IPM in Tennessee: Observations, Limitations and Opportunities

Resistance, Bt Cotton, and Boll Weevil Eradication

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Insect Losses for Tennessee
(estimated percent yield loss)
Lint Yield for Tennessee (lbs. per acre)

Improved Management (including eradication)

Better Varieties (including Bt cotton)
Insect Control Costs for Tennessee (dollars/acre)

- Resistance / Bt cotton
- Boll weevil eradication
- Pricy, specific insecticides
- Better management
Anticipated “Fixed” Costs in 2003 (estimated state average across all acres)

- **Bt cotton ($19/acre)**
  - Plus yield reductions in non-Bt refuge
- **At-planting insecticides ($10/acre)**
- **Boll weevil eradication (about $30/acre)**
  - Averaged 5% yield losses (1990-1999)
  - Averaged 2.5 applications/acre (1990-1999)
- **Insect control costs in 2002 ($83/acre)**
- **About 2/3rds of insect budget are fixed costs associated with Bt cotton, eradication efforts, and thrips control**
Cotton Prices (cents/pound)

Tenet of IPM: As crop value decreases, so should inputs such as insecticides
Opportunities to Reduce Insect Related Costs in 2003

- Limited by fixed costs
- Eliminate unnecessary insecticide applications and/or reduce insect damage
  - Use existing treatment thresholds and other recommended insect management guidelines
  - Increase performance of applications
    - Choose the best insecticide for the money
    - Improved timing
    - Better application (including precision ag)
  - Reduced insecticide rates?
Better Insecticides?

**Caterpillar Products**
- spinosad (Tracer)
- indoxacarb (Steward)
- methoxyfenozide (Intrepid)
- emamectin benzoate (Denim)

**Thrips and “Bug” Products**
- imidacloprid (Trimax/Gaucho)
- thiamethoxam (Centric/Cruiser)
- acetamiprid (Intruder)
Value of a Professional Crop Consulting Program
(still important when profit margins are small)

- **Timing of insecticide applications**
  - Increase efficacy, reduce applications, prevent yield loss

- **Knowledgeable selection of materials**
  - New insecticides

- **Detection of uncommon pests or pests occurring at unusual times**

- **Monitor crop maturity / insecticide termination decisions (NAWF5, etc.)**

- **Reduces need for insecticide-program approaches that may inflate insecticide costs**
Insecticide Applications

- Take the time to:
  - Calibrate
  - Band early-season sprays

- Ground applications:
  - 5-10 gallons per acre (more is OK)
  - 30-50 psi
  - Use hollow-cone nozzles (TX6 – TX10)
    - Two nozzles per row is best
    - Especially important after bloom, in large cotton
The End