Mites are still a problem
But we have new management options

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Last year...

...WSU became Price-less
This year...

... 'Bama became Price-less
Why bring this up?

- Pest management isn't Priceless
- Credit cards are like pest management

  - 'You can pay now, or you can pay later'

  - But paying later costs more in the long run
Codling moth control

• More difficult
  ▪ Higher populations
  ▪ Increasing resistance

• Alternatives may be affecting IPM
  ▪ Pyrethroids
    • Asana
    • Danitol
    • Warrior
  ▪ Chloronicotinyls
    • Assail
    • Calypso
Problems with mites

- **Pyrethroids**
  - **Asana**
    - Highly toxic to predatory mites
    - Not toxic to spider mites
    - Causes mite outbreaks quickly
  - **Danitol and Warrior**
    - Highly toxic to predatory mites
    - Also controls spider mites
    - But spider mite control is relatively short term
      - Predators are affected for much longer time
    - Mite problems don’t show up first year
      - But next season is very tough

- So saving $40 / ac this year may cost more than $60 / ac next year
Spider mites in Assail-treated apple

- Used Assail and Imidan for codling moth control
  - Measured levels of spider mites and predatory mites
- Treatments:
  - Untreated check
  - Imidan for 4 covers
  - Assail for 4 covers
  - Assail for 2nd cover, Imidan for other covers
  - Assail for 1st generation, Imidan 2nd generation
  - Assail with oil for 4 covers
  - Assail with oil for 2nd cover, Imidan for other covers
  - Assail with oil for 1st generation, Imidan 2nd generation
Spider mites in Assail-treated apple

- Assail x 4 increased mites

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Spider mites in Assail-treated apple

Assail x 4 increased mites

Tetranychid: Cumulative mite days (09 Sep)
Calypso

• New this year
• Another chloronicotinyl
  ▪ Thiacloprid (Bayer)
    • Provado (Bayer)
    • Actara (Syngenta)
    • Assail (Cerexagri)
    • Thiacloprid

• May have the same sort of effect on mites
Viagra for mites?

- At low concentrations, Assail and Calypso appear to increase mite reproduction

Diagram: Graph showing the effect of different concentrations of chloronicotinyl on mite reproduction. The graph compares Assail and Calypso against water as a control. The x-axis represents concentration (ppm) ranging from 0 to 10000, and the y-axis represents the number of eggs per female per day ranging from 0 to 8.
How to avoid mites?

• Use pyrethroids as a last resort
• Use chloronicotinyls sparingly
  ▪ 2nd cover is not disruptive
  ▪ Use chloronicotinyls with oil
    • Oil provides some miticidal activity
Dealing with mites

• Old answers
  ▪ Agri-Mek
    • Some mites in pear are resistant
  ▪ Savey / Apollo
    • Kills eggs
    • Effective when used infrequently
    • 1 application per season
  ▪ Vendex
    • Selective (soft on predatory mites)
    • Resistance can be an issue
  ▪ Pyramite
    • Excellent for European red mites
    • Variable performance on two-spotted spider mites
New materials for mite control

• Acramite (Crompton)
  ▪ Not really new
  ▪ Very effective
  ▪ Very selective

• Essentially has become the standard miticide in pear
New materials for mite control

• Zeal (Valent)
  ▪ Very effective
  ▪ Very selective

• Acts much like Acramite
  ▪ But better on European red mite

• Also (probably 2005)
  ▪ Envidor (BAJ 2740, Bayer)
    • Also works well
    • Excellent fit for three product -- Resistance Management
New miticides

• All work well in controlling two-spotted spider mites

TSSM Control

Zeal = Secure
BAJ = Envidor
Resistance management

• Many options

• Use material once per season
  ▪ Several are limited to once

• Rotation, Rotation, Rotation
  ▪ Little difference in cost
  ▪ Little difference in efficacy
Avoid the storms

- Use selective materials when possible
  - Protect your predators

- You can pay now, or you can pay later