SEEDTIME

Disease ID & Defense Cheat Sheet

INDEX

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Some good news up front

Truly healthy plants thrive with very little disease.

When disease keeps showing up in a garden, the plant isn't just sick. The conditions the plant is living in are out of balance, and the disease is the signal that something underneath needs attention.

Honestly? You don't have to be afraid of disease in your garden.

Most home gardeners, if they're growing organically and focusing on soil health, will only run into a handful of common ones in their specific area. Not a textbook full. A handful.

And once you know which ones tend to show up where you live, you can mostly get ahead of them.

The cheat sheet that follows covers four of the most common ones for home gardeners: powdery mildew, blight, septoria leaf spot, and damping off. Plus what we run (or would run) when we see them in our own beds.

Why disease shows up (the short version)

Disease starts with stress.

Whether it's a fungus, a bacteria, or a virus, the plants that get hit hardest are almost always the ones already under pressure from something else.

Bad soil. Too crowded. Sitting wet overnight. Roots in compacted ground. Heat stress that never resolved. Transplant shock that hung on.

Here's a simple way we like to think about it.

Imagine that you're the root of your plant. Would you want to be living in the soil in your garden? Is the soil aerated and crumbly, kind of like a chocolate cake texture? Or is it cloddy, compacted, waterlogged?

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Roots can tell. And stressed roots make stressed plants. Stressed plants invite disease in.

The conditions that invite disease most often:

Soil that has been depleted by years of growing without fresh organic matter going back in

Plants crowded together with no airflow between them

Wet leaves overnight, usually from overhead watering in the evening or a sprinkler running late

Compacted soil that drains poorly and stays soggy

Plants stressed by heat, drought, or transplant shock that never resolved

If you can keep your soil alive, your watering practice clean, and your plants spaced enough that air can move between them, you've already done most of the prevention work. The four diseases below are the most common ones that show up when the foundation has gaps.

How to tell what you're actually looking at

Not every yellow leaf is disease. Before you treat, take 30 seconds to sort what you're seeing into one of four buckets.

1. Fungal disease. White or gray powdery patches on leaves. Brown or black spots with rings. Fuzzy growth on the underside. Rotting roots. Stems that flop over at the soil line on seedlings.

The vast majority of plant diseases are fungal or fungus-like. Spencer Scott put the share at around 85% in his disease talk at one of our Seed to Harvest Summits, which makes this the most common bucket.

Fungal disease usually shows clear visual patterns.

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2. Bacterial disease. Wet-looking spots that ooze when you cut into them. Wilting that doesn't perk back up after watering. Soft rot, sunken areas of dead plant tissue. Sometimes you cut a stem and a milky liquid streams out.

Bacterial disease lives inside the plant tissue and doesn't respond to surface sprays the way fungal disease does.

3. Viral disease. Leaves yellowing or showing patches of yellow, light green, or white. Plant growth stunted or misshapen. Leaves rolled, swollen, or puckered.

Viral disease is less common in home gardens than fungal or bacterial. When it shows up, it's spread by insects or by people moving between plants.

Usually the best move is to pull the affected plant and look for resistant varieties next time.

4. Nutrient deficiency. Often looks like disease but isn't.

Overall yellowing of the plant, especially older leaves, is often nitrogen. Reddish-purple tint on young or small leaves and stems can be phosphorus. Yellowing between leaf veins on older leaves with scorched edges can be potassium.

Also: too much water, bad drainage, or too much raw manure can cause discoloration and stunted growth that looks like disease.

Before you assume disease, check the soil and the watering.

If you aren't sure, here's what we suggest.

Snap a photo on a white piece of paper (a sheet from the printer works). Get close. Compare against a good plant disease guide.

Or get the leaf in front of someone who has grown the same crop in your area.

Getting the ID right is half the work.

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The four diseases many people see most in a home garden

1. Powdery mildew

Powdery mildew on zucchini. Wikimedia Commons, CC0.

