



Garden Triage: What's Actually Wrong With Your Plant?

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Start here: the bug is usually not the problem

Years of walking our own beds has taught us something that keeps surprising people.

The bug is a symptom that the plant is stressed. A healthy plant on healthy soil resists most of what shows up in the garden.

So the first question when you walk up to a plant with a few bug holes isn't "what bug is this so I can kill it?"

The first question is "is this plant stressed, and why?"

That reframe changes the order of the questions.

It's easy to reach for a pest spray when heat was the real culprit. Or water more when the soil is already soaked. Or pull a plant that would have come back on its own.

So the idea here is to run a quick check BEFORE you act, so you act on the right thing. Walk to the plant, run through it, then decide.

It takes about 30 seconds. Depending on where you live and what's in front of you, you may land on the answer faster.

Some days the answer takes a closer look, and that's fine. Most days, this does the work.

The five buckets most garden problems fit into

Plant trouble quite often lands in one of five families. Get the family right and the action is obvious.

Bucket	What it looks like at a glance	What it needs
Pest	Holes, chewing damage, visible insects, eggs, sticky residue	Pest identification, then a targeted response
Disease	Spots, patches, fuzzy growth, wilting that doesn't recover overnight	Disease identification, airflow, and infected-leaf removal
Heat stress	Crispy edges, midday wilt that comes back at dusk, blossom drop	Shade and deeper watering before peak heat
Watering	Wilting in wet soil, wilting in dry soil, yellow leaves with no other signal	Adjust frequency and depth, check drainage
Nutrient Deficiencies	Yellowing or discoloration of leaves, stunted growth	Side dress or amend the soil with a natural organic fertilizer or well finished compost

A plant on depleted soil is the one that gets the pest, the disease, the heat scorch, and the water stress first.

So if you keep landing in one of the first four buckets year after year on the same crop, the deeper move is to feed the soil. Good soil should resemble a "crumbly chocolate cake," and that's a year-by-year build, not a one-day fix.

Question 0: can you leave it alone?

Before you do anything, ask whether this even needs you.

Honestly? What we keep coming back to in our garden is working with nature, not fighting it. Letting the beneficial side of the garden do its job when it can.

Leave it alone when:

- A young leaf has a few holes and the plant otherwise looks strong. A healthy plant can lose some leaves and still bring you a harvest. Almost all of what's in your garden is either neutral or actively helping. The few real pests rarely take down a healthy plant by themselves. Joe Lamp'I made that point well when he joined us on the Seed to Harvest Summit one year.
- You spot a few aphids on new growth and nothing else. Lady beetle larvae, lacewings, and parasitic wasps usually arrive on their own once a food source is present in the garden, as long as you haven't sprayed broad-spectrum. Plant it, and they'll come. The aphids are the food source for the ladybugs. Look these helpers up before you touch them. You'd be surprised how often the bug you're about to spray is actually working for you.
- A couple of hornworms or beetles on a healthy plant. Pick them off as you find them and drop them in soapy water. The threshold to think about escalating, for something like hornworms, is when you find more than one in a single check. Even at that point, the next step is to look for parasitic-wasp cocoons on the worms before reaching for anything stronger.
- A plant wilts at midday in real heat and comes back to firm by morning. That's normal summer stress, not a problem.
- A hornworm has white sacs on its back. Those are braconid wasp cocoons. Leave that worm alone and the next wave of wasps comes from your own garden.
- Greens have bolted in heat. The plant is done. No spray fixes bolting. Pull it, succession plant for fall.

And one more option that often saves the day: ask a gardener with more years on a garden than you.

Post a photo in the Seedtime community, or send it to a friend who's been growing for a while. Most experienced gardeners have already seen whatever you're looking at 😊

Patience saves more plants than action does, in many cases.

The biggest mistake at this step is panic-spraying. It knocks out the natural pest controllers along with whatever you were aiming at, and leaves the underlying stress untreated.

If the plant clearly needs you, keep going.

