

Tips on Scouting for Pests and Diseases on Greenhouse Tomatoes



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http://ipm.uconn.edu/pa_greenhouse/

Aphids



Small, 1/16 inch long, round, soft bodied insects, feeding on the new terminal growth.

Hornworms



Tomato/tobacco hornworm is a large, green caterpillar with white lines or V's on side and "horn" on back. It may be covered with the white pupae of a parasitic wasp. If unchecked, defoliates plants, and produces large holes in tomato fruit.

Two spotted spider mites



Look for stippling or flecking and chlorotic areas on the leaves.

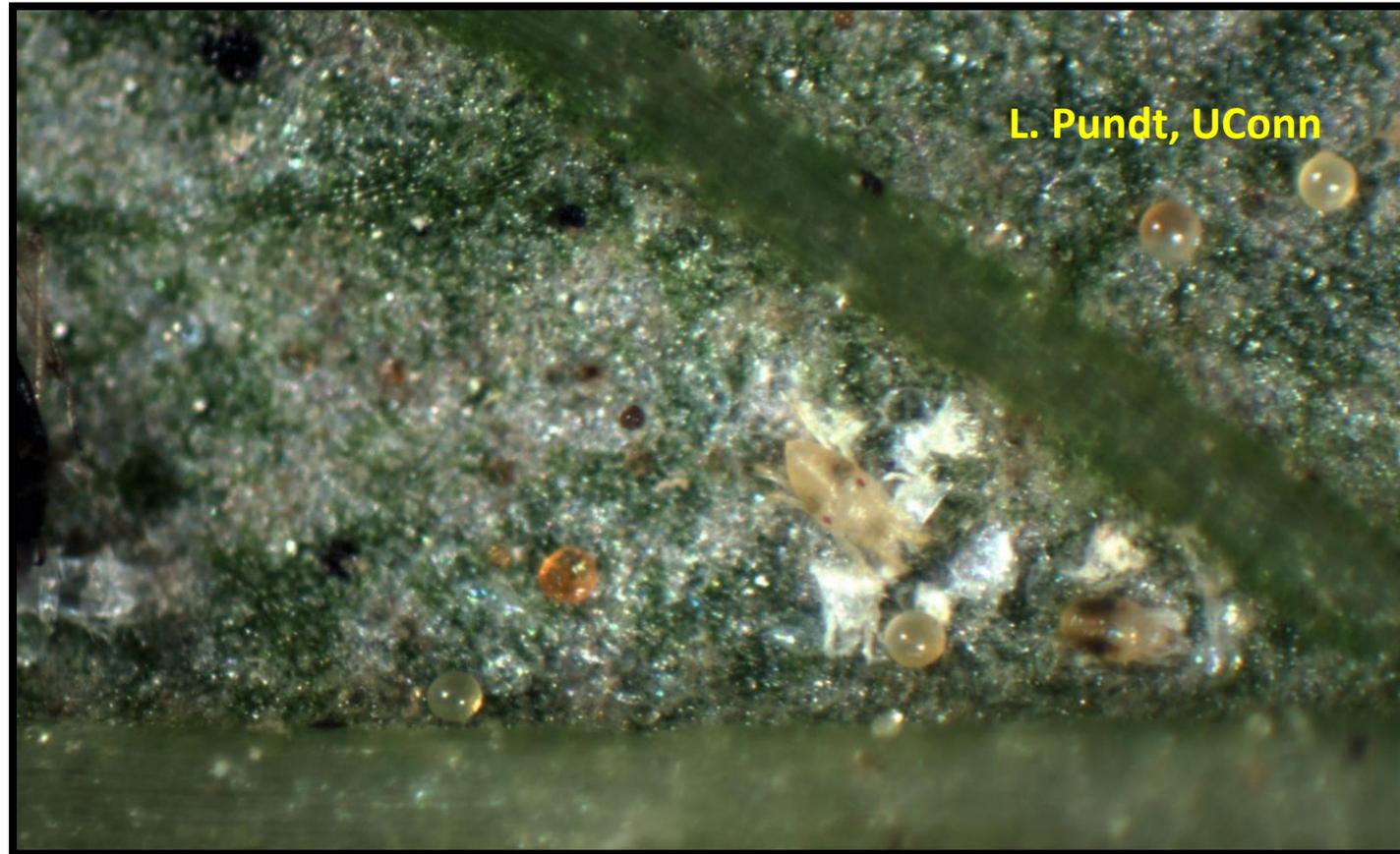
Two spotted spider mites



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Look for stippling, yellowing and webbing.

Two-spotted spider mites



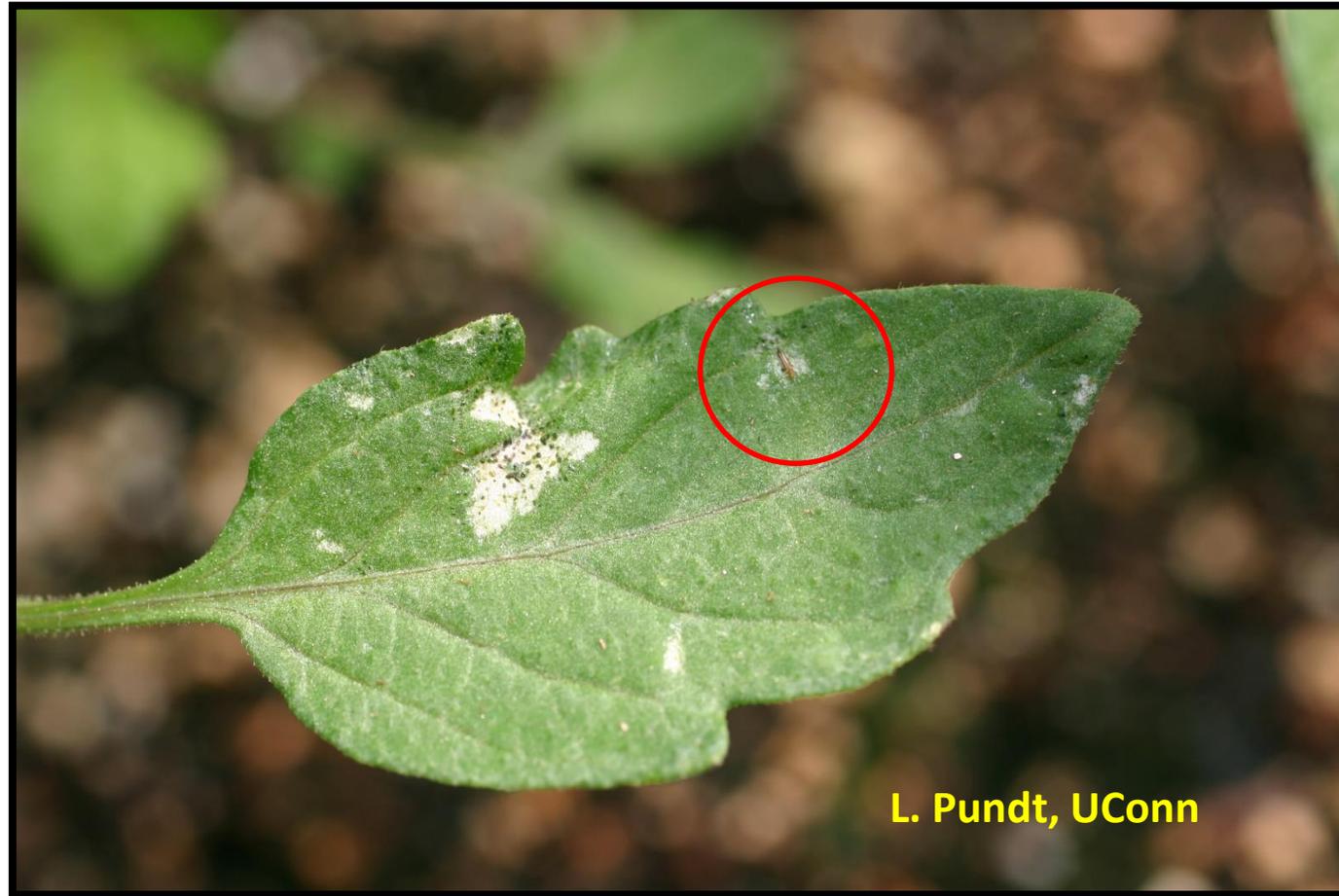
Look on underside of leaves, especially along the mid-vein, for small, 1/50 inch long, greenish to orange mite with characteristic two dark spots on either side of abdomen. Look for their round eggs.

