If the wilting persists or increases, four relatively common, but serious, problems may be responsible: squash vine borers, verticillium wilt, bacterial wilt, or root knot nematodes (see pest and disease section below and Pest and Disease section of this web page).

Melon Split

Home grown melons are the high point of many home gardeners. They take months of care to reach maturity, fruit production is relatively small per plant, and raccoons and possum are ever on the watch for the night before you plan to pick it so they can enjoy it first.

Splitting is an almost impossible-to-prevent problem. Melons are best if, during the final weeks of development, they are grown relatively dry. They taste better. However, if during this period of fine tuning, heavy rain falls or the irrigation system is left on too long, the fruit may split. Even if the melons are watered appropriately, a heavy downpour may still cause some melons to split. Over-ripe fruit may split. Low soil boron level may predispose to fruit split but that is an unusual cause.

If palatable, a split fruit may be eaten without fear. Some varieties may be more prone to split than others.

Noir des Carmes muskmelon split. Photo by Jerry Ballanco.

Pests

The pests in this section are the pests most likely to be encountered in the home garden in St Tammany Parish. It is not an exhaustive list.

Every effort has been made to ensure the accuracy and current "best practice." Over time, new ideas or therapies may come forward that are not reflected in these pages. If organisms or symptoms not seen in these notes occur in your garden, check references and/or contact the parish ag center agent.

Root knot nematodes: *They attack many crops and any cucurbit*

Nematode infested root. Photo by Jerry Ballanco.

The usual result of infection with root knot nematodes is a stunted, sickly looking plant that wilts easily and repeatedly. Such a plant is unlikely to survive or offer usable fruit. In some cases, the plant may appear reasonably healthy and produce a slightly reduced crop but, when the plant is removed at the season's end, the typical galls are seen. Consider this bed or container contaminated.

A nematode is a microscopic animal that lives in the soil but requires living plant tissue for food. They enter a susceptible plant's roots and multiply. This interferes with the root's functions and causes distortion of the root anatomy by making gall-like bumps on the roots. The root knot nematode is infectious to a wide variety of crops and ALL cucurbits, though watermelon are usually spared.

Once a population of root knot nematodes is established in the soil, nematode resistant varieties (RKN on the catalogue description) should be chosen FOR EVERY CROP PLANTED IN THAT SOIL and crop rotation strictly observed. (There are no RKN resistant cucurbit varieties). Natural reduction to a safe soil level of nematodes requires a four-year period in which no crops supporting their growth have been planted. Direct control methods are difficult for home gardeners but there are two techniques to reduce the population of nematodes, possibly to a subclinical level.

French marigolds invite the nematodes into their roots but, when they enter, the nematode can develop no further thus reducing the population by diminishing reproduction.

Another technique involves addition of chitin to the soil. When fungi in the soil try to dissolve the chitin for their use, they secrete an enzyme that ultimately compromises development of young nematodes. In Louisiana, chitin is in crab shells, shrimp shells, and crawfish shells. After a boil, add the shells to the soil, break up as much as possible with the shovel. Wait at least two weeks before planting anything, as the ammonium released in this process may damage young plants. The salt seems to not be a problem but rinsing the shells removes most of the salt.

http://entoweb.okstate.edu/ddd/diseases/rktomato.htm

https://www.lsuagcenter.com/profiles/coverstreet/articles/page1486135407127

https://content.ces.ncsu.edu/control-of-root-knot-nematodes-in-the-home-vegetable-garden#:~:text=Other%20common%20garden%20vegetables%20grown,have%20galled%20and%20decayed%20

https://hgic.clemson.edu/factsheet/root-knot-nematodes-in-the-vegetable-garden/ (an excellent article with what to do if faced with root knot nematodes)

Squash Vine Borer: *Attacks only squash*

If you grow squash in St. Tammany, you must protect the plants from this destructive pest. Similar to the symptoms of wilt diseases, a healthy, producing plant or section of the plant begins to wilt. Then it worsens. If you look at the stem closely, you will see what appears to be sawdust (it is frass, caterpillar excreta) surrounding a hole in the stem. This is the entry spot of the larva. This pest is ubiquitous in the warm weather. The adult flies in the daytime and can be seen but is the dickens to catch or kill. Unfortunately, by the time you see the entry wound, the survival of the plant is unlikely but harvestable fruit is good to eat.

The moth(s). UMN photo.

The egg. UFl photo.

Heaven forbid! Texas A&M photo

The larva in the stem. UMN photo

The full catastrophe. Photo by Laura Steffee

Usually, the moth lays eggs near the base of the plant though the moth may lay the eggs anywhere on the plant. If the eggs are laid on a leaf or distant stem, a single leaf is involved. More often, though, the moth lays eggs near the main stem. The larva bores into the stem and serious problems begin because the vasculature of the squash plant is compromised.

