IPM Subgroup Report

Cancun, Mexico

18 October 2023

Objectives

- **Objectives**
  - To summarize available IPM strategies for each pest & disease
    - Must be proven on field scale
  - Then produce a document for agronomists & farmers
    - Structured by disease or pest
    - With a common outline framework based on relevant IPM methods
    - NB – not a pathology textbook

What is IPM?

- **Integrated Pest Management**
- **Definition - American Phytopathology Society**
  - "A sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks".
    - IPM ≠ organic
    - Chemical control important component of IPM
      - Emphasis on responsible, sustainable and minimal use of CPAs
      - Integrated control program can ↓ CPA use

IPM is Not New

- **INTEGRATED management system**
  - **Zimbabwe, TRB handbook 1950's recommended**
    - Rotation for nematode control
    - Hygiene for TMV control
    - Avoiding over-fertilization for bacterial foliar disease control
  - **US grower guides 1940's recommended**
    - Rotation & hygiene for black shank control
    - Hygiene for TMV control
- **Some new IPM strategies**
  - **Mostly built on well-established principles**

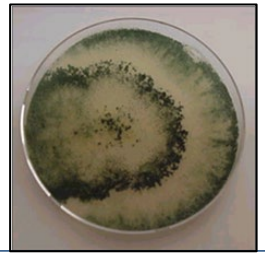
CPA Residues

- **BIG issue for tobacco industry**
  - IPM → ↓ CPA residues
    - CPAs may be replaced or partly replaced by other strategies
    - Lower rates and/or fewer applications
      - Scouting
      - Proper application
      - Lower disease/pest pressure


CPA Residues cont

- **Lower diseases/pest populations → easier control, ↓ CPAs**
  - Rotations, good hygiene etc.
    - Prevent or slow build-up of diseases / pests
- **Biocontrols**
  - No residues

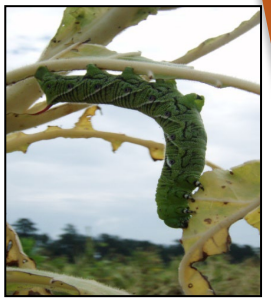





Subgroup Structure

- **80 chapters over 5 groups**
  - diseases
  - nematodes
  - insects
  - weeds
  - IPM strategies
- **Each with a group leader**
  - organizes group
  - collects chapters
  - arranges reviews & editing





Subgroup Approach

Same approach for 3 groups

Diseases

fungal
bacterial
viral
seedling
post-harv

Nematodes

Insects

Groups divided into sections

Chapter for each disease or pest

Subgroup Approach cont

Weeds group

Field Weeds

Parasitic Weeds

Different approach

Principles of weed control

Specific weed problems

Subgroup Approach cont

IPM Strategies

Biological Control

Rotation

Correct CPA Usage

Sections deal with general IPM principles

Disease Group – Status

- **34 chapters (1-34)**
  - 10 in final document
  - 18 written, awaiting editing & reviewing
    - 9 currently in review
  - 6 to complete
    - 3 recently assigned
    - 3 to be assigned – no volunteers yet

Nematode Group – Status

- **6 chapters (35-40)**
  - 3 in final document
  - 1 written & edited
    - Currently in review
  - 2 to complete
    - Both assigned
    - Writing in progress
  - Near completion

Insect Group – Status

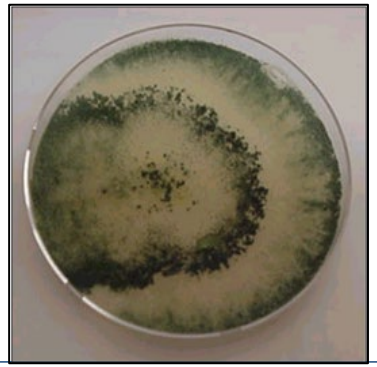
- **19 chapters (41-59)**
  - Status unknown
  - Several chapters written
  - Need a new group leader

Weeds Group – Status

- **8 chapters (60-67)**
  - 6 in final document
  - 2 written
    - To be edited & reviewed
  - Near completion

IPM Strategies – Status

- **15 chapters (68-80)**
  - Status unknown
  - Several chapters written
  - New group leader just appointed



2023 Meetings

- **Antibes June 2023**
  - **Attendees**
    - 20 registered
    - 16 attended
  - **Appeals**
    - Editing – 4 volunteers
    - Reviewing – needed 4, 3 volunteers

