What's Wrong With My Tomato?

By National Garden Bureau

What happens when our anxiously-awaited tomatoes disappoint with low yield, funky leaves, weird black splotches, or pre-nibbled orbs? Even the most vigilant gardener may suffer angst over tomato problems.

Problem #1: Blossom-End Rot (BER)

A nasty-looking, black, bruise-like, water-soaked area, typically on the blossom end (the side opposite the stem) of the tomato. The area grows and becomes sunken and leathery. In some cases, the exterior of the fruit looks fine, but the inner fruit is discolored. It often appears on the first fruits of the season. BER also affects peppers, eggplant, and squash.

Causes: Lack of calcium in the fruit. Many gardeners think that it's a lack of calcium in the soil that causes BER—which can be a factor. However, this physiological disorder results from a lack of calcium in the fruit.

Often, there's adequate calcium in the soil, but the plant's ability for calcium uptake and transport to the fruit is impaired. Drought stress and inconsistent watering cause root hair damage. Waterlogged soil, cold soil, high concentrations of ammonium, potassium, and magnesium in the soil...all of these factors can lead to blossom-end rot.

Solutions:

> Always test your soil before amending it to determine if it needs more calcium. If a soil test shows low calcium levels, add garden lime, bonemeal, or finely-crushed eggshells to the soil. If it does not show low calcium levels, don't add any!

> Check the soil pH. Most vegetables and fruit, including tomatoes, prefer a pH around 6.5.

> Avoid planting tomatoes too early, as cold, wet soil can damage roots and root hairs, leading to BER.

> Do not over-fertilize. Tomatoes are heavy feeders, but follow instructions on fertilizer labels, and avoid too much nitrogen.

> Irrigate plants evenly. Tomatoes like consistently moist—not soggy—soil.

Problem #2: Blossom Drop

Flower stems turn yellow, and flowers dry up and fall off—leaving a fruitless tomato plant. Blossom drop also affects peppers.

Causes: Blossom drop typically occurs during extreme temperatures: when it's either too hot or too cold.

Tomatoes prefer daytime temperatures between 70 to 85 degrees Fahrenheit. When summer temps soar over 90 degrees for several days in a row, and nighttime temps remain above 72 degrees, the pollen of self-fertile tomato plants can become non-viable. If pollination doesn't occur within several days of bloom, the flowers dry up and fall off.

When nighttime temperatures fall below 55 degrees, the cold temperatures stress the plant, which can also lead to blossom drop.

Humidity that's too high may make the pollen too sticky, or humidity that's too low may make it too dry, with both extremes leading to a lack of pollination.

Too much nitrogen in the soil increases vegetative growth but reduces flower formation.

Solutions:

> Wait to plant tomatoes until night-time temperatures are consistently above 55 degrees Fahrenheit.

> Test the soil before adding amendments.

> In hot climates, plant tomatoes where they receive a bit of afternoon shade.

> During heatwaves, cover plants with a 30% shade cloth.

> Water consistently, using drip irrigation.

> Select a fertilizer ideal for tomatoes. Avoid excess nitrogen.

Problem #3: Cracked Fruit

Concentric cracks that appear in a circle around the stem-end of the tomato, as well as radial cracks that form perpendicular to the tomato

stem. Primarily affecting the fruit cosmetically, diseases can also develop in areas with open cracks.

Causes: While uneven moisture is the prime culprit for causing cracks in tomatoes, many tomato varieties are simply genetically prone to cracking.

Solutions:

> Water plants consistently.

> Mulch tomato plants to maintain even soil moisture.

> Reduce watering as tomatoes near ripeness.

> Pick nearly-ripe tomatoes early if heavy rain is forecasted, allowing the fruit to finish ripening indoors.

Problem #4: Sunscald

White or yellow blisters develop on the side of the tomato facing the sun. Sunscald occurs most often on green fruit. The area may become papery, grayish-white, and flattened. Black mold can grow on the damaged area, causing fruit to rot.

Causes: Much like gardeners exposed to too much sun, tomatoes can also suffer sunburns. Sunscald occurs when the fruit is exposed directly to the sun, especially in hot weather. Over-pruned plants or lost foliage due to disease exposes fruit to the strong sun rays, blistering the fruit's skin and wall of the tomato.

Problem #5: Cat-Facing

Photo credit: UCCE Master Gardeners of Sacramento County

Brown creases and folds that form on the blossom end of the tomato create an unattractive but still edible fruit. The blossom scar becomes enlarged or perforated, and the fruit may become misshapen. Typically affects larger fruit, like beefsteak tomatoes.