Step 1: read the symptom

Pick the closest match.

Symptom	Most likely family	Go to
Wilting	Could be several causes. Step 2 narrows.	Step 2A
Yellowing or discoloring of leaves	Most likely a nutrient or watering issue.	Step 2B
Holes in leaves	Pest.	Step 2C
Spots on leaves (white, brown, yellow, black)	Most likely disease.	Step 2D
Browning leaf edges (crispy)	Heat scorch or salt burn.	Step 2E
Sticky residue on leaves	Aphids or scale (look underside).	Step 2C, treat as pest
Stunted growth	Soil, root, nutrient, or watering issue.	Step 2F
Plant has flopped over	Root issue, wind, stem-borer, or stem break. Could be a disease issue.	Step 2G
Flowers fall without setting fruit	Temperature, water, or pollination issue	Step 2H
Dark sunken patch on bottom of fruit	Watering/calcium uptake issue	Step 2H
Cracking, splitting, or misshapen fruit	Watering or pollination issue	Step 2H
Curled, cupped, or distorted leaves	Pest, virus, or herbicide drift	Step 2C, then 2D
Mottled or mosaic leaf pattern	Viral disease	Step 2D
Silvery, stippled, or bronzed leaves	Sucking pests (mites, thrips)	Step 2C
Tunnels or squiggles inside leaves	Leaf miners	Step 2C

Symptom	Most likely family	Go to
Plant suddenly bolts to flower	Normal seasonal response	No action needed

Step 2: narrow it down

2A. Wilting

First, if the wilting plant is a squash, zucchini, or cucumber, flip a few leaves and look at the stem. Sap-feeding squash bugs and squash vine borers both cause wilt that the soil-moisture check won't catch. If you see clusters of yellow oblong eggs underneath, or adults on the leaves, jump to 2C. If you see a hole in the stem with sawdust-looking frass, jump to 2G.

Otherwise, stick your finger 2 to 3 inches into the soil right at the base of the plant.

- **Soil dry, plant wilting:** under-watered. Water deeply at the soil, not a quick sprinkle on top. If the plant wilts at midday but recovers by morning, that's normal summer stress. Water deeper next time and add mulch so the soil holds moisture longer.
- **Soil wet, plant wilting:** root rot, overwatering, or a soil-borne disease. Stop watering. Check the stem at the soil line. If the stem is soft or dark, the plant is likely lost. If the stem is firm, reduce watering and add mulch to even out the moisture. Wet conditions sitting for an extended period are where root rot takes hold quickly, something Spencer Scott walked us through on the Summit one year.
- **Soil moist, plant wilts mid-day and recovers at night:** heat stress, not a watering problem. Provide afternoon shade. Water deeper before the heat hits, not during it.

2B. Yellowing or discoloration of leaves

- **Lower (older) leaves yellow first, working up the plant: nitrogen deficiency.** Nitrogen is mobile in the plant - it gets pulled out of older leaves and sent to new growth, so older leaves yellow first. Side-dress with compost, well-finished manure, blood meal, feather meal, fish meal, or a balanced organic fertilizer. Fast fix: dilute fish emulsion as a foliar feed or soil drench.
- **All leaves uniformly yellow, plant looks pale:** could be nitrogen, could be overwatering, could be cold soil early in the season. Check soil moisture first (see 2A). If wet, hold off watering and let it dry; if dry and the weather has been cool, give it time to warm up before assuming a nutrient issue. Overwatering can temporarily cause nutrient uptake problems that mimic nitrogen deficiency.
- **Older leaves yellow with brown edges or scorched margins, often with spotting between veins: potassium deficiency.** Work in an organic fertilizer that supplies potassium, such as kelp meal, greensand, sulfate of potash magnesia (langbeinite), composted plant materials, or small amounts of wood ash if soil pH is low. Common on sandy soils and in heavy-fruiting crops like tomatoes and peppers.
- **Older leaves yellow between the veins while veins stay green (interveinal chlorosis on older leaves): magnesium deficiency.** Classic look on tomatoes, especially during heavy fruit set. Fastest fix is a foliar spray of Epsom salts (1 tablespoon per gallon of water), which absorbs through the leaves within days. For long-term correction, the choice depends on your soil pH: if pH is below 6.0 and calcium is also low, dolomitic lime corrects both. If pH is already in the right range, use Sul-Po-Mag (langbeinite) - it supplies magnesium, potassium, and sulfur without significantly raising pH. Don't add lime to soil that's already at proper pH; it'll push pH too high and create new problems.
- **New (upper) leaves yellow between the veins while veins stay green: iron deficiency.** Iron is immobile in the plant, so deficiency shows up on new growth first. Usually a soil pH problem rather than an actual iron