When a squash vine borer attacks a squash in your garden, you may try to save the plant. Slit the stem along the long axis, find and remove the caterpillar (the larva), cover the wound with soil. The plant may survive. Recently, I've had some success using a stiff wire to puncture the stem one inch below to two inches above the entry site. Use multiple punctures as you are trying to kill the larva that is in the center of the stem. If the plant is too far gone, pull it, cut open the stem, find and kill the larva then dispose of the plant but DO NOT COMPOST (in case you missed a larva or two).

Study the resources below for a variety of strategies to deal with this pest. (In St Tammany, the borer moths usually appear in May (emerge from a cocoon in the soil). Early planting of vulnerable squash will help as the plant matures before the moths emerge. A strategy suggested to me by another gardener helps but is not completely effective: spray the stem of all squash plants with BT every 7 days after the vines start to run until harvest is complete. Other gardeners use Spinosad or other insecticides (be sure to check the PHI-pre harvest interval) but broad-spectrum insecticides may kill the pollinators visiting the flowers. Squash need pollinators to make fruit.

Pull the healthy squash plants when production becomes sparse (usually 3-4 weeks production). Rotate planting rows.

https://extension.umn.edu/yard-and-garden-insects/squash-vine-borers

https://citybugs.tamu.edu/2018/08/13/living-with-squash-vine-borer/

https://bookstore.ksre.ksu.edu/pubs/MF3309.pdf

Cucumber Beetle

Cucumber beetles eat trivial, small clinically insignificant holes in the leaves. However, they give warning that cucumber beetles are present. Often, they can be found inside the open flowers. The worrisome thing about cucumber beetles is that they may transmit a bacterial disease that is uniformly fatal to the plant. The beetles that are not carriers cause little harm.

The other especially problematic pests for cucumbers are pickleworms (see below for more information on pickleworms).

The cucumber beetle in the accompanying photo does not have his small, black head. The adult beetle is slightly smaller than a ladybug. Some have lines, not spots, but are equally dangerous. As in the accompanying photo, a yellow sticky trap will attract cucumber beetles but not bees. Commercially, they are used for scouting. I use them to catch beetles that I see on leaves or flowers.

If bacterial wilt infects a plant, first a few leaves, then a runner, then the entire plant wilts and dies. If a non-infected beetle feeds on an infected plant and then moves to another plant, it will transfer the infection. Muskmelons, cantaloupe, and cucumber plants can be quickly destroyed. The bacteria overwinter with the beetle and emerges with it in the spring to start the infectious cycle again.

The holes in the cucumber leaf are caused by feeding cucumber beetles. Photo by Jerry Ballanco

The spotted cucumber beetle is seen (without his head) in the accompanying photo). Photo by Jerry Ballanco

Bacterial wilt disease in cucumber. This infection is transferred by cucumber beetles. Photo by Jerry Ballanco

Striped cucumber beetle on yellow sticky trap. Photo by Jerry Ballanco

Vulnerable plants can be raised under insect barrier cloth, but that cloth needs to be removed for pollination. Contact insecticides (see below) are poisonous to the beetle after contact and will be beneficial if the beetle is killed before infecting the plant. Most pesticides are deadly to beneficial insects and pollinators so need to be used judiciously. Spraying after pollinators have left the plants for the night will decrease the impact on this population. Spinosad may have some sparing properties for beneficial insects.

https://plantpathology.ca.uky.edu/files/ppfs-vg-11.pdf

http://vegetablemdonline.ppath.cornell.edu/factsheets/Cucurbit_Beetles.htm

Pickleworms

Primarily a pest of cucumbers, squash, and cantaloupe; may also be a stem "borer"

In many ways, the pickleworm is like most Lepidoptera. A moth lays some eggs, caterpillars develop from the egg and begins to feed. Though not always true, most caterpillars start eating leaves before finding the fruit and destroying it. The tomato pinworm, pickleworm, and squash vine borer are usually found too late to avoid ruination of the fruit or premature death of the plant.

Pickleworm and damage to cantaloupe. Photo by Jerry Ballanco

The pickleworm attacks cucumber and squash as favorites but occasionally cantaloupe or pumpkin. Because the eggs are usually laid near or in the blossom, the hatched larva has almost immediate access to the fruit. Sometimes, the larva will feed on the flower or a few small leaves near growing tips or tunnel into a stem. If they do, they may be discovered before entering the fruit. More often, they are discovered when white (almost clear) frass is found on the fruit just below a small entry hole.

