Topping & Sucker Control

Andy Bailey
Dark Tobacco
Topping and Sucker Control

• Topping:
  – Dark Tobacco:
    • Topping stage:
      – Bud stage to 50% bloom
    • Topping height:
      – At least 16 leaves
  • May be most efficient to make 2 toppings
Comparison of Bloom Stages and Topping Heights for Dark Tobacco
2006 – Chris Rodgers Farm – Graves Co., KY

<table>
<thead>
<tr>
<th>Bloom Stage – Topping Height</th>
<th>Yield (lbs/A)</th>
<th>LSD (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EB-12L</td>
<td>2338</td>
<td>142</td>
</tr>
<tr>
<td>EB-16L</td>
<td>2203</td>
<td>156</td>
</tr>
<tr>
<td>50%-12L</td>
<td>2032</td>
<td>270</td>
</tr>
<tr>
<td>50%-16L</td>
<td>2309</td>
<td>320</td>
</tr>
<tr>
<td>100%-12L</td>
<td>1946</td>
<td>418 (total)</td>
</tr>
<tr>
<td>100%-16L</td>
<td>2038</td>
<td></td>
</tr>
</tbody>
</table>

Total Yield (lbs/A):
- EB-12L: 4023
- EB-16L: 4253
- 50%-12L: 3818
- 50%-16L: 4214
- 100%-12L: 3732
- 100%-16L: 4184

LSD (Least Significant Difference) for each stage:
- LSD0.05 = 142
- LSD0.05 = 156
- LSD0.05 = 270
- LSD0.05 = 320
- LSD0.05 = 418 (total)

NL Madole
Main Effect of Bloom Stage on Yield

2006 – Chris Rodgers Farm – Graves Co., KY – NL Mad

Total Yield (lbs/A)

<table>
<thead>
<tr>
<th>Bloom Stage</th>
<th>Total Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elong Bud</td>
<td>4138</td>
</tr>
<tr>
<td>50% Bloom</td>
<td>4016</td>
</tr>
<tr>
<td>100% Bloom</td>
<td>3958</td>
</tr>
</tbody>
</table>

LSD\(_{0.05}\) = 296

100% Bloom:
- More difficult topping
- Harder stalk
- More bacterial hollow stalk
- More suckers >1” to pull

*Data averaged over topping heights.
Main Effect of Topping Height on Yield
2006 – Chris Rodgers Farm – Graves Co., KY – NL Mad

*Data averaged over bloom stages.

LSD$_{0.05} = 242$
Contacts

• Fatty alcohols
  – Brands
    • Royal-TacM
    • Off Shoot T
    • Fair 85
    • Sucker Plucker
  – Activity
    • Contact Control – 1-2 hrs
    • Kills actively growing tissue
  – Rate: 4% solution
    • 3.5% to 5%
    • 1.75 to 2.5 gal/50 gal water
Local Systemic Dinitroanaline (DNA)

- Flumetralin (Prime+, Flupro) or Butralin
  - Activity
    - Stops cell division
  - Application
    - Drop line or hand sprayer
    - Coarse spray
      - Straight boom with coarse nozzle
        » Spaced every 20”
      - Full cone 3 nozzles arrangement
        » One over row, two direct inward
  - Rate
    - In combination
      » (1% solution, 0.5 gal in 50 gal water/A)
    - Alone as run down
      » (2% solution, 1 gal in 50 gal water/A)
Systemic

- Maleic Hydrazide (MH)
  - Activity
    - Systemic Control of whole plant
    - Control Cell Division
  - Application
    - 1.5 to 2 gal/A regular concentrate
    - Avoid heat of the day
    - Nozzles
      - Fine – Hollow Cone (Traditional)
      - Course – Solid Cone (Preferred)
Coarse Nozzles

- Coarse nozzles
  - TG-5 / CE-5 or equivalent at 4-4.5 mph
  - TG-3 / CE-3 or equivalent at 2.5-3 mph
Manual Sucker control

• Very labor intensive
  – Manual stalk rundown
  – 2 to 3 applications
  – MH discouraged
  – Average 5 man hrs/acre

• Worker Protection Issues

• Research/Extension: Develop spray methods
  • Effective long-term sucker control
  • Preserve leaf quality
    – Timing and coverage
    – Spray volume
    – Reduced MH rates
# Treatments