shortage - iron becomes unavailable in alkaline soil (pH above 7). Test pH first; if high, improve soil biology and buffering with compost, and use elemental sulfur where pH reduction is needed.

- **New leaves pale, small, distorted, or with dead growing tips: calcium deficiency** (or more often, inconsistent water preventing calcium uptake). The famous downstream symptom is blossom end rot on tomatoes, peppers, and squash. Real fix is consistent watering and mulch, not adding calcium. Many soils already contain adequate calcium; inconsistent watering more often limits uptake - the plant just can't move it during drought stress. Long-term, gypsum or lime (depending on your pH) addresses true deficiency.
- **New leaves yellow overall (not just between veins), often with stunted growth: sulfur deficiency.** Less common, but looks similar to nitrogen deficiency except it shows on new growth instead of old. Compost and most organic fertilizers supply adequate sulfur.
- **Purple or reddish tint on undersides of leaves and stems, especially on young plants in cold soil: phosphorus deficiency** (or cold soil locking out phosphorus). If it's early season and soil is cold, wait it out - uptake resumes as soil warms. If persistent, add bone meal, rock phosphate, or composted manure.
- **Yellowing plus tiny insects on the undersides: aphid feeding damage.** Treat as pest (2C). Aphids often target stressed, overly lush, or nitrogen-heavy growth. Correcting watering and fertility issues can help reduce future infestations, but active infestations may still require control measures.
- **Yellowing plus brown spots with defined edges, halos, or fuzzy growth: likely fungal or bacterial disease.** Treat as disease (2D).

2C. Holes in leaves (pest)

Look at the underside of the leaf. Look at the soil around the plant. Look at the stem.

- **First check, before any pest call:** is the insect you're looking at actually a beneficial? A lady beetle larva looks nothing like the adult ladybug. It's long, segmented, dark with orange markings, completely different from the round red-and-black adult, something Joe Lamp'l showed us on the Summit. A beneficial-insects photo reference is worth having on hand for lacewings and other helpers most gardeners don't recognize. Once you're sure it's not a friend, keep going.
- **Visible insects you can see with your eye:** identify them. A pest field guide with photos will let you match what you're seeing in seconds.
- **No visible insects but holes:** likely caterpillar, slug, or snail (active at night). Check at dawn or dusk. Look for slime trails (slugs and snails) or dark insect droppings, what we call frass, on the leaves (caterpillars).
- **Holes with chewed, ragged edges, large:** likely caterpillar.
- **Holes with smooth edges, small and round:** likely flea beetle. Worth knowing: we've seen a side-dressing of compost or organic fertilizer on flea-beetle-eaten eggplants bring the plants back in a couple weeks. The bugs were not the problem, the soil was.
- **Whole leaves stripped:** likely larger caterpillar (hornworm) or a beetle in numbers.
- **Yellow oblong eggs in tidy rows on the underside of squash or cucumber leaves:** squash bug eggs. Crush them or lift them with a strip of duct tape, sticky side out, before they hatch.
- **Sticky residue on the leaves, white flies underneath:** aphids or whiteflies. Check watering first; aphids often show up on plants stressed by lack of water, and hydration alone can resolve the lighter cases. For whiteflies, the flies are usually under the leaf, so spray underneath if you spray. Effective control requires good coverage of the undersides where whiteflies congregate.
- **Silvery, stippled, or bronzed leaves rather than actual holes:** spider mites, thrips, or leafhoppers - sucking pests, not chewers. Check undersides with a hand lens. Spider mites often leave fine webbing; thrips leave tiny

black fecal specks alongside the stippling. Strong water spray dislodges mites; insecticidal soap can be effective on mites and some thrips, but less reliable on leafhoppers. Spider mites thrive in hot, dry, dusty conditions, so morning rinsing of foliage helps prevent them.

