Fusarium Race-4 Upland Screening and Evaluation

Mike and Jim Olvey
O&A Enterprises Inc.
Industry Participation

• Over 7,000 Upland Lines Evaluated

• 5 Private Companies

• State Breeders

• Federal Breeders

• California Cotton Growers
Educate the Industry with Site Visits

• Explain our FOV-4 Screening and Evaluation process

• Provided Field Plans with their Entries

• Showed individuals their Entries
Timeline: Years to Variety Farmers can Grow

- Pre-Commercial
- Conventional Upland
- Conventional Barbadense
- Conventional Diploid

The bar chart shows the timeline in years for different varieties of farmers to grow.
Testing Protocol

• Seedling Death

• Vascular Staining

• Yield Evaluation
High vs. Low Spore Count Fields

<table>
<thead>
<tr>
<th>Spore Count</th>
<th>Variety</th>
<th>Plant Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>DP 340 Pima</td>
<td>&gt;40%</td>
</tr>
<tr>
<td>High</td>
<td>DP 340 Pima</td>
<td>&lt;5%</td>
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</tbody>
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FOV-4 Previous Resistance Claims

- SJV-01 through SJV-09
- MD-26ne
- MD 25-26ne
- NM 1004
- NM 1005
- NM 1015
- A2-190
- Bell-1
Cotton Incorporated FOV-4 Screening

• Screen 1,000 Upland entries using O&A’s Site Specific Mass Screening (SSMS) protocol

• 10 Entries advanced to 2nd year screening

• 30x more checks from 1st to 2nd year testing
1st vs 2nd Year Plot Layout
Goal: Find Upland Varieties with the highest level of resistance to the Fusarium Race-4 disease and have the entire industry be able to Utilize these varieties as soon as possible.