



Extension FactSheet

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Fusarium Wilt of Vine Crops

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Several different species of *Fusarium*, a soil-borne fungus, cause wilting of watermelon, muskmelon, cucumber, squash, and other vine crops. In many cases the fungus-causing wilt in a particular crop is specific to that crop. These fungi are generally capable of surviving for long periods in the soil.

Symptoms

Wilting of older plants is often the first symptom of the disease. Before diseased plants totally collapse, however, they may begin to wilt during the hottest part of the day and recover during the night. Infected plants are often stunted and yellowed. Leaves often have dead areas which can mimic nutrient deficiencies. Stems of wilted plants when cut lengthwise at the soil line may show brown discoloration in the woody tissues immediately under the bark. Vines killed by *Fusarium* can be covered with pinkish-white fungal growth in wet weather.

Causal Organism

Fusarium oxysporum is well adapted to life in the soil. It can survive season to season in old diseased vines or it can live free in infested soil for many years in the absence of its host crop. The fungus grows at soil moisture and temperature favorable for vine crop growth. If the soil is very wet, infection is reduced. The fungus is stimulated to germinate when roots of susceptible



Figure 1. Section of a muskmelon field killed by *Fusarium* wilt.



Figure 2. Watermelon vines killed by *Fusarium* wilt. Early death of vines will not allow the fruit to mature properly.

host plants are growing nearby. It enters the plant through root tips or where some opening is present.

Control

1. Plant wilt-resistant cultivars whenever possible. Degree of resistance is influenced by the populations of the fungi in the soil, and which races are present.
2. Avoid introduction of the fungus into fields. Once soil is infested, crop rotation will be of little use because of the long-term survival of these fungi in soil. The fungus can be spread on equipment, tools, feet, and surface water contaminated with infested soil. Do not put compost on fields which has been made from diseased vines. Compost resulting from such piles will contain the fungus.
3. Crop rotations of three to four years may be helpful in lowering the amount of *Fusarium* in the soil. Since the types of *Fusarium*-causing wilt in a crop are generally specific to that crop it is possible to rotate between vine crops in infested soil.
4. In commercial production of vine crops, soil fumigation may be useful. For details see the Ohio Vegetable Production Guide (OSU Extension Bulletin 672).



Figure 3. Fungal growth and plant exudate can often be seen on infected stems during periods of prolonged wet weather.

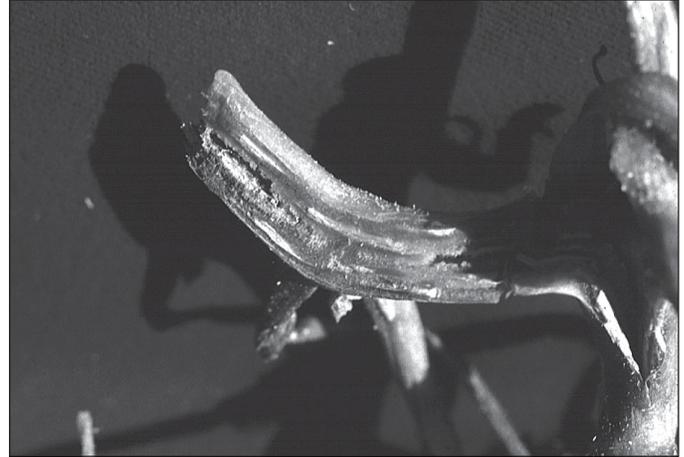


Figure 4. Section of a muskmelon stem infected with *Fusarium* wilt. The stem is cut lengthwise. Note the discoloration.

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