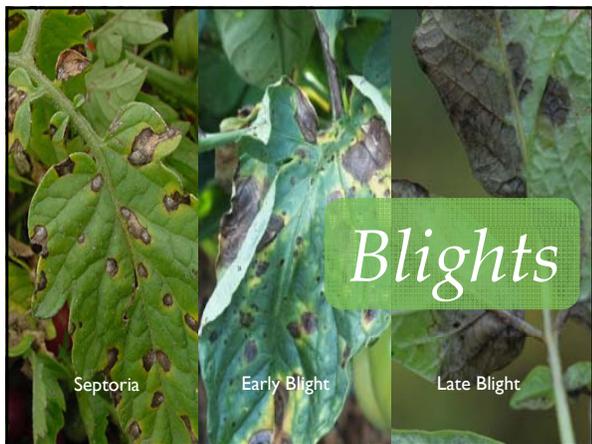
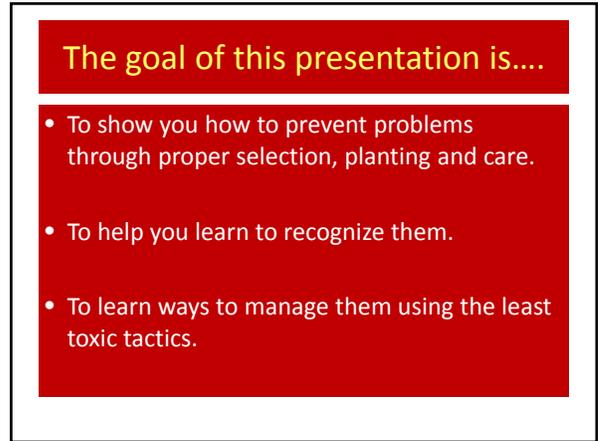
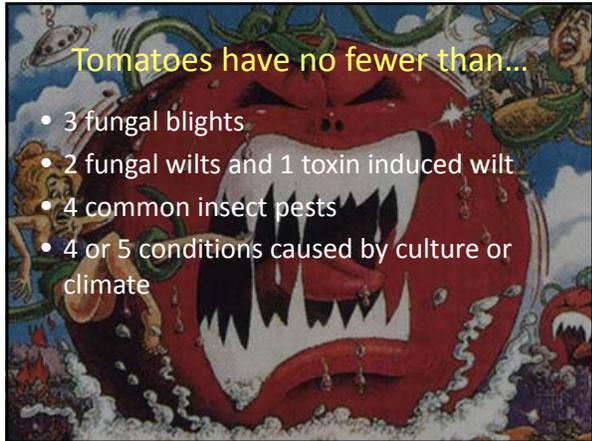


Trouble-free Tomatoes

By Sharon Morrisey
Consumer Horticulture Agent
Milwaukee County UW-Extension





Early blight

Circular brown spots on leaves begins at the base of the plant moving upward. As spots enlarge, concentric rings appear giving a bull's-eye appearance. All lower leaves may drop off and death of the plant may result.

Prevention
Same as listed above for Septoria Leaf Spot



Late blight

- Spots begin as pale-green or olive-green areas that quickly enlarge into brown-black, water-soaked looking blotches on leaves and stems. All plants in planting wilt, brown and die in 7-10 days.
- Prevention**
 - Purchase disease-free transplants
 - Plants with Late blight must be destroyed.
 - DO NOT COMPOST!**
 - Fungicides may be effective, but only if applied before the disease appears.




Late Blight of Tomato

Late Blight of Tomato

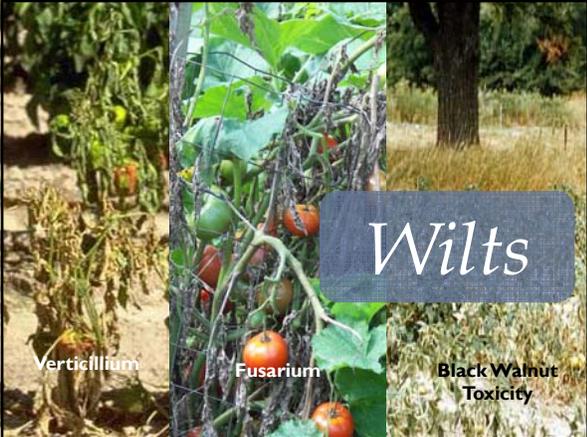
Late Blight of Tomato

Tomato Varieties with Resistance to Late Blight

- Magic Mountain*
- Regal Plum*
- Better Boy
- Golden Sweet
- Green Zebra
- Juliet
- Legend
- * very resistant

- Matt's Wild Cherry
- Pruden's Purple
- Roma
- Slava
- Stupice
- Sun Sugar
- Wapsipinicon
- Wisconsin 55