What it looks like. White or gray powdery patches on the tops of leaves. Looks almost like flour was sprinkled on the plant. As it progresses, the patches grow and the leaf yellows underneath.

What it hits. Squash, cucumbers, melons, beans, and sometimes tomatoes.

When. Mid to late summer is the usual window.

Powdery mildew is a little different from most fungal diseases. Most fungi need wet conditions to take hold.

Powdery mildew gets started in cool, moist conditions, then thrives at 70 to 80 degrees with humidity, particularly humidity at night.

What to do about it.

Remove the worst-affected leaves right away. Bag them. Don't put them in the home compost pile. Most home piles don't run hot enough to kill the spores reliably.

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Improve airflow. Prune lower branches. Space plants further apart next season.

Stop overhead watering on susceptible crops, especially in the evening.

Spray the leaves with either the milk spray or the baking soda spray. Full recipes for both live in the treatment toolkit further down.

One note for the cucurbit growers.

Powdery mildew rarely kills the plant outright, depending on how many leaves get affected.

So if you see it late in the season on a squash or cucumber plant that's still producing, treat what you have, keep newer growth clean, and let the plant ride out the rest of its run.

2. Early blight and late blight

Early blight on tomato leaves — dark spots with concentric rings and yellow halo. Wikimedia Commons, CC BY 2.0.

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Late blight on tomato fruits — dark, leathery, fast-spreading water-soaked patches. Scot Nelson, Wikimedia Commons, CC0.

What it looks like. Early blight shows up as brown or black spots with concentric rings, like a target, usually on the lower leaves first. Late blight spreads much faster and shows up as quickly-spreading water-soaked patches that can take out a plant in days.

What it hits. Tomatoes and potatoes.

When. Mid to late summer, especially in wet years. Late blight in particular brings a lot of drama for tomato growers because of how fast it moves.

What to do about it.

Remove infected leaves at the very first sign. If you sterilize your pruners between every cut with rubbing alcohol or a bleach water solution, it'll help keep the disease from spreading. Otherwise you could end up just moving the disease from leaf to leaf and plant to plant.

Mulch heavily under your tomato and potato plants. The fungus that causes blight lives in the soil and splashes up onto the lower leaves during rain or watering. Mulch is the physical barrier that interrupts the splash.

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Trellis or stake the plants so the lower leaves are off the ground and have airflow. We like to run a two-leader string-and-clip system on our tomatoes for exactly this reason. The leaves stay up and dry, and air moves through.

If the season is particularly bad, end-of-season green tomatoes are still salvageable. We pull green tomatoes off the vine and ripen them in boxes when the vines come out, and the family still gets fresh tomatoes for weeks after. A green tomato is salvageable. A fully blighted one usually isn't, because the fungus moves through the fruit even when you can't see it from the outside, so don't try to cut around the bad spots.

For late blight specifically, the right call is often to try to keep it at bay through the heat of the summer before new fall growth sets in or pull the affected plant fast rather than try to treat. We walk through how to make that call further down.

3. Septoria leaf spot

Septoria leaf spot on tomato — small circular spots with light gray centers and dark borders. Wikimedia Commons, CC0.

What it looks like. Many small, circular brown spots with light gray centers and dark borders. Different from early blight in that the spots are smaller, more numerous, and lack the concentric-ring pattern.

What it hits. Almost always tomatoes.

When. Summer through early fall, especially in wet years.

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What to do about it.

Prune affected leaves. Again, you can sterilize your pruners between every cut with rubbing alcohol or a bleach water solution to reduce spread. Otherwise you may just move the disease from leaf to leaf.

Improve airflow. Septoria spreads in still, humid air around crowded plants. Pull back companion plants, prune lower branches, give the plant room.

Mulch under tomato plants to interrupt the soil-splash transmission. Same logic as blight.

Water at the soil, not the leaves. Drip irrigation, a soaker hose, or careful hand-watering at the base of the plant. We teach this as the single most important watering rule for tomatoes and melons, because moisture on those leaves invites blight, septoria, and the other fungal diseases.

Rotate tomato planting locations year over year. Don't plant tomatoes in the same bed two years in a row.

