

## Pro Tips

### Weird Vegetable Problems:

#### Abiotic Disorders & How to Prevent Them - Susan Mulvihill



#### Introduction:

- Abiotic disorders a.k.a physiologic disorders
- Not caused by disease
- Caused from environmental stresses OR things we have (or haven't) done
  - Planting too early or too late
  - Cold weather, heat waves, etc.
  - Irregular watering
  - Excessive pruning
  - Too much fertilizer

#### Specific Abiotic Disorders:

##### **Bitterness:**

- Most commonly encountered with cucumbers, melons, lettuce and other greens
- Causes: high temperatures, irregular watering, summertime temperatures too hot for most leafy greens
- How to prevent: water regularly, pick cucumbers when they're young and at their most flavorful, hybrid cucumbers are less prone to this, mulch around salad greens, consider shade cloth to extend season

##### **Blossom-end rot:**

- Typically seen on tomatoes and other nightshade family crops as well as cucurbit family crops such as squash
- Cause: calcium deficiency in developing fruits
  - Plant roots require moisture in order to transport calcium from the soil up into the plants
  - Irregular watering makes it difficult for roots to do this
  - Another cause is the excessive use of nitrogen because this promotes leafy growth
- How to prevent: water your plants regularly, use mulch to help soil retain moisture, avoid using too much nitrogen, don't cultivate around roots because if they're damaged, they can't transport calcium

**Bolting:**

- Occurs with cabbage family crops, carrots, cilantro, lettuce
- Causes: cool-season crops can't handle the heat, some crops can't handle sudden cool temperatures, stressed plants (overcrowded, underwatered, not enough light, insect or disease problems)
- How to prevent: plant bolt-resistant varieties, plant cool-season crops at the right time, water regularly, mulch, 30% shade cloth can extend their season

**Buttoning:**

- The premature development of tiny heads on broccoli and cauliflower plants
- Causes: Sudden colder temperatures, infrequent watering, lack of nitrogen in the soil, weed competition, high salt content in the soil (from de-icers or water softeners)
- How to prevent: Make sure soil is 50 degrees F. before transplanting, start seeds indoors later so the plants are younger at transplanting time, water regularly, mulch soil, do feed plants with nitrogen, weed regularly

**Fruit-cracking:**

- Most common with cabbage, carrots, nightshade family crops (esp. tomatoes), watermelon
- The heads or skins split
- Causes: Rain or excessive watering after a dry period, root crops crack from too much moisture
- How to prevent: water consistently, mulch soil surface, 30% shade cloth during hot spells, don't over-prune leaves because they protect fruits from heat and too much light, some varieties are crack-resistant

**Leaf roll (a.k.a. physiological leaf roll):**

- Mainly occurs with tomato plants but can also impact beans, peppers, potatoes and watermelons
- Plants have thick, curled leaves
- Most common during unseasonably cool springs or during heat waves
- Cause: planting tomatoes or other warm-season crops too early
- How to prevent: Plant when the danger of frost has passed, protect plants with floating row cover if temperatures drop, water consistently, don't cultivate around plant's roots, protect plants with shade cloth during heat waves

**Sunburn (a.k.a. leaf scorch):**

- This affects the leaves of plants
- Most commonly impacts young seedlings of most vegetable crops
- Leaves turn white or brown and wilt
- Cause: failure to harden-off seedlings before transplanting them into the garden
- How to prevent: harden-off your seedlings
  - Process: Move seedlings outdoors to an area with filtered sunlight for 1 hour on day #1, then move them back indoors. On day #2, move them out for 2 hours and bring them back inside. For days 3-7, increase the amount of time outdoors by one hour each day and start exposing them to more sunlight each day. At the end of a week, the seedlings should be acclimatized to the intensity of the sun and outdoor temperatures.

**Sunscald:**

- This impacts the fruits on plants
- It most commonly impacts the fruits of cucurbit and nightshade family crops
- Papery-white patches on the skin of the fruits

- Cause: fruits have been exposed to intense sunlight. This can be caused by excessive pruning either from removing diseased foliage or “just because” you wanted to do a bunch of pruning!
- How to prevent: avoid over-pruning plant leaves since they help protect fruits from excessive amounts of sunlight. If removing diseased leaves, consider putting shade cloth above plants. Mulch the soil proactively to decrease the chance of pathogens splashing up onto the leaves of plants. Water your plants consistently.

### Tomato catfacing:

- Affects tomato fruits
- Fruits are deformed on the blossom end; scars, creases or small holes in fruits; brown corky tissue
- Theories about the cause: young seedlings exposed to cool temperatures below 54 degrees F.; excessive pruning of indeterminate varieties of tomatoes which affects flower development; too much nitrogen fertilizer; inconsistent watering; flower bud damage caused by thrips insects
- How to prevent: Don’t plant too early, watch the forecasts. Don’t over-prune indeterminate varieties; water regularly; look for resistant varieties (note that heirloom tomato varieties are more susceptible)

### More about Susan...

Susan Mulvihill is the longtime Sunday garden columnist for The Spokesman-Review newspaper in Spokane, Wash. In addition to the books below, she is also co-author of Northwest Gardener’s Handbook and has been a Spokane County Master Gardener for 21 years. Her YouTube channel has over 400 videos on a wide range of gardening topics. Susan’s goals are to get everyone to grow a vegetable garden and to use organic methods.

### Connect with Susan!

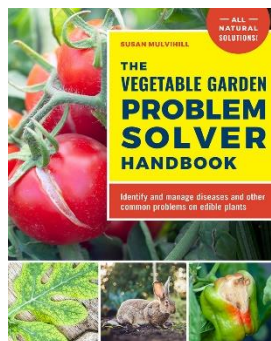
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### The Vegetable Garden Problem Solver Handbook, Cool Springs Press, 2023

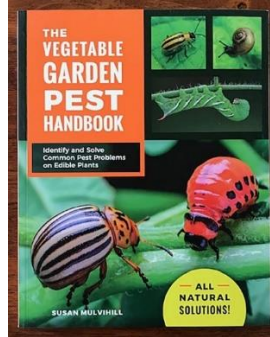


Susan’s newest book covers how to keep your vegetable plants healthy and productive; how to deal with plant disorders such as blossom-end rot and fruit-cracking; how to identify and deal with vegetable plant diseases organically; and strategies for keeping commonly-encountered critters away from your veggies. The information is geared toward gardeners of all levels so they can be successful at growing vegetables. Get your signed copy after my talk or send me an email ([Susan@SusansintheGarden.com](mailto:Susan@SusansintheGarden.com))!



## The Vegetable Garden Pest Handbook

Cool Springs Press, 2021



Your complete, easy-to-use guide to the most commonly-encountered vegetable garden pests! Learn about their life cycles, what they look like (over 200 photos!), which crops they bother, what their damage looks like, and choose organic products and strategies to control them. Discover which bugs are beneficial, which pests they prey upon, and how to attract more of these good guys to your garden. Pick helpful do-it-yourself projects to make traps, barriers, and even an insect hotel to attract the good bugs!

Get your signed copy after my talk or send me an email ([Susan@SusansintheGarden.com](mailto:Susan@SusansintheGarden.com))!