Wilts



Verticillium Fusarium Black Walnut Toxicity

Verticillium wilt

- Usually beginning in mid-season, the older leaves yellow, then wither and drop. Initially, leaves on only one side of a stem may show symptoms. Plants are stunted and the exposed tomatoes become sunburned.
- Control**
 - There is no control for wilts, only prevention
 - Plant only resistant tomato varieties indicated with a "V" and/or an "F" on the label, seed packet or catalog description
 - Do not plant tomatoes in an area that has been infected in the past, these soil-borne fungi can survive in the soil for years
 - Remove and destroy all infected plant debris



Fusarium wilt

- The symptoms of Fusarium and Verticillium wilts are nearly identical and can only be determined with certainty in the laboratory. Verticillium wilt is more prevalent in Wisconsin and prefers cool weather while Fusarium is a warm-weather disease.
- **Control**
- - Same as for Verticillium Wilt



Black walnut toxicity

- Black walnut trees produce a toxic substance called juglone in their leaves, nut hulls, bark and roots. When roots of tomato plants come in contact with Black Walnut roots, it causes stunting, wilting and death.
- **Control**
- - Do not plant tomatoes under or near Black Walnut trees. Even if the walnut tree is removed, root pieces in the soil may continue to affect plants growing there
- - Planting in raised beds may prevent contact between the roots



Insects



Hornworm
Whiteflies
Aphids
Slug

Tomato hornworm

- These large, blue-green caterpillars become active in July feeding on tomato leaves and fruit. Stems stripped bare of leaves indicate their presence.
- **Control:**
- Because of their size they are easily removed from the plant by hand. They become hummingbird moths as adults.




Whiteflies

- These resemble small flies covered with a whitish powder but are not true flies. When disturbed they frantically fly around the plant. Infestation can reduce yield if severe.
- **Control**
- Spray with insecticidal soap if severe.



Aphids

- Tomato aphids are small, soft-bodied sucking insects feeding in groups on leaf undersides and stems.
- **Control**
- Dislodge them with a strong blast of water or use an insecticidal soap solution repeated every 5–7 days.



Slugs

- Slugs are slimy shell-less snails that feed at night and hide in dark, damp spots by day. They feed on ripe fruit near the ground.
- **Control**
- Support tomato stems to keep fruit off the ground. Apply iron phosphate product to soil according to package directions.




Culture & Climate

Blossom Cracking Catfacing Herbicide Drift

Blossom end rot

- Bottom end of the tomato turns brown, leathery and shrunken. It is caused by lack of calcium in the fruit.
- **Control**
- Irregular moisture and excess nitrogen should be avoided. Water regularly and evenly and mulch the soil to retain moisture. Avoid excess fertilization.



Catfacing

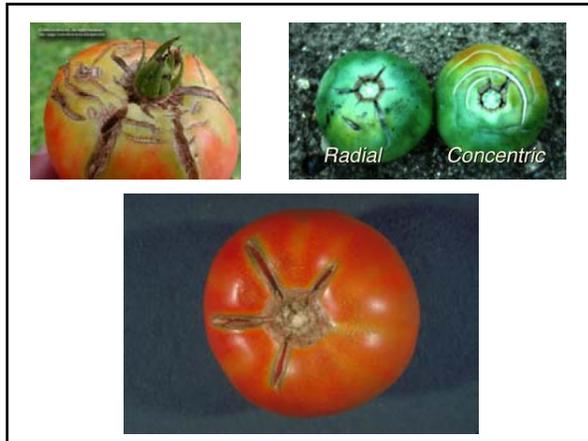
- The presence of deep indentations in the blossom end of the fruit often causing kidney-shaped or distorted fruit.
- **Control**
- Damage occurs when temperatures drop below 50° during flowering. Excess heat or erratic soil temperatures can also be the cause. Catfacing occurs more frequently on heirloom and large-fruited varieties.



Cracking

- The skin on the tomatoes develop cracks that split in circles or radiate from the stem end.
- **Control**
- Wild fluctuations in temperature and moisture are the primary culprits. Water evenly, mulch to hold moisture and avoid excess fertilizer.





Herbicide Injury

- Symptoms vary, but may include stems that are flattened or corkscrew and leaves that have abnormal shapes, sizes or textures.
- Control
- Herbicides may be applied along with fertilizers as part of a lawn care program. They may drift onto tomato plants. Most tomatoes exposed to this type of herbicide will survive and subsequent growth will be normal.




And that ain't all....



Bacterial speck



Buckeye rot



Anthraxnose



Bacterial spot



Sunburn



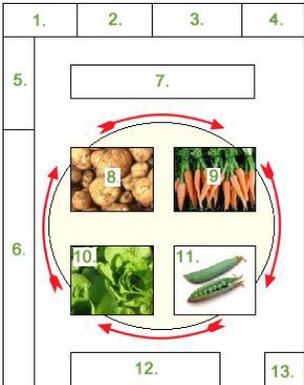
Alternaria

12 Tips for Trouble-free tomatoes

#1 Rotate planting location

- Over 3 – 4 years.
- One year might be a container.
- Reduces diseases and insect pests.

