

VEGETABLE GARDENING FOR BEGINNERS: PREVENTING PESTS SPEAKER NOTES

Slide #

Human Error Section

- 6 Disease resistant varieties are available, but only important if the diseases are a problem in your garden
- 7 **Distribute and discuss plant family handout** in light of the importance of crop rotation (at least 3 years before planting same family in same soil)
- 10 Hilling and mulch help retain moisture to prevent uneven growth and prevent sun from “greening” the potatoes.
- 11 Too much moisture can cause similar symptoms to too little moisture (left photo), as can certain disturbances to the vascular system of the plant, such as vine borer damage (right photo), or cucumber wilt
- 12 Moisture that fluctuates too widely may cause hollow heart in potatoes and blossom end rot on tomatoes.
- 14 Planting too early in low temperature may cause poor seed emergence or frost damage to plants. Unless severe, plants will often recover, but will certainly be set back. Peppers set out in temperatures that are too cool may drop their blooms and by the time they recover it may be too late to set fruit.
- 15 Consider planting for fall harvest for many cool-weather crops such as spinach and cauliflower (see Getting Started planting handouts)
- 16 Nutrient deficiency may be alleviated by side-dressing during growing season, if nutrients are applied at first sign of a problem. Definitely consider a compost and cover crop system to prevent in future years.
- 18-19 Plant death from all types of tillage is common, as is damage to leaves in presence of moisture which causes entry for various fungal disorders.
- 20 Tobacco mosaic virus is spread on hands of smokers and is very debilitating to tomatoes, potatoes, etc.

Disease Section

22-27 Preventive measures

29-33 Sanitation – remove affected parts (tomatoes) or entire plant

30 Zucchini spotted virus is obvious when symptoms show up as mottling on the fruit

31 Early virus symptoms on leaves include mottling and deformity of new leaves.

Insect Section

35 This truly is obvious – most insects aren't active in cool or downright cold conditions. The spinach marked by these hoops under the blanket of snow are completely free of leaf miners!

36 Although mulch is great for soil moisture, in some cases it creates perfect conditions for pests. Snails, slugs, and squash bugs all require the kind of cool shade provided by an organic mulch so remove the mulch if you have a problem with these

37 Don't make life easy for pests by planting them in monocrops. By mixing species in beds, it becomes more difficult for a pest to move from plant to plant or down the row laying eggs on everything as it goes

38 Some pests have plant preferences that may be grown as a trap crop which may then be treated or pulled and discarded once infested. Eggplant and Nicotiana are preferred by the Colorado Potato Beetle, for example

39 Certain varieties may actually be insect resistant. Bitter-free cucumber varieties are of little interest to the cucumber beetle that spreads bacterial wilt. Solid-stem squash such as butternut is less likely to suffer from squash vine borers than hollow types such as buttercup

40-45 Encourage and protect natural insect predators

44 Tomato hornworms are large and very destructive, but may be parasitized by wasps. Infected worms should be left alone, and in general some hornworm damage should be tolerated since the adult is the wonderful sphinx, or hummingbird, moth.

45 Although preying mantis aren't plentiful, they are the poster child for predatory insects. Lady Beetles, even the exotic Harmonia, eat many, many aphids, and the larvae of Lacewings (eggs shown on leaf blade in inset photo) are known as "aphid lions"

47-50 Physical barriers are a good preventative tool

49 Be sure to remove row covers at bloom for plants that need pollination

- 50 Check under row covers from time to time. The rutabaga shown was invaded by aphids under a row cover. The single large plant on top of the slide also had a sole lady beetle larva that protected the plant from damage.
- 52-56 Life stages of insects are important when handpicking to make the process more effective
- 57 Small amounts of damage, or the presence of a few insects, are not necessarily cause for all-out warfare. Learn to accept cosmetic damage this year, and develop a plan for prevention for next year if the problem seems to be escalating.
- 58 Whatever you do – don't overreact to the presence of insects. The majority aren't harmful, and many are actually beneficial.
- 59 Artichoke plant literally covered with black aphids in the morning. By afternoon, numbers had dropped considerably and close examination revealed the presence of several lady beetle larvae. No spraying was necessary!
- 60-62 Spraying general recommendations. As beginners, it is recommended that you ID the pest before you spray. Take samples to one of our help desks, or use the pest ID section of the Extension website. Once ID'd, follow recommendations for control
- 62 Often hard to find, Bt is a great organic tool for cabbage worm control. Since these pest numbers can build up quickly, it may be wise to have Bt on hand at the start of the season, rather than waiting for the pest to show up.
- 64 The same row cover used to keep insects out may be used to deter rabbits. Even lying flat on the ground it provides protection, since it gets caught in rabbit toenails and then don't like walking on it
- 65 Deer fencing needs to be 8 feet or more tall for full protection. Or a sloping fence like the one shown has been proven to optically look like a large barrier to the deer.
- 66 motion-activated water wands can prove effective where fencing isn't practical
- 67 motion will also scare birds for a time, but change the kind and position frequently since they will become used to scare tactics eventually
- 68 Racoons are best deterred using electric fencing, with the bottom wire 6" from the ground and the second wire 6-8" above that. A similar system, with additional wires at 36" above the ground may be used to deter deer. "Train" the deer to the electric charge by applying aluminum foil tags smeared with peanut butter around the top wire at 6' intervals.

- 69 Taste deterrents are available to protect plants. They can be effective, but must be applied before damage and after every rain. Read labels carefully and watch application times if using them on edible plants.
- 70 A final word about weeds – as discussed in “Getting Started”, weeds rob plants of light, moisture, and nutrients, in addition to harboring insects and diseases. In this slide, the unmulched part of the garden is so full of weeds it is very difficult to find the vegetable crops. Monitoring the crops for insect or disease is almost impossible.