Bean indicator plants



**Green beans used as an early indicator of two spotted spider mite feeding in a greenhouse tomato crop.
Note: stippling or flecking on the leaves.**

Thrips



Black fecal droppings and silvery appearance from thrips feeding. Adult thrips (within red circle).

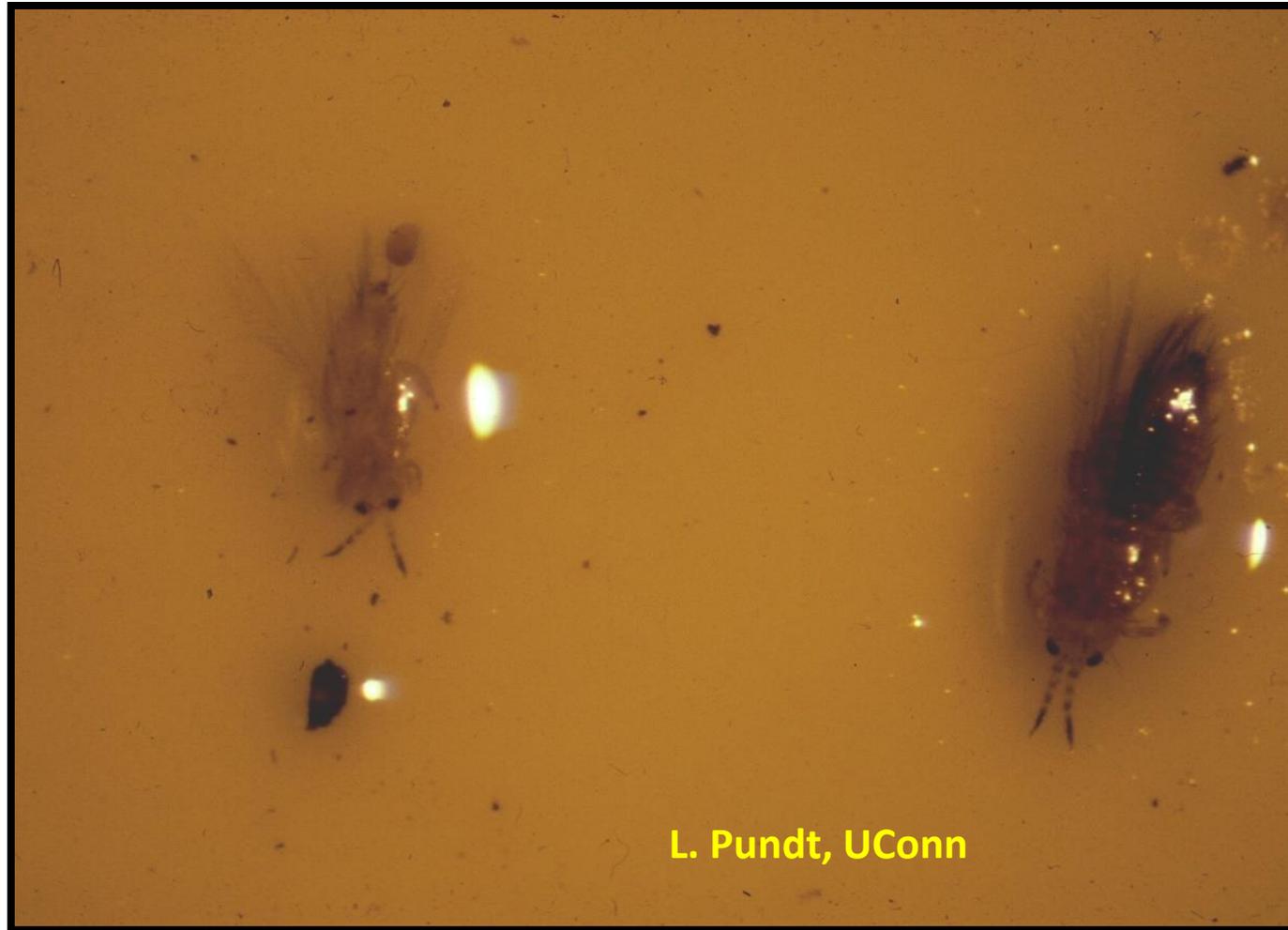
Thrips



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Black fecal droppings and silvery appearance from thrips feeding.

Thrips



**Male thrips on left & female western flower thrips on right
on yellow sticky card.**

Thrips



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Yellow, wingless thrips larva on underside of leaf.

Greenhouse Whiteflies



Small, (1/16 inch long) with clear, white powdery wings found on underside of leaves.

Greenhouse Whiteflies



Look for white pupae with straight elevated sides and a fringe of wax filaments around the edge on underside of leaves. Red eyes indicate they are ready to emerge as adults.

Greenhouse whitefly pupae



Greenhouse whitefly pupae infected by the beneficial fungus *Beauveria bassiana* on underside of leaf. Note brown discoloration. Place leaves in plastic bag to see sporulation of *Beauveria*.

Black sooty mold



**Damaging black sooty mold growing on honeydew
from greenhouse whiteflies.**

Encarsia formosa



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Encarsia formosa adult (within circle), a parasite of greenhouse whiteflies.

Encarsia



Parasitized greenhouse whitefly pupae with *Encarsia* are placed on cards that are hung on the plants.

Empty pupa of blackened greenhouse whitefly pupae from which *Encarsia formosa* has emerged.



Look for round emergence holes when parasitic wasps emerge

Diseases

Botrytis



Look for light tan lesions on lowermost leaves with characteristic line patterns.

Botrytis



Stubs covered with light gray Botrytis spores that develop during humid conditions.

