

EMGV CRIBSHEET #2: KEY QUESTIONS TO ASK WHEN DEALING WITH VEGETABLE PROBLEMS**1. Is this plant from a garden, or from a greenhouse?**

Some diseases and pests are only problems in greenhouse situations, others only outside.

2. When were these sown/transplanted?

This is a clue as to whether they are being grown in the proper season. You will also be better able to judge their growth rate. It is helpful to compare affected plants with healthy plants of the same age, to see if they have grown equally well.

3. When did the problem begin?

Different problems develop at different rates. Wilting due to nematodes is a gradual process, compared to the quick collapse caused by bacterial wilt or Southern stem blight. Be aware that the gardener may not have noticed the problem in the early stages.

4. What percentage of the crop is affected?

When all individuals are affected at more or less the same time, an abiotic (nonliving) stressor is often to blame. If some individuals are unaffected, ask whether there are any differences (age, site, cultivar, etc.) between those and the plants showing symptoms.

5. Are any other kinds of plants in the garden showing similar symptoms?

When multiple species are affected in a short period of time, it can be an indication that the fundamental problem is a cultural or environmental condition rather than an infectious disease.

6. If leaves are affected, is it worse on the newer leaves, the older leaves, or in between?

Deficiencies of mobile nutrients like nitrogen show up first in the older foliage. Symptoms of deficiencies of immobile nutrients like iron appear first in the new foliage. Fungal and bacterial diseases are often progressively worse as you move down the plant.

7. What is the pattern of damage in the garden?

Groups or clusters of affected plants may indicate a soilborne problem.

8. What does the stem of the plant look like?

Examination of the stem, including the base, may reveal decay, evidence of fungi (mycelium or sclerotia) or signs of insect activity (frass, feeding holes, etc.).

9. What do the roots look like?

Compared to healthy roots, are they contorted, bent, or broken? Do they look dark, wet, and rotted? Are there swellings that look like root knot?

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10. What does the fruit look like?

Knowing the combination of foliar and fruit symptoms can be helpful.

11. Were any fertilizers, pesticides, or other chemicals used in the area?

Some chemicals applied against certain pests, weeds and pathogens can cause damage to non-target hosts. Excess fertilizer can cause “soluble salt” damage.

12. Was compost or manure used on the garden? If so, what was the source?

Composted grass clippings from areas treated with certain herbicides – and even manure from livestock that consumed treated forage – can contain active residues of those herbicides. This is a rare but important problem.

13. Where is the garden situated?

Vegetables need lots of sun. Is this garden overly shady? Nearby trees and shrubs can also mean root competition. Low areas may get too much water. Proximity to walnut trees can result in toxicity from root exudates.

14. Do you see any webbing, holes, or other indirect evidence of insects or mites?

Although having a specimen is best for identifying a pest insect or arthropod, sometimes the creature is long gone or difficult to isolate. Holes can indicate a chewing insect; in these cases there is also often frass produced. Spider mites and moth larvae (Lepidoptera) often produce silk where they are active. Shed skins, feces, eggs and egg shells can also indicate an insect or mite pest and can sometimes be identified. Feeding damage is sometimes characteristic of the type of pest. Defoliation, skeletonization, leaf mining and discoloration are the results of different feeding strategies exhibited by different types of pests.

15. Have there been any unusual weather conditions lately?

Drought and heat stress, flooding, freezes, and hail can damage vegetable gardens. High ozone levels can lead to leaf flecking in sensitive plants such as potato and watermelon.

The more information the client can provide, the better will be the diagnosis and recommendations. It is a good practice to take notes as you go along, as these may be useful to anyone to whom you have to refer the sample.