Adaption and Management of New Cultivars

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Variety Selection

• A key factor in producing a successful crop

• Variety selection has been identified as a key issue by cotton growers throughout the U.S.

• No longer simply choosing a variety to plant
  – Trait packages must be considered
  – Seed treatments
  – Performance
Variety Performance

• Substantial data exists regarding variety performance
  – MSU OVT trials: 9 locations
  – MSU on-farm variety trials: 23 locations
  – DP FACT trials
  – DP NPE trials
  – Phytogen Innovation trials
  – Bayer CAP trials
  – CropLan Answer Plots
  – Jimmy Sanders Opti-Grow
  – Others

• Data is lacking on management of new varieties
Variety Adaption

• Adaption defined:
  – An inherited or acquired modification in organisms that makes them better suited to survive and reproduce in a particular environment

• Laymen’s terms:
  – The performance of a given variety is influenced by the environment it is grown in
Where is the Data???

- Very difficult to gather data for every possible crop management situation

- Goal is to generate reliable data for as many situations as possible
  - Crop management differs from pest management

- Why is it difficult to obtain data?
  - Variety lifespan
  - Rate of variety introduction
  - Funding for research
Crop Management

- Established thresholds for insects
  - 3 plant bugs per 6 row feet for blooming cotton

- Critical period of weed interference
Where is the Data???

• Impossible to gather data for every possible crop management situation
  – Crop management differs from pest management

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• Why is it difficult to obtain crop management data?
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Varieties Planted in Mississippi

~ 25 Years

~ 8 Years

Percent Market Share

ST 213

DP 555 BR

Variety Turnover

![Variety Turnover Chart]

- # of Varieties Planted

The chart shows a significant increase in the number of varieties planted from 1970 to 2010, with a notable peak in 2010.
What is Being Done?

• Several university and private industry projects examining variety response to PGR application

• Critical need for irrigation management

• Collaborative research
  – Multi-disciplinary
  – Multi-state
Management Example – Plant Height

Inches

Bloom + 2 Weeks

Dryland

Irrigated

FM 1944
No PGR

FM 1944
1 PGR

FM 1944
2 PGR

PHY 499
No PGR

PHY 499
1 PGR

PHY 499
2 PGR
Management Example – Yield

Lbs Lint/Acre

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<th>Treatment</th>
<th>Dryland</th>
<th>Irrigated</th>
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Questions