Botrytis Ghost Spot



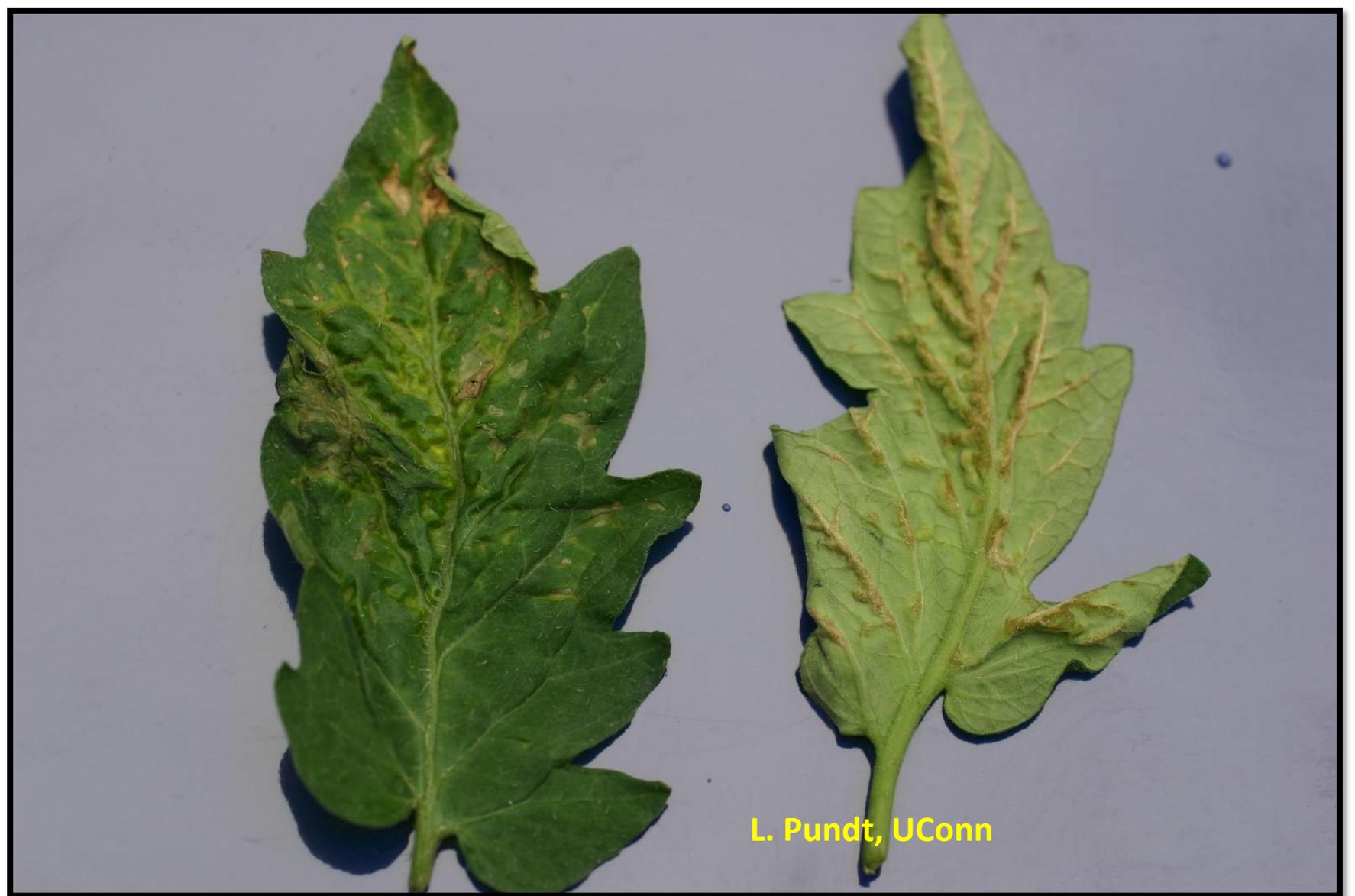
White rings or ghost spots develop after infection on green fruit. Disease progress is stopped by adverse environmental conditions.

Botrytis



Fruit rot develops during favorable conditions.

Edema



Necrotic spots & yellowing on the upper leaf surface and blisters on the lower leaf surface.

Edema



Look for blistered areas on underside of leaf, petioles or stems.