Pickleworm entry hole and frass in patty pan squash. Photo by Jerry Ballanco

Since pesticides will not harm the moth or eggs, the pesticide must be present and active in the blossom and leaves to prevent the larva (caterpillar) from entering and ruining the fruit. Since cucurbits require pollination by insects, using an insecticide with residual action will harm pollinators and may prevent fruit from forming. If you use an insecticide, use one with the shortest residual action you can find and apply it after the pollinators have left in the evening and the blossoms are less open. Spinosad reportedly is more lethal to pests than beneficial insects and pollinators. It also has relatively short residual activity. Bt (from *Bacillus thuringiensis*) may have some protective effect. Row cover, put on at night and removed in the day, is effective but very difficult with these large, lanky plants. Covering the fruit with a paper bag or, possibly, insect barrier cloth may protect the covered fruit.

Some summer squash varieties have partial resistance. See seed catalogues for those varieties.

Pickleworms are a problem. The best way to not deal with them is to plant early in the spring before they are active.

About the only good thing is that they usually die out in the winter. (This may change as the climate warms even more). At present, pickleworms tend to be problematic mid to late July, August, and September. Then they die off, but their ilk returns the following year.

https://hgic.clemson.edu/factsheet/cucumber-squash-melon-other-cucurbit-insect-pests/ Has an excellent table with recommendations for pest and disease control of cucurbit pests.

https://plantvillage.psu.edu/topics/squash/infos/diseases_and_pests_description_uses_propagation

Notice the ice-colored frass above and below the entrance hole in this cucumber stem. Photo by Jerry Ballanco.

Squash Bugs

Such a sight as this photo depicts is no way to start or end a day. However, these bugs look worse than they are. Primarily, they are a threat to younger plants and far less so to a mature plant. Their favorite plant is winter squash and pumpkin but will also bother cucumbers and summer squash.

The instars and adults have sucking mouth parts which means that you can infer their presence on a squash plant if you see white/tan stippling of the leaves. Eventually these areas will turn brown.

The bugs often feed during the day and hide under garden debris at night. If they are startled, they will hide under a leaf and are difficult to see. If a gardener puts newspaper or some wooden boards near the squash plant, the bugs will hide under these at night. They can be retrieved in the morning from under the cover and killed. If found in the day, a hand-held vacuum cleaner is a great way to collect the bugs.

Generally, in a mature plant or after July, no specific therapy is needed but the above techniques are effective. If pesticides are needed, see the link below for suggestions. They overwinter in plant debris. A clean garden supports fewer spring pests.

https://extension.umn.edu/fruit-and-vegetable-insects/squash-bugs

Squash bug instars and adults on butternut squash plant. Photo by Laura Steffee

Diseases

Cucurbits, unfortunately, grow during seasons of high fungal and bacterial activity...warm weather with high humidity. Overhead watering or several days of rain activity often promote the growth of these very prevalent organisms.

The diseases below are the major diseases of cucurbits in St Tammany Parish. Other diseases also occur but are not listed because they are relatively infrequent.

Leaf changes caused by fungal infection do not heal. They do slow or stop spread. Fungicides are best started at the first sign of infection or started when conditions seem favorable for development. Many gardeners alternate between two or more fungicides to minimize the opportunity for development of resistant organisms. Some cucurbits have varieties that are resistant to some or many fungal diseases. When using any garden chemical, read and follow the directions.

https://hgic.clemson.edu/factsheet/cucumber-squash-melon-other-cucurbit-diseases/ good review with photos of diseases, table of fungicides

https://pdf.agriexpo.online/pdf/seminis/cucurbit-disease-guide/181226-28071.html exhaustive list of diseases for commercial growers

Anthracnose

Ordinarily, we think of this disease associated with tomatoes and peppers. Anthracnose is also a common problem with cucurbits especially melons, cucumbers. and squash.

The fruit lesions are single or multiple sunken brown or dull grey. Often, but not always, they appear after harvest. See “tomatoes,” on this web page, for a strategy to avoid post-harvest lesions on fruit.

Lesions in the field can be minimized by good garden hygiene, drip irrigation, and crop rotation. In warm, rainy, humid weather, a regular schedule of fungicide spray will lessen the activity of this fungus. Be sure to read and follow the label of any garden chemical you use.

Online photo by UMass Extension Vegetable Program

Bacterial Wilt of Cucurbits: *Especially cucumber, cantaloupe, squash*

Bacterial wilt of cantaloupe. Photo by Jerry Ballanco

Cucumber beetle is the vector for this uniformly fatal disease. The wilt often begins only on a section or branch of either a cantaloupe, cucumber, or squash. Then it progresses to brown dead leaves and stems. The only solution is to remove the plant. The organism overwinters in the beetle and can be transmitted to the plant when an infected beetle feeds.