- **Curled, cupped, or distorted new growth:** often aphids (check undersides) or, less commonly, broad mites or thrips on the growing tips. If no pests are visible and the distortion is severe with strappy, twisted growth, consider herbicide drift rather than pest damage.
- **Squiggly white trails or tunnels inside the leaf itself:** leaf miners - larvae feeding between the upper and lower leaf surfaces. Damage is usually cosmetic on established plants. Pick off affected leaves; row cover prevents the adult flies from laying eggs. Sprays don't reach the larvae inside the leaf.
- **Young transplant chewed through at the soil line, often found flopped over in the morning:** cutworms. Place a collar (cardboard tube, tin can with ends removed) around each transplant stem, pushed an inch into the soil. Check at night with a flashlight to find them.
- **Galls or knotty swellings on roots, found when pulling a stunted plant:** root knot nematodes. No quick fix - rotate to less susceptible crops such as corn or small grains, and use resistant varieties where available. Plant resistant varieties, and grow a cover crop of marigolds (*Tagetes patula* 'Nemagold' or similar) or mustard to suppress populations over time.

Once you've got an identification, reach for our three-step NOW formula: Nuke them (naturally), Organically fertilize, Water it in well. That's the sequence I reach for when the population has actually gotten ahead of the beneficials and a targeted response is the right call.

2D. Spots on leaves (disease)

- **White or gray powdery patches on top of leaves:** powdery mildew. Improve airflow. Remove worst leaves. The standard fungistatic is a baking-soda spray, a quarter cup of baking soda to a gallon of water with two to four drops of dish soap. Spencer Scott shared the recipe with us on the Summit one year.

- **Brown or black spots with concentric rings (target pattern):** early blight (tomatoes, potatoes). Remove infected leaves. Mulch to prevent soil splash. Water at the soil only.
- **Many small brown spots with light gray centers and dark borders:** septoria leaf spot (tomatoes). Same treatment as early blight.
- **Yellow spots that turn brown, with fuzzy gray growth on the underside:** downy mildew. Improve airflow. Remove worst leaves.
- **Orange or yellow rust-colored pustules on undersides:** rust fungus. Remove infected leaves. Prevent leaf wetness.
- **Mottled or mosaic pattern on leaves (irregular light and dark green or yellow patches, often with leaf distortion):** viral disease. No cure. Remove and destroy the plant - do not compost. Wash hands and tools before touching other plants. Many viruses are spread by aphids, thrips, or whiteflies, so controlling those pests helps prevent spread. Tobacco mosaic virus is also spread by gardeners who use tobacco products; wash hands before handling plants.
- **Seedlings flop over at the soil line with a pinched, threadlike stem:** damping off. Fungal disease of seedlings caused by overly wet soil and poor airflow. No fix once it starts on a given seedling. Prevent by using fresh potting mix, watering from the bottom, providing good airflow, and not overwatering. A small fan running gently across seedlings dramatically reduces incidence.
- **Galls or swellings on roots of brassicas (cabbage, broccoli, kale) with stunted, wilting plants above:** clubroot. This long-lived soilborne disease can persist in soil for many years. Remove and destroy infected plants rather than composting them. Raising soil pH to about 7.2–7.5 with lime helps suppress the disease. Rotate brassicas out of the area for at least 4 years, and longer after severe outbreaks.