4. Damping off

Damping-off on a beet seedling — collapsed and discolored stem at the soil line. Utah State University Extension.

What it looks like. Seedlings flop over at the soil line and die. Often whole trays fail at once. The stem just below the soil collapses and the seedling is done.

What it hits. New seedlings, of any crop. The disease attacks them before they get established.

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When. Indoor seed-starting, or right after transplanting into cool wet ground.

What to do about it.

Use a clean seed-starting mix, not garden soil. Garden soil can bring in disease spores that the seedling can't handle.

Bottom-water your starts. Set the trays in a shallow tray of water for a few minutes and let the soil blocks or plug trays soak up water from below. The leaves stay dry. The water reaches the roots evenly. Drain off any standing water afterward so the starts aren't sitting in puddles, which can drown them.

Don't overwater. Let the top inch of soil dry slightly between waterings. Damping off thrives in soggy, undrained conditions.

Improve airflow around the seedling trays. A small amount of air movement helps that top layer stay slightly drier.

Don't worry too much about a little mold on the surface of the soil blocks. That's fairly normal and usually not the same as damping off itself, which is the seedling stem collapsing.

A note on what "clean" means here.

We don't mean sterile. We use a live, microbially-active soil mix rather than a sterilized one. The seedlings actually benefit from contact with the soil biome from day one.

What "clean" means: no garden soil, no leftover diseased plant debris, and trays rinsed clean before reuse.

Our organic treatment toolkit

Most home garden disease can be handled with a small set of organic options. Here's what we suggest.

What we usually skip

Neem, sulfur, and copper all have natural fungicidal properties.

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We rarely use them, because they have harmful side effects.

Neem and sulfur are strong enough that they end up destroying both the good organisms and the bad ones in your soil. So yes, you get rid of the disease, but now you've also wiped out the beneficial microbes that keep the soil ecosystem balanced.

And copper is an essential mineral, but if you keep using it in your garden, you can build up too much in your soil over time, which gets toxic in its own way.

The trade-off isn't usually worth it for a home gardener.

Plenty of options exist that are gentler.

Fermented compost tea (what to lean on first)

The microorganisms in good compost are exactly what your plants need to fight disease. You can pull them out into a sprayable form by steeping the compost in water to make a tea.

The recipe:

One part finished compost (well-decomposed, at least two years old or so)

Five to eight parts water

Let it sit for three to seven days. If you want more effectiveness, let it ferment for a couple of weeks.

Strain the liquid off, leaving the dirt and undecomposed bits behind.

Spray on the leaves or on the soil, depending on whether you're dealing with a leaf disease or a soil-borne one.

The compost tea adds beneficial microorganisms directly to the plant or the soil, which gives the plant a boost while crowding out the disease pathogen at the same time. Works on both fungal and bacterial disease.

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Milk spray (powdery mildew specific)

Mix one part fresh milk to nine parts water. Spray on the leaves two to three times a week.

We had some powdery mildew problems on some winter squash one summer, and tried this. We saw some benefit from it.

It's not perfectly clear how milk suppresses powdery mildew. It may prevent the fungus from invading more, or it may simply boost the plant's immune system.

Either way, it has been shown to work on powdery mildew specifically.

Baking soda spray (powdery mildew specific, Spencer Scott's recipe)

From the disease session we co-hosted with Spencer Scott at one of our Seed to Harvest Summits.

A quarter cup of sodium bicarbonate (baking soda) to one gallon of water, plus two to four drops of dish soap. Shake it up well.

Spray over the leaf, top surface where the powder is showing.

The baking soda raises the pH on the leaf surface enough that the fungus has a hard time living on it. It's a fungistatic (slows growth) rather than a fungicide (kills outright), so use it as ongoing protection on the plants most at risk.

Actinovate plus fish emulsion

Actinovate is a product you can buy that contains a high concentration of beneficial microorganisms. Mixed with kelp or fish emulsion, it makes an excellent disease-fighting spray that also feeds the plant.

