Oak Wilt…
A ’New’ Threat to New England?

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Oak Wilt

*Ceratocystis fagacearum*

- First identified in Wisconsin in 1944
- By 1998 was in 22 states, concentrated around the upper mid-west
Distribution of Oak wilt - 1998
Oak Wilt
*Ceratocystis fagacearum*

- First identified in Wisconsin in 1944
- By 1998 in 22 states, concentrated around the upper mid-west
- Confirmed in September 2008 in Glenville, NY (Schenectady Co.)
  - Cornell Plant Disease Diagnostic Clinic
  - Molecular confirmation by Tom Harrington, Iowa State
  - Appears five properties affected
Where’s Glenville, NY?
Oak species in the Northeast commonly killed by *C. fagacearum*

<table>
<thead>
<tr>
<th>Species</th>
<th>Scientific Name</th>
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<tbody>
<tr>
<td>Black oak</td>
<td><em>Q. velutina</em></td>
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<tr>
<td>Pin oak</td>
<td><em>Q. ellipsoidalis</em></td>
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<tr>
<td>Northern red oak</td>
<td><em>Q. rubra</em></td>
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<tr>
<td>Burr oak*</td>
<td><em>Q. macrocarpa</em></td>
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<tr>
<td>White oak*</td>
<td><em>Q. alba</em></td>
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</tbody>
</table>
Red oak group

Late June-early July
‘off-green’ color
Wilting top of crown-down
Rapid progression, defoliation within weeks
Leaves brown from tip to base
Brown streaking in outer growth ring
White oak group

Late June-early July

‘off-green’ color

Wilting top of crown-down

Slow progression, one branch at a time

Leaves brown from tip to base

Occasionally only 1/2 leaf

Brown streaking in outer growth ring
Symptoms & signs
Wilted tree
Dead trees
Dead tree

M. Bohne photo
Leaf symptoms
Bark splits due to pressure of fungal pad beneath bark
Mycelial mat
(& spores)
Black discoloration in sapwood

Cornell Univ. photo
Cracking bark

Fungus mats

Cornell Univ. photos
Nitidulid beetles - ‘overland’ spread

Carpophilus, Coleopterus & Euperea - vectors

Glischrochilus (common picnic beetle)
Glischochilus (common picnic beetle)

Mycelial mats
Root grafts
Management strategies (infected sites)

- Avoid wounding trees during periods of high susceptibility
  
  April - Early July
  
  Paint wounds if they occur at this time
Management strategies (infected sites)

- Avoid wounding trees during periods of high susceptibility
- Control existing infections
  Remove infected trees
    Debark, split & dry prior to following spring
  Disrupt root grafts
    Trenching
      Vibratory plow (5 ft blade)
Management strategies (infected sites)

- Avoid wounding trees during periods of high susceptibility

- Control existing infections
  
  Remove infected trees
  
  Debark, split & dry prior to following spring

  **Disrupt root grafts**
  
  Trenching
  
  Vibratory plow (5 ft blade)

- **Chemical treatment of valuable trees**
  
  Only for non-symptomatic, high-value trees
  
  Propiconazole (Alamo®), by licensed applicator
  
  Every 2-3 years
Sampling for diagnostic testing

- Select partially-wilted branches
- Avoid tips of branches
- Collect symptomatic leaves off branches, package separately

No sampling after annual leaf fall begins
Black discoloration in sapwood
Sampling for diagnostic testing

- Cut branches to 6”-8”
- Place branch samples in zip-loc bag
- Bole samples may be taken from bark ‘window’
Sampling for diagnostic testing

- cool samples and bring or ship to lab (ship in styrofoam cooler with ice packs)

- sample temps should never exceed 85-90\textdegree F

http://www.youtube.com/watch?v=XVUZsvyZfVE
Where to send samples

• UNH Plant Diagnostic Lab
  – http://extension.unh.edu/Agric/AGPDTTS/PlantH.htm

• Cornell Plant Disease Diagnostic Clinic
  – http://plantclinic.cornell.edu/Default.htm
Questions?

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progression of leaf symptoms differs for each oak group

Red oak group

white oak group

Live oak group