Each of these has a specific response, the conditions that invite it in, and a moment where the right call is to pull the plant rather than treat. The per-disease detail is worth looking up when you've got a confirmed match.

2E. Browning leaf edges

- **Just the edges, plant otherwise green:** heat or sun scorch. Use shade cloth at peak hours, water deeper early in the morning, and pick heat-tolerant varieties for next season.
- **Spreading inward from the edges, yellowing first:** salt burn (over-fertilization or hard-water buildup). Flush the soil with extra water. Reduce fertilizer next round.
- **Edges brown plus spots elsewhere:** combo of heat plus early disease. Treat the disease first.

2F. Stunted growth

- **Plant looks healthy but is just small:** could be transplant shock (which usually passes), soil compaction, or low fertility.
- **Plant pale and small:** nitrogen deficiency. Add compost or finished manure.
- **Plant small with lower leaves yellowing:** nitrogen deficiency confirmed. Side-dress with compost.
- **Plant small with roots that struggle to penetrate (you'd see this when transplanting):** soil compaction. Loosen the soil and add organic matter. This is the year-over-year crumbly-chocolate-cake build we keep coming back to, not a one-day fix.

2G. Plant has flopped over

- **Flopped at the soil line, base soft:** damping off (in seedlings) or stem rot. Plant likely lost. Remove and discard. Check drainage.
- **Flopped but the stem is still firm:** wind damage or top-heavy growth. Stake the plant. It may recover.
- **Flopped with a hole in the stem:** stem-boring caterpillar, the squash vine borer is the common one. There's a surgical recovery that works well: slit the stem lengthwise, find the borer, remove it, then mound soil over the slit so the plant can root above the damage. Plants often come back this way. Michael Kilpatrick walked us through it on the Summit one year.

2H. Flower and fruit problems

Flowers and fruit are where a lot of frustration lands, and the causes are usually different from the leaf-and-stem problems above. Most of these are physiological - temperature, water, or pollination - rather than pest or disease.

- **Flowers form but drop before setting fruit (tomatoes, peppers, beans, squash):** usually temperature stress. Common when daytime highs exceed the mid-80s, nights stay above 70°F, or nights drop below 55°F. Also caused by water stress, excess nitrogen, or low pollinator activity. Usually resolves once temperatures moderate; consistent watering and easing back on nitrogen help. For squash specifically, male flowers often appear a week or two before female flowers early in the season - this is normal, not a problem.
- **Dark, sunken, leathery patch on the bottom (blossom end) of tomato, pepper, or squash fruit:** blossom end rot. Usually caused by inconsistent watering preventing calcium uptake, not by low soil calcium. Mulch heavily, water deeply and consistently, and avoid heavy nitrogen applications during fruit set. Affected fruit won't recover, but subsequent fruit will usually be normal once watering stabilizes.
- **Fruit cracks or splits, often on top or in concentric rings around the stem:** sudden water uptake after a dry stretch, usually after heavy rain. Mulch and consistent watering prevent it. Harvest cracked fruit promptly before it rots or attracts pests.
- **Misshapen, lumpy, or "catfaced" fruit (especially tomatoes):** cold nights during flower formation, poor pollination, or thrips damage to the developing flower. Usually a first-of-the-season problem that resolves as nights warm.
- **Pale, papery, sunken patches on the sun-facing side of fruit:** sunscald. Happens when fruit that was previously shaded suddenly gets direct sun, often after heavy pruning or after disease has defoliated the plant. Avoid over-pruning; address whatever caused the defoliation.

