Tobacco Diseases

By
Darrell Hensley
My Responsibilities

- **Entomology and Plant Pathology**
  - Burley Tobacco Disease Control
  - Co-chair Agroterrorism Taskforce
  - Distance Diagnostics
  - SR-IPMC
  - SPDN
Methods to Contact

• Phone = 865-974-7958
• Email = dhensley@utk.edu
  http://web.utk.edu/~extepp
  http://eppserver.ag.utk.edu
Insects and Diseases

Some diseases may be transmitted by insects. Other insects may cause damage that closely resembles a disease.
Insects and Disease

• Thrips may serve as vectors of tomato spotted wilt virus (TSWV)

• Aphids can serve as vectors of many other viruses, such as alfalfa mosaic virus
Insects and Disease

Stinkbug injury is commonly confused as a disease problem. Why?
Diseases

Abiotic (non-living)
Biotic (living)
Abiotic Diseases

• Low pH (acidic soils, manganese toxicity)
• Damage caused by pesticides
• Fertilizer burn
• Nutrient deficiency (N, P, K, etc.)
• Hail damage / wind
• Lightning injury
• Mechanical / tractor
• Damage caused by animals
• Water damage (excessive rain)
• Sunscald
• Weather fleck
Biotic Diseases

- Fungi (roots or foliage)
- Bacteria (roots or foliage)
- Viruses (entire plant)
- Nematodes (roots)
Some Diseases of Tobacco

• Black Shank (fungal - soil borne, water)
• Blue mold (fungal – wind borne)
• Sore shin (fungal – soil borne)
• Target spot (fungal – soil borne, wind)
• Pythium root rot (fungal -soilborne, water)
• Fusarium wilt (fungal – soil borne)
Tobacco Diseases that may appear similar

- Black shank
- Sore shin
- TSWV
- Fusarium wilt
- Lightning injury
Foliar/Leaf Disease

- Blue mold (it can go systemic)
- Angular leaf spot (wildfire)
- Brown spot
- Target spot
- Frogeye leaf spot
- Ragged leaf spot
Tobacco Viruses

- Tomato spotted wilt virus (TSWV, spread by thrips)
- Tobacco mosaic virus (TMV)
- Alfalfa mosaic virus (AMV)
- Tobacco ringspot virus (transmitted by nematodes)
- Tobacco vein mottling virus (TVMV)
- Tobacco etch virus (TEV)
TSWV

- Stunting
- May kill young plants
- Ring spots may occur on leaves
- Leaf bowing to one side
- Necrotic (dying tissue)
- Yellowing

- Generally worse in dry springs, but usually not more than 35% damage.
Identification

• Conduct a thorough investigation
  – What variety was planted?
  – When was it planted?
  – What was and when was it sprayed?
  – Where in the field is it occurring?
  – Are weeds affected?
  – What was planted in the field last year?
  – The more information the better
Pesticide Injury

- Quadris (fungicide)
- Glyphosate (Roundup herbicide injury)
- Phenoxy herbicide (2,4-D, dicamba)
- Sulfentrazone (Spartan - herbicide)*
- Tebuthiuron (Spike - herbicide)
- Streptomycin w/ insecticides
- Drift ......................
Black Shank of Tobacco

- Yellowing
- Wilting * (may slightly recover the following day)
- Darkened shank
- Darkened pith extending upward with disking pattern
- If heavily infected leaves usually turn golden yellow in the later part of the season.

** ask grower which variety was planted.
*** did it rain recently (don’t get it confused with being water logged and/or lightning injury)
***** IF POSSIBLE, visit non-infested fields first...........

Wear disposable covers over boots or shoes.
Tobacco Blue Mold

- Yellow leaf spot with gray growth underneath
- If it goes systemic you may see necrotic veins and leaf distortions.
- Some varieties have slight resistance
- Keep up with North American Plant Disease Forecast Center @
  http://www.ces.ncsu.edu/depts/pp/bluemold/
- Email me (dhensley@utk.edu) or Steve Bost (scbost@utk.edu) in the event of an outbreak.
# Tobacco Diseases

<table>
<thead>
<tr>
<th>Float Plants</th>
<th>Field Plants</th>
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<tbody>
<tr>
<td>Pythium root rot</td>
<td>Acidic soils / manganese tox.</td>
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<tr>
<td>Bacterial soft rot</td>
<td>TSWV</td>
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<tr>
<td>Sclerotina</td>
<td>Sore shin</td>
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<tr>
<td>Target spot</td>
<td>Black shank</td>
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<tr>
<td>TSWV</td>
<td>Brown leaf spot</td>
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<tr>
<td></td>
<td>Angular leaf spot / Wildfire</td>
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<tr>
<td></td>
<td>Target spot</td>
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<tr>
<td></td>
<td>Blue mold (may have been infected in float trays)</td>
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</tbody>
</table>
Communication

- County agent
- Grower
  - Applicator / field worker
- Respect the re-entry interval (REI)
- **Do not** make recommendations
- **Do not** talk about other grower’s problems
- **Avoid walking into wet tobacco**
Nutritional Problems

- Acidic soils (low pH) manganese toxicity
- Potash (potassium - K) deficiency
- Nitrogen deficiency

- N, P, K
Black Shank
Black Shank
Lightning Damage
Prolong rainfall, drowning
Low pH
Blue Mold
Tobacco Blue Mold
Blue mold Tracking

North American Plant Disease Forecast Center
http://www.ces.ncsu.edu/depts/pp/bluemold/

University of Tennessee, Entomology and Plant Pathology
http://web.utk.edu/~extepp/bluesit.htm
Mechanical Injury
Target Spot
Frogeye leafspot
Distance Diagnostics

• Pixels (640x480) or greater
• In focus prior to sending
• Field shot, several plants, one plant, closeup of symptoms, if needed use a microscope

http://eppftpsserver.ag.utk.edu/diag
Scouting Form F766

• Date:
• Time:
• County:
• Scout:
• Farmer:
• Variety:
• T.P.Date
• Last TRT date:
• Chemical:
• Field no.
• Acres:
• Growth Stg.:
• Sunny:
• Cloudy:
• Overcast:
• Rainy:
• Temp:
Tennessee Tobacco Pest Management Scouting Form

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time:</th>
<th>County:</th>
<th>Scout:</th>
<th>Farmer:</th>
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<td>Chemical:</td>
<td>Field No.:</td>
<td>Acres:</td>
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<td>Cloudy:</td>
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<td>Rainy:</td>
<td>Temp.:</td>
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### Insects

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### Diseases

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### Weeds

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Final

- Visit black shank free fields first
- Wear disposable boot covers when needed
- Communicate, communicate, communicate
- As the tobacco get larger, try to avoid early morning entry into the field.