The recipe:

One teaspoon of actinovate

One tablespoon of fish emulsion

One gallon of water

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Mix, put in a sprayer, spray on the leaves or on the soil depending on what you're dealing with.

This one is doing two jobs at once.

The actinovate adds beneficial microorganisms that fight the disease. The kelp or fish emulsion adds a nutrient boost that helps the plant's own immune system kick in.

We have used this on both fungal and bacterial disease with good results.

Solarization (for recurring soil-borne disease)

If you have a soil-borne disease that keeps coming back year after year in the same bed, solarization can help. The idea is to bake the pathogens out of the soil using clear plastic over the heat of summer.

How it works:

Spread a clear plastic sheet over the affected bed.

Seal the edges by burying the plastic about six inches deep around the perimeter or just weighing it down with sand bags or heavy blocks of wood.

Leave it on through the hottest part of the summer. The soil temperature underneath will climb high enough to kill pathogens six to twelve inches down.

If you're further north and the summers aren't as hot, you can use two layers of plastic with a small air gap between them to capture more heat.

You will knock back some beneficial organisms along with the pathogens, but it's less of a wipeout than it sounds. Solarization pasteurizes the soil rather than sterilizing it. Many beneficials, including mycorrhizal fungi, are either heat-tolerant enough to survive or fast enough to recolonize once the plastic comes off. Adding compost after speeds that recovery, and the net result is often a healthier microbial community than before, since the pathogens took a bigger hit than the beneficials did.

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Worth doing for a bed with a serious recurring problem. Not worth doing as a routine practice - you're still tying up the bed for one to three months in the prime growing season.

When to pull a plant entirely

Knowing when to make that call is harder than knowing how to treat one. Most home gardeners get stuck on it.

Pull too early, you waste a plant that would have recovered. Pull too late, you've let the disease spread to neighbors that didn't have to get sick. Most of the time you're working with incomplete information, and the window to act is narrow.

Here's the good news. You don't have to catastrophize this. Pulling a plant isn't a failure. It's part of the gardening year. Sometimes the right choice is to start over. The trick is having a small set of questions you can run, so you can decide and move on.

A quick way to think it through

Walk to the affected plant. Here are four questions to run, roughly in this order. You should be able to work through all four in about a minute.

Question 1: How much of the plant is actually affected?

Look at the whole plant, not just the worst leaf.

A few leaves at the bottom showing damage, the rest of the plant looks healthy. Plant is salvageable. Remove the affected leaves, treat per the toolkit above, check it again in a few days.

Damage spreading up the plant, roughly half the leaves now affected. Plant is borderline. Without quick intervention, the treatment will be slower than the spread. Remove every affected leaf, change your watering practice if leaves are getting wet, improve the airflow if the plant is crowded, and check again in less than a week. If the new growth coming in is clean, you're winning.

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Most of the plant is affected. The treatment won't catch up. Pulling is usually the right call unless you want to try to bump the plant along until the weather changes and new fall growth kicks in.

Our general reflex on pest-stressed plants is to revive before pulling.

We have seen this in our own garden over and over: collards crawling with aphids, kale stripped to a skeleton by cabbage worms, eggplants riddled with flea beetles. In each one, some quick organic intervention brought the plants back.

Disease is a different problem because disease often spreads inside the plant tissue rather than feeding on the outside, so the calculation works differently.

Still, the disposition is the same in spirit. If you have a window to save the plant, take it. Also, if it’s set fruit and you want to keep it alive until the fruit is ready to pick - that can be a win too as long as the fruit itself isn’t affected.

Question 2: Is this fungal, bacterial, or viral?

Each behaves differently, and the answer changes the call.

Fungal (powdery mildew, blight, septoria, downy mildew, gray mold). Recoverable in many cases if caught early. Plants can grow new leaves to replace the damaged ones. Treatment slows the spread.

Bacterial (bacterial wilt, bacterial leaf spot, bacterial speck, fire blight). Doesn't usually recover. Bacterial disease lives inside the plant tissue and can't be sprayed away from the outside. Often the only intervention that helps is pulling the affected plant fast to prevent the disease from spreading to neighbors.