- **Flowers form but no fruit develops (cucumbers, squash, melons):** pollination failure. Cucurbits need bees to move pollen from male to female flowers. Low bee activity (heat, rain, pesticides) is the usual cause. Hand-pollinate with a small brush, or pick a male flower and dab it into female flowers (the ones with a tiny fruit at the base). Planting flowers nearby to attract pollinators helps long-term.
- **Plant suddenly sends up a tall flower stalk and stops producing edible leaves or roots (lettuce, spinach, cilantro, brassicas, radishes):** bolting. Triggered by heat, day length, or stress. Not a problem to fix - harvest immediately if you can still use it, or let some plants flower for beneficial insects and seed saving. Switch to heat-tolerant varieties or shift the planting window to spring and fall.
- **Tomato fruit stays green and won't ripen, or ripens unevenly with yellow or green shoulders:** extreme heat (above the mid-90s) shuts down lycopene production, leaving fruit pale where it should be red. Provide afternoon shade during heat waves; pick fruit at the "breaker" stage (first blush of color) and finish ripening indoors on the counter, which produces normal color.

Step 3: match the cause to the action

Before you do anything, confirm:

If the cause is...	Don't...	Do...
Heat stress	Spray for pests	Provide shade. Water deeper before the heat hits. Mulch heavier.
Pest damage	Increase fertilizer or water before identifying	Identify the pest. Target with the right response.
Disease	Spray broad-spectrum	Improve airflow. Remove infected leaves. Water at the soil only.
Nutrient deficiency	Pull the plant	Side-dress with compost or the right amendment.
Overwatering	Water more	Stop watering. Improve drainage. Mulch.
Underwatering	Spray for pests	Water deeply at the soil. Mulch.

What can easily happen again and again: someone treats a heat or watering issue as a pest issue, and reaches for a spray.

The spray takes out the lady beetle larvae, the lacewings, and the parasitic wasps that would have managed the next real pest wave. The plant still carries its original stressor.

Now you have two problems instead of one.

When to step back and wait (the extended version)

Some signs of stress aren't worth treating immediately. What we keep telling people: don't worry about it. Watch and let nature balance.

- **Wilting at midday in 95 degree heat that recovers by morning.** Normal. Don't react.

- **Light aphid pressure on a few new leaves.** Beneficials usually arrive on their own once they have a food source. Wait.
 - **A handful of holes in a healthy mature plant.** Most of the insects in any garden are either neutral or doing real work for you; the small number of actual pests rarely take a healthy plant down on their own.
 - **Hornworms with white braconid wasp cocoons on their backs.** Leave them. The wasp larvae are inside, eating the worm from the inside, and they will hatch out to kill the next generation of hornworms.
 - **Bolting greens in heat.** The plant is done. No treatment fixes bolting. Pull, replant for fall.
 - **A few flea beetles on eggplant.** Try side-dressing with compost first. We've watched flea-beetle-eaten eggplants put on new growth and stop attracting beetles within a couple weeks, just from the soil bump.
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When to pull a plant

Sometimes the right call is pull, not treat. Here's what to check for:

- More than half the plant is affected.
- The disease has spread to the main stem and won't recover from cutting back. Bacterial diseases especially are very difficult to manage organically once they reach the stem; verticillium and similar vascular wilts also typically can't be saved.
- Late blight has been confirmed. Pull right away, before it spreads. Late blight calls especially deserve a careful look at the symptoms before you commit to pulling.
- The plant is in late season and has produced what it's going to produce.
- The plant has been treated and is still showing the same damage on new growth.

Pulling fast prevents disease spread to neighbors and frees the bed for a succession crop. Bag and trash. Don't compost diseased material.

The 30-second protocol

1. Walk to the affected plant.
2. Ask Question 0. Does this need you at all?
3. If yes, read the symptom (Step 1).
4. Run the narrowing question for that symptom (Step 2).
5. Match the cause to the action (Step 3). Either act, wait, or pull.

Don't shotgun. Don't reach for the spray bottle on reflex.

Most plant problems have a simple cause, and you can find it in about 30 seconds if you ask the right questions in the right order.

A few minutes a day of looking catches almost anything in the window where it's still fixable. The footsteps of the farmer are the best fertilizer. Michael Kilpatrick made that one stick when he joined us on the Summit.

That's how a garden ends up the kind of garden a family can actually live with.

Less panic. More food on the plate. And a few more reasons to walk out there and see what's growing 😊

You can grow this.

Paul