1.	2.	3.	4.	
5.	7.			
8.		9.		
10.		11.		
12.		13.		



#2 Buy healthy, resistant varieties.



#3 Plant on June 1st.

JUNE 2011

SUN	MON	TUES	WED	THURS	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

#4 Space plants at least 5' apart.



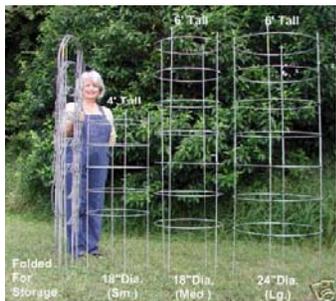
#5 Prune out some branches and support plants with cages or supports

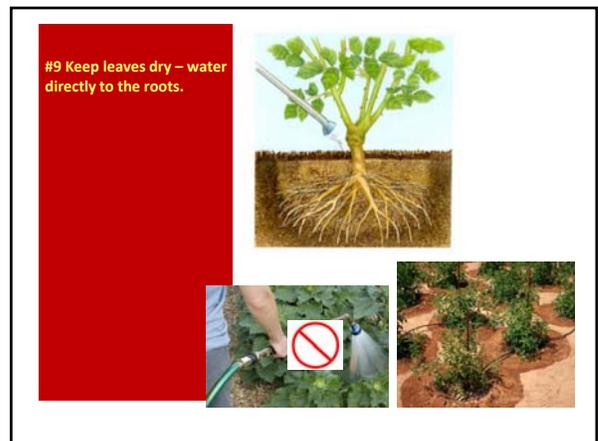
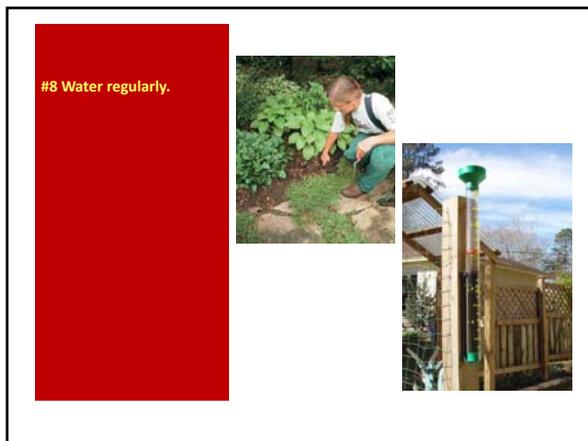
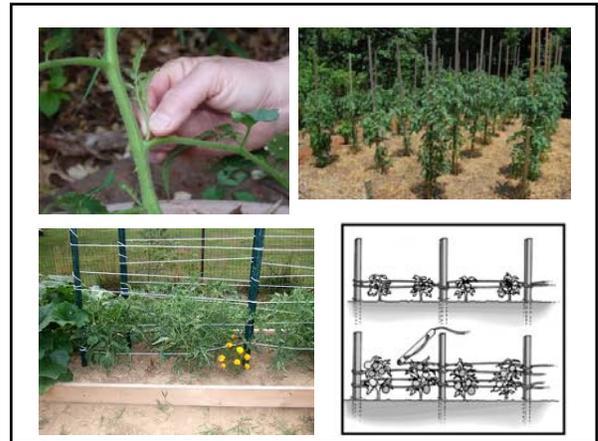
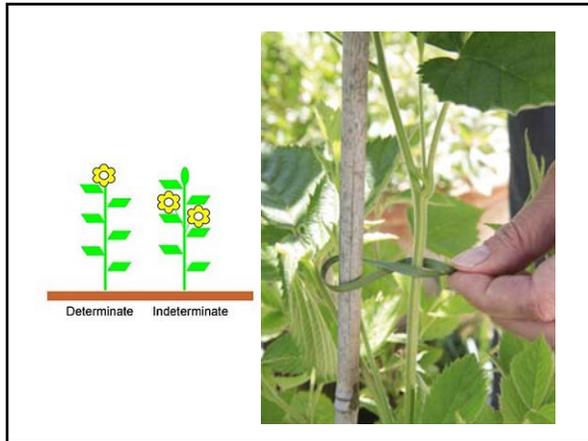


Wire cage used for support



Staking with a single stake





#10 Remove and destroy infected leaves as soon as they appear.



#11 Clean up well after the first frost and do not compost infected plants.



#12 Use fungicides as a last resort to control blights.



Organic



Synthetic

#13 Support your local farmers' market – buy your tomatoes.