Fusarium Wilt



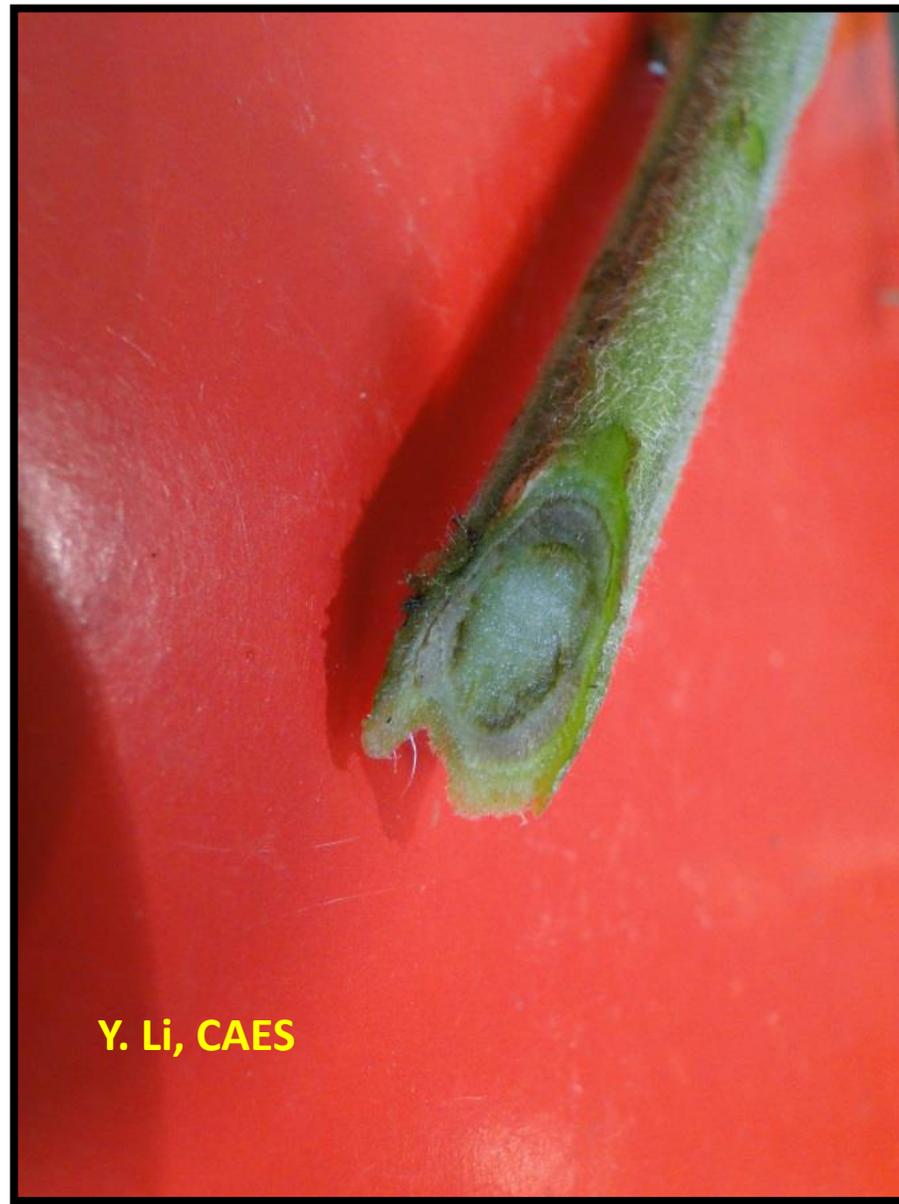
Wilted plant, showing yellow, chlorotic leaves.

Fusarium wilt



Brown, vascular discoloration in stem.

Fusarium wilt



Brown vascular discoloration in stem.

Leaf Mold



Look for pale green to yellow spots that develop on upper leaf surfaces, especially on lower leaves.

Leaf Mold



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Discrete masses of olive-green spores develop on the underside of lowermost leaves.

Powdery Mildew



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White, powdery spores on upper leaf surface.

Powdery Mildew



Infected leaves can desiccate and die.

Rhizoctonia crown rot



Plants may be stunted with yellowed lower leaves.

Rhizoctonia Crown Rot



Rhizoctonia crown rot, showing dry, brown stem lesions at the soil line.

Tomato Spotted Wilt Virus (TSWV)



Small, dark brown spots and black line patterns.

Tomato Spotted Wilt Virus (TSWV)



Dark brown streaks on stems and leaf petioles.

Tomato Spotted Wilt Virus (TSWV)



Discoloration of ripening fruit.

Impatiens necrotic spot virus (INSV)



Y. Li, CAES

Dark line patterns on leaves.

Late Blight on Tomato



Darkened, irregular, and water-soaked lesions on leaves or stems are typically seen on tomato seedlings affected by late blight.

Cat facing



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Scarring at the blossom end.

Blossom End Rot



Dark brown to black, depressed leathery area at the blossom end of tomato fruit.

Spray Injury



Phytotoxicity or plant damage or spray burn.