Viral (mosaic, leaf curl). Less common in home gardens than fungal or bacterial. Spread by insects and by people moving between plants. Usually the best move is to pull the affected plant and look for resistant varieties next season.

How to tell them apart in the moment.

Fungal disease usually shows clear visual patterns. Powder. Spots with rings. Fuzzy growth on the underside of leaves. Rusty looking discoloration.

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Bacterial disease often shows up as wet-looking spots that ooze when you cut into them. Or rapid wilting that doesn't perk back up with watering.

For vascular fungal diseases like verticillium wilt, the cut-the-stem test also helps. Cut a thicker branch open and look inside the inner tissue. If you see dark discoloration in there, the disease has gotten inside the plant's plumbing. That's a sign the disease has set in deep, and treatment from the outside won't catch up.

Question 3: How late in the season is it?

Late season changes the calculation.

If the plant is within two or three weeks of when you would normally pull it anyway, we lean toward pulling early.

Plant has produced what it's going to produce. Pull now, even if it might still recover. Frees the bed for a succession crop or a cover crop. Removes a disease vector that could spread to neighbors. We do this with tomatoes near the end of the season pretty often. Pull the vines, harvest any decent-sized green tomatoes, ripen them indoors in boxes, and the family still gets fresh tomatoes for weeks.

Plant still has substantial harvest left. Worth treating, if the damage is still in the "first half of the plant" range.

Question 4: What happened the last time you treated it?

First treatment underway, no new damage showing on the new growth. Give it a few more days before re-evaluating. Treatment takes a beat to land.

Second round of treatment, and the new growth is still showing the same damage. The plant is stressed enough to be a liability to its neighbors. Pull.

If you haven't treated yet at all, those four questions are really just questions 1 through 3 plus "what does the toolkit above say to try first?" Run the treatment, then come back to question 4 in a few days.

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What to do once you've decided to pull

You have made the call. Now what.

Pull the whole plant, including the roots. Leaving roots in the soil can let soil-borne pathogens persist where the plant came out. Get the whole thing.

Bag it. Don't compost it. Most home compost piles don't run hot enough to kill fungal spores or bacterial pathogens reliably. So the compost pile is the wrong destination here. Bag the plant, get it out of the garden, and get it as far away from your garden as possible. Burning works if you can do it safely. Otherwise, send it out with the household trash.

Sanitize your tools. The standard options are 70% rubbing alcohol (dip, wipe, or spray - no rinsing needed) or a 10% bleach solution (1 part bleach to 9 parts water, with a rinse after to keep your blades from corroding). Hit the pruners between cuts when you know you're working with disease, or at minimum between plants. Same idea for gloves and any handheld tool that touched the plant, though cloth gloves are easier to swap out than to disinfect. One un-sanitized cut on a healthy plant five minutes later can transplant the disease right into the next victim. It's not glamorous and it's what works.

(Exception: if you're dealing with fire blight on apples or pears, skip the alcohol and use bleach - alcohol doesn't reliably kill it.)

Don't replant the same family in that spot next year. Many diseases are family-specific and the pathogens hang around in the soil for at least a season. Solanaceae for tomatoes, peppers, potatoes, eggplant. Cucurbitaceae for squash, cucumbers, melons. Brassicaceae for cabbage, broccoli, kale, collards. Move the family to a different bed for at least a year, longer for the more soil-persistent diseases.

Cover the cleared area. Bare soil after a disease pull invites more problems. Mulch it, plant a cover crop, or put a fast-growing succession crop in. Never leave the bed bare.

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What to do if you're keeping the plant

If the plant passes the four questions and you're going to treat:

Remove every visibly affected leaf. Don't try to save individual diseased leaves. The plant has more, and trying to save diseased ones just keeps the disease in the system.

Sanitize pruners between every cut or between plants. Same rubbing alcohol or bleach water solution. Same reason. One sloppy cut transplants the disease.