See St. Tammany Parish Master Gardener web page Pest and Disease sections for more information.

https://extension.umn.edu/diseases/bacterial-wilt

Angular Leaf Spot

https://extension.umn.edu/diseases/angular-leaf-spot

Damping Off

This very destructive disease of seedlings can be caused by several different fungi and molds. It can attack any seedling. Newly emerged or very young seedlings are most susceptible. It especially plagues seedlings grown in germination medium that contains garden soil, compost, or one to which fast acting nitrogen is added.

The accompanying photo is descriptive. The first warning may be that the seedling no longer stands upright. Note the tapering of the healthy stalk as it approaches the soil. This seedling will not recover and will shortly die. The disease may rapidly spread through a seed tray or a planted row. Other manifestations may be discolored or "wet" cotyledons and nearly absent roots.

There are several organisms that are responsible. They attack newly germinated seeds or newly transplanted small seedlings especially when the soil is cool. Long periods of overcast or wet weather are also potential trouble but anything that causes slow growth of the seedling sets the stage. It is counterintuitive, but too much nitrogen too early may make seedlings more susceptible. Be sure the soil is warm enough to permit rapid germination and initial growth for direct seeded vegetables and flowers (link below). http://sacmg.ucanr.edu/files/164220.pdf. Keeping the seedling soil too wet also increases the risk of damping off.

For seeds started in trays in preparation for transplant, use only clean germination medium in new or sterilized containers. Do not add fertilizer, garden soil, or compost to germination medium. Make sure that the environmental temperature and light are appropriate for rapid growth. A heat mat placed under the seed starting tray may be appropriate. Keep seedlings moist but not drenched. Do not use fertilizer until true leaves start to grow then use at diluted strength until the seedling is put into its garden site. That is usually when the roots start to exit the seed starting container.

Damping off disease may destroy the entire planting of seeds started in trays. These suggestions may not apply in hydroponic gardening.

Damping off. Photo by Jerry Ballanco

A way of sterilizing containers is to make a bleach solution of 9 parts water and 1-part bleach. Soak containers and tools in this solution for 20 minutes. Tools should be treated in the same manner or a dedicated set available. Bleach can be tough on tools so be sure to rinse well after bleach treatment. Wash your hands free of garden soil when handling the trays.

https://extension.umn.edu/solve-problem/how-prevent-seedling-damping#:~:text=Damping%20off%20is%20a%20disease%20of%20seedlings&

Powdery Mildew: *Affects many plants with big leaves, cucurbits especially*

Powdery mildew on cucumber. Photo by Rachel Lambert

Powdery mildew is most seen when there is little rain, cool to warm days, and high humidity. The leaves look as if someone sprinkled baby powder on them. The leaf may be dusted or splotchy appearing and is usually seen on the top of the leaf first. If not corrected, it quickly spreads and may cause considerable foliar loss. The leaves progress from white covered to brown and shriveled. Generally, the fruit is not directly impacted but sunscald may cause damage.

It especially bothers plants grown in shade vs full sunlight and those so crowded so that air circulation is poor. It can be easily spread by wind or tools. Leaves that are covered with the mildew or are already turning brown should be removed.

Resistant varieties are available and should be considered. Fungicides, Neem oil, and bicarbonates are usually effective in control. Always read and follow label instructions.

https://extension.colostate.edu/topic-areas/yard-garden/powdery-mildews-2-902/

https://www.lsuagcenter.com/NR/rdonlyres/C5AFCD25-0663-4BBA-961E-64EB0821C1BB/46974/pub3050DiseaseMgmtVegGardensLOWRES.pdf

Downy Mildew

Downy mildew, caused by water mold, can impact many vegetables and, untended, is a serious threat to the general health of the plant. It occurs in wet weather or plants with overhead watering. It begins, as in the accompanying photo, with yellow spots on the top of the leaf. Soon, a grey mold starts to appear on the undersurface of the leaf. Spread, at that point, is very fast. Proper plant spacing reduces the incidence of downy mildew. Resistant varieties are available for some crops. Treatment is with approved fungicide. (See links below).

Downy mildew (shown here on a cucumber plant) looks the same on any green leaf plant. Photo by Jerry Ballanco

Chlorothalonil may provide more effective control than fixed copper. The appearance of the leaves may not be very different after treatment, but disease progress should be temporarily halted. Do not become complacent. Consider a regular regimen of fungicides and monitor closely.

https://hgic.clemson.edu/factsheet/cabbage-broccoli-other-cole-crop-diseases/http://blogs.cornell.edu/livegpath/gallery/cucurbits/downy-mildew-o-cucurbits-early-%20symptoms/

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