Causes: Environmental conditions like long periods of cool daytime temperatures (60 to 65 degrees) and nighttime temperatures (50 to 60 degrees) can cause abnormal development of plant tissue between the style and ovary. Damage from thrips to the side of the pistil may be the culprit and soil that's overly rich in nitrogen can also lead to cat-facing, as well as overly aggressive pruning of the plant.

Solutions:

> Plant when the temperatures warm to avoid damage to flowers.

> Avoid excessive pruning.

> Test soil for excessive nitrogen and amend the soil as recommended.

Problem #6: Yellow, Spotty, Wilted Foliage

Lower leaves turn yellow, or the plant experiences an overall yellowing/wilting of foliage, which can lead to foliage drop.

Causes: Sometimes, despite your best care, you'll notice tomato leaves turning yellow, ugly brown spots popping up, or foliage wilting. It's frustrating because you can't see the culprits behind these attacks: they may be fungal, bacterial, or viral infections.

Early blight (Alternaria fungus), leaf spot (septoria fungus), bacterial canker, bacterial pith necrosis, or verticillium or fusarium wilt are some of the nasty nemeses that may be wreaking havoc in your garden.

Solutions:

> Remove and destroy yellow foliage if it's just primarily on the lower leaves.

> If the yellowing spreads upwards quickly and is accompanied by wilting, remove the entire plant to prevent the disease from spreading.

> Do not compost affected foliage or plant.

> Mulch around the plant to prevent soil from splashing onto the leaves.

> Rotate crops to avoid planting tomatoes in affected soil.

> Disinfect/wash containers and tomato supports to prevent the spread of diseases.

> Select disease-resistant tomato varieties. Look for varieties with multiple disease resistances, such as "Resistant to fusarium wilt (F), verticillium wilt (V), tobacco mosaic virus (TMV), nematodes (N), late blight (LB), and anthracnose (A)." Try Big Beef, or Celebrity.

Problem #7: Leaf Roll

Tomato leaves curl either up or down, instead of presenting normally.

3 Causes: Tomato leaf roll is tricky to diagnose because many factors can cause it.

1) Physiological leaf roll occurs due to cultural or environmental factors, such as excess moisture, too much nitrogen in the soil, insufficient phosphorus, heat, drought, severe pruning, root damage, early planting, and transplant shock. Initial symptoms present on lower leaves, with upward cupping of leaflets, followed by an inward lengthwise rolling toward the mid-vein. Leaves tend to thicken into a leathery texture, but they retain a healthy green color. Over time, all leaves may be affected, but generally, physiological leaf roll has little impact on fruit production.

2) Viral infections are not so kind to your tomato plants.

> Tomato yellow leaf virus, which is transmitted by whiteflies, causes new leaves to become cupped and pale green. The entire plant may exhibit stunted growth, yellowing leaf edges, purplish veins on the undersides of leaves, and a decline in fruit production.

> Tomato mosaic virus also causes leaf rolling, along with the mottled coloring of leaves, small leaflets, and internal browning of infected fruit.

3) Herbicide damage can also cause leaf rolling, but with the leaves rolling downward. It may also cause twisted growth, stems may turn white and split, the fruit may be deformed, and the plant may perish. However, new growth may be normal.

Solutions:

Determine the cause of the leaf roll: physiological, viral, or herbicide.

> Physiological leaf roll: test soil for excessive nitrogen, and amend the soil as recommended based on the test; make sure soil drains well; water consistently with drip irrigation; avoid severe pruning; plant when temperatures are consistently warm; avoid damaging roots; harden off seedlings before planting in the garden.

> Viral leaf roll: remove surrounding weeds, which may host insects that transmit viral diseases; remove and dispose of infected plants, as there's no cure for tomato yellow leaf curl or tomato mosaic viruses; do not compost infected plants; disinfect tools and plant supports; practice crop rotation.

> Herbicide damage cannot be reversed, and the plant may ultimately die. However, if minimal exposure, the tomato plant's new growth may be normal. Remove dead portions of the plant. Protect future plants when spraying herbicides.

Problem #8: Nibbled Fruit

Something sampled the tomatoes in the garden.

Causes: Deer, birds, tomato hornworms, tomato fruit worms, slugs, snails, raccoons, opossums, so many culprits.

Solutions:

> Check plants daily for eggs and pests, then remove them.

> Attract beneficial insects to the garden with companion plants.

> Employ Integrated Pest Management methods to encourage predatory insects, like parasitic wasps, to visit the garden. Parasitic wasps use tomato hornworms as hosts for their eggs, effectively killing them as the larva hatches.

> Erect tall fencing (7 feet or more) around the garden to discourage deer.

> Use motion-activated sprinklers to discourage mammals and birds.

> Apply repellent sprays to discourage mammals. •