Improve the airflow. Prune lower branches. Pull back the companion plants that are crowding it. Stake or trellis to lift leaves off the ground. Disease moves fastest in still humid air.

Stop overhead watering. Water at the soil only. Drip irrigation, soaker hose, or careful hand-watering at the base. If you've to use a sprinkler, do it early in the morning so the leaves have time to dry off in the sun before evening.

Mulch under the plant. Prevents soil-splash transmission from soil-borne pathogens onto the lower leaves.

Don't heavily fertilize a stressed plant. Pushing more growth on a plant that's already struggling just gives the disease more leaves to spread to. Light feeding only, if anything. A diluted compost tea or fish emulsion is fine. Heavy nitrogen is the wrong move.

Re-evaluate in less than a week. If the new growth coming in is clean, you're winning. If that growth is showing the same damage as the old leaves, the disease has won. Pull.

That last step is where most home gardeners get stuck.

We get attached to the plant. We want it to come back. We give it one more round. And then another 😅

The honest test is whether the new growth is clean. If it isn't, the plant is no longer recovering. It's just decaying in slow motion.

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Pull, and move on to the next one. There will be a next one.

Special cases

A few crop-specific decisions that come up enough to break out separately.

Tomatoes.

Early blight or septoria, just a few lower leaves affected. Treat. Most tomato plants recover from minor early blight if caught early. Prune the affected leaves, sanitize tools between cuts, mulch under the plant, switch to soil-level watering, monitor.

Late blight, any visible damage. Pull immediately. Late blight spreads catastrophically once it shows. We recommend pulling right away rather than trying to treat it, because organic treatments rarely catch up to the spread once late blight is visible. Pull, bag, dispose.

Bacterial wilt (signs of clogged vascular transport, plant wilting even when watered). Pull immediately.

Cucurbits (squash, cucumbers, melons).

Powdery mildew on cucurbits. Treat. Powdery mildew on squash and cucumbers rarely kills the plant outright, especially if you keep newer leaves clean and the plant still has enough healthy leaf area to support fruiting. Plenty of plants finish the season productively even with significant mildew on the older leaves.

Bacterial wilt on cucurbits. Pull immediately. Bacterial wilt on cucurbits spreads through cucumber beetles, so removing the affected plant fast also removes a vector.

Solanaceous family (tomatoes, peppers, eggplant, potatoes).

Always rotate. Even if you save a plant from disease, don't plant the same family in that bed the next year. Rotate to a different family for at least a year, longer for the more soil-persistent diseases.

Brassicas (cabbage, broccoli, kale, collards).

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Black rot. Bacterial. Pull immediately. Don't compost.

Clubroot. A soil-borne pathogen that swells and distorts the roots. Pull, and don't plant brassicas in that bed for several years. The pathogen persists in the soil.

The four habits that prevent most disease

Most disease prevention isn't spraying. It's the work you do all season to keep the conditions inhospitable to disease in the first place.

1. Water at the soil, not the leaves

The single highest-leverage habit. Drip irrigation, soaker hoses, or careful hand-watering at the base of plants. Wet leaves overnight is what most fungal disease needs to take hold.

If you use overhead watering, do it early in the morning. That way the leaves have all day in the sun to dry off before evening.

Morning watering, dry leaves by nightfall. That's one of the rules we come back to most often.

It applies in summer for disease prevention and in winter for cold-night protection. Same rule, same reasoning.

For tomatoes and melons specifically, the rule gets stricter. Those crops are especially susceptible to disease with wet leaves. Drip or soaker hose only, never overhead, if you can possibly avoid it.

2. Mulch heavily

A 4 to 6 inch layer of straw, hay, leaves, or wood chips on top of your soil does three jobs at once.

It keeps soil moisture even so plants aren't stressed by drought-then-flood cycles.

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It prevents soil from splashing up onto lower leaves during rain or watering, which is how blight and septoria move from soil to plant.

And it slowly feeds the soil as it breaks down.