Meetings cont

- **Cancun October 2023 – Sunday 15 October**
  - **Attendees**
    - 24 registered
    - 34 attended
  - **Appeals**
    - Editing – offers to canvas colleagues
    - Reviewing – needed 7, 7 volunteers
    - Authors – needed 5, 3 volunteers
    - Group leader – no volunteers

If you missed the meeting & are interested, contact me

anne.fisher@uky.edu

Appeals

- **We need:**
  - **Leader for insect group**
    - Entomologist ideal, but not essential
    - Role is more organizational than technical
      - Assign & collect chapters
      - Arrange editing, reviewing, corrections
    - Can write some chapters but not required

Appeals cont

- **We need:**
  - **Authors**
    - Black Root Rot *Thielaviopsis basicola*
    - Management of Seedling Diseases
      - Can be collaborative, multiple authors
        - Float trays & conventional seedbeds
        - Worldwide

Appeals cont

- **We need:**
  - **Photographs**
    - Frogeye on cured leaf
      - Different tobacco types
      - We have flue-cured, need green spot on:
        - Burley
        - Dark
        - Cigar

Thanks

- Our many members who
  - Contribute photos
  - Review
  - Edit
  - Especially authors
- CORESTA

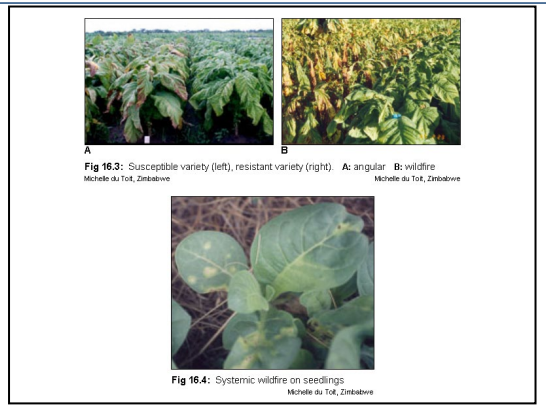
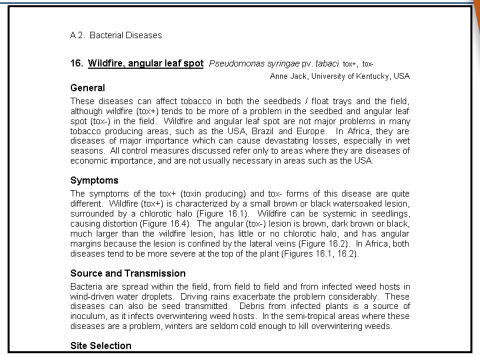


Fig 16.3: Susceptible variety (left), resistant variety (right). A: angular B: wildfire
Michelle du Toit, Zimbabwe Michelle du Toit, Zimbabwe

Fig 16.4: Systemic wildfire on seedlings
Michelle du Toit, Zimbabwe



A.2. Bacterial Diseases

16. Wildfire, angular leaf spot *Pseudomonas syringae* pv. *tabaci* tox+, tox-
Anne Jack, University of Kentucky, USA

General

These diseases can affect tobacco in both the seedbeds / float trays and the field, although wildfire (tox+) tends to be more of a problem in the seedbed and angular leaf spot (tox-) in the field. Wildfire and angular leaf spot are not major problems in many tobacco producing areas, such as the USA, Brazil and Europe. In Africa, they are diseases of major importance which can cause devastating losses, especially in wet seasons. All control measures discussed refer only to areas where they are diseases of economic importance, and are not usually necessary in areas such as the USA.

Symptoms

The symptoms of the tox+ (toxin producing) and tox- forms of this disease are quite different. Wildfire (tox+) is characterized by a small brown or black watersoaked lesion, surrounded by a chlorotic halo (Figure 16.1). Wildfire can be systemic in seedlings, causing distortion (Figure 16.4). The angular (tox-) lesion is brown, dark brown or black, much larger than the wildfire lesion, has little or no chlorotic halo, and has angular margins because the lesion is confined by the lateral veins (Figure 16.2). In Africa, both diseases tend to be more severe at the top of the plant (Figures 16.1, 16.2).

Source and Transmission

Bacteria are spread within the field, from field to field and from infected weed hosts in wind-driven water droplets. Driving rains exacerbate the problem considerably. These diseases can also be seed transmitted. Debris from infected plants is a source of inoculum, as it infects overwintering weed hosts. In the semi-tropical areas where these diseases are a problem, winters are seldom cold enough to kill overwintering weeds.

Site Selection

THANK YOU

If you would like to join us, contact me
anne.fisher@uky.edu