A thinner 2 to 3 inch compost layer also works, especially over a stale-seed-bed prep where the surface is already weed-suppressed. Either way, the principle is the same. Never leave the soil bare around your plants.

One caveat. Wood chips work as mulch on top of the soil, but don't till them into the soil. Wood chips tilled in tie up nitrogen for months while the chips break down. Same with leaves if worked in close to planting time.

3. Build the soil

Healthy soil grows healthy plants, and healthy plants resist disease. The short version of what we teach in the soil class:

Add compost every year. Even a thin layer makes a real difference over time.

Plant cover crops in the off season so something is always growing in your beds.

Keep the soil covered with mulch or living plants. Bare soil bakes in the sun and the microbiology underneath dies off.

Disturb the soil as little as possible. Heavy tilling destroys soil structure, brings up weed seeds, and breaks the fungal network that feeds your plants.

Grow more than one kind of plant in the same bed when you can. A diverse root system feeds a diverse soil microbiome.

Take your local conditions into account. The shape of your soil work depends on where you live.

The test we use for whether the soil is in good shape: pick up a handful.

You want soil that crumbles in your hand, kind of like a crumbly chocolate cake texture.

If it compacts into bricks or sifts to powder, the structure is off. And disease pressure is one of the prices you end up paying over the years.

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We also lean on the six soil-health principles, which we walk through in detail in the soil class. They're the spine of how we think about prevention.

4. Rotate

Don't plant the same family of plants in the same bed two years in a row.

Tomatoes, potatoes, peppers, and eggplant are all in the same family (Solanaceae) and they share diseases. Move them around the garden each year.

The squash family (zucchini, cucumbers, melons, pumpkins) is the same idea. Brassicas (cabbage, broccoli, kale, collards) too.

We had an example of this years back. We planted potatoes in a certain spot and the first year was fine.

The next year we were trying to work out the rotation for all the different crops, and the best we could do was to grow the potatoes in the same place again.

The second year was a serious problem in exactly that location. The pests and diseases were waiting in the soil for the host crop to come back.

Lesson learned. Move the crops.

What we don't recommend

Don't reach for a chemical fungicide as the first move. It treats the symptom, not the cause. And the trade-offs with copper and sulfur sprays specifically can build up toxicity in the soil over time and damage the beneficial soil microbiology, which leaves the garden more vulnerable to disease, not less. Start with the organic options above.

Don't water at night. Wet leaves overnight, plus warm humid air, invites most of the diseases on the list above.

Don't ignore early signs. A plant with three diseased leaves is fixable. A plant with thirty is usually too late. Catching disease early, ideally in the first day or two after it shows, is what makes the difference.

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Don't blame the seeds. Most diseases are environmental, not a seed problem. Buy from reputable suppliers and focus on soil, watering practice, and spacing.

A weekly walk-through

Once a week, walk your garden. Every day if you can swing it.

The footsteps of the farmer are the best fertilizer.

When we get out and walk the beds, we catch problems while they're still fixable. When we get busy and skip a week, the problems get bigger. We don't always catch every disease in time either, nobody does, but the more often you walk, the smaller the misses.

When you walk, look at:

The lower leaves of every plant. Disease usually starts at the bottom and works up. Yellowing, spots, or wilting get caught here first.

The top sides AND the undersides of leaves. Disease and pests both like the undersides. Flip a leaf.

The stems near the soil. Damping off, stem blight, and rot show up here first.

The soil surface. Cracking? Constant moisture? Strange growths? Each tells you something about drainage and disease pressure.

A few minutes of looking, often enough, catches disease in the window where it's still fixable.

Fungal disease can reproduce in 24 to 48 hours given the right temperature and moisture, which is why active monitoring matters so much.

The investment is in being an active gardener. Looking with your own eyes. Catching the problem on its first day rather than its tenth.

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One more thing

If you take just three habits from this guide into your garden, you will run into a fraction of the disease pressure most home gardeners deal with.

Water at the soil. Mulch heavily. Walk the beds once a week.

That's most of the work, right there.

You can grow. We're rooting for you 😄

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