<table>
<thead>
<tr>
<th>Trt</th>
<th>Treatment</th>
<th>Rate/A</th>
<th>Timing</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Royal TacM fb Royal TacM fb Butralin fb Butralin</td>
<td>2 gal / 2 gal, 1 gal / 1 gal</td>
<td>AT / 7 d, 14 d / 21 d</td>
<td>OT</td>
</tr>
<tr>
<td>2</td>
<td>Royal TacM fb Royal TacM fb Royal TacM + Butralin</td>
<td>2 gal / 2 gal, 2 gal + 1 gal</td>
<td>AT / 7 d, 14 d</td>
<td>OT</td>
</tr>
<tr>
<td>3</td>
<td>Royal TacM fb Royal TacM fb Royal TacM fb Butralin</td>
<td>2 gal / 2 gal, 2 gal / 1 gal</td>
<td>AT / 7 d, 14 d / 21 d</td>
<td>OT</td>
</tr>
<tr>
<td>4</td>
<td>Royal TacM fb Royal TacM fb Royal MH-30</td>
<td>1 gal / 2 gal, 1.5 gal</td>
<td>AT / 7 d, 14 d</td>
<td>OT</td>
</tr>
<tr>
<td>5</td>
<td>5 weekly Royal TacM</td>
<td>2 gal</td>
<td>weekly</td>
<td>OT</td>
</tr>
</tbody>
</table>

*AT=at topping; OT=over-the-top. Timing is days after topping.
2006 Dark Tobacco Yield
MH-Free Dark Sucker Control Trial
UKREC, Princeton, KY

LSD(0.05) =
185 279 433 411 (Total)

<table>
<thead>
<tr>
<th>RoyTM</th>
<th>RoyTM</th>
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<th>RoyTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butralin</td>
<td>Butralin</td>
<td>Butralin</td>
<td>RTM+But</td>
<td>Butralin</td>
</tr>
<tr>
<td>794</td>
<td>1040</td>
<td>999</td>
<td>975</td>
<td>1011</td>
</tr>
<tr>
<td>875</td>
<td>904</td>
<td>1007</td>
<td>964</td>
<td>1011</td>
</tr>
<tr>
<td>1481</td>
<td>1461</td>
<td>1652</td>
<td>1598</td>
<td>1357</td>
</tr>
<tr>
<td>Total Yield/A:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3150</td>
<td>3324</td>
<td>3554</td>
<td>3580</td>
<td>3332</td>
</tr>
</tbody>
</table>

Yield (lbs/A)
Sucker Control Recommendations

• Top on time, pull all suckers longer than 1 inch
• If using MH:
  – Contact fatty alcohol at topping (2 gal/A)
  – MH (1.25 to 1.5 gal) + Butralin, Prime+, or Flupro (0.5 gal) at 7 days
  – Use coarse nozzles (TG5, etc.), at least 50 gal/A

• If not using MH:
  – Option 1: dropline/back pack (most consistent if no MH)
    • Contact at topping, 2 contacts if uneven
    • Prime+, Flupro, or Butralin + contact at 7 or 14 d
  – Option 2: if spraying:
    • Spray contact at topping, 2 contacts if uneven
    • Prime+ or Butralin tank mixed with contact at 7 or 14 days
    • Course nozzles, maximize coverage on all leaf axils, 55 to 70 gal/A
### 2006 MH-Free Sucker Control Trial

**Pre-Harvest Sucker Control Evaluation**

5 wks after topping, just prior to harvest

TN 90LC, UKREC, Princeton, KY

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Sucker Control</th>
<th>Sucker Fresh Wt/A (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal TacM fb Royal TacM fb Butralin</td>
<td>77</td>
<td>6517</td>
</tr>
<tr>
<td>Royal TacM fb Butralin</td>
<td>83</td>
<td>5438</td>
</tr>
<tr>
<td><em>Royal TacM fb Royal TacM + Butralin</em></td>
<td>87</td>
<td>4978</td>
</tr>
<tr>
<td>Royal TacM fb Royal MH-30</td>
<td>98</td>
<td>464</td>
</tr>
<tr>
<td>Check (topped not suckered)</td>
<td>0</td>
<td>15913</td>
</tr>
<tr>
<td>LSD(0.05)</td>
<td>2.5</td>
<td>3792</td>
</tr>
</tbody>
</table>

*Applications made with 3 nozzle/row system (all TG-5s), 55 gal/A.

Fatty alcohol may improve stalk rundown of local systemic
MH-FREE SUCKER CONTROL PROGRAM FOR BURLEY TOBACCO

YEILD LB/A

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield LB/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNTREATED</td>
<td>1934</td>
</tr>
<tr>
<td>RTM-RTM-B</td>
<td>2800</td>
</tr>
<tr>
<td>B-B</td>
<td>2543</td>
</tr>
<tr>
<td>RTM-B</td>
<td>2832</td>
</tr>
<tr>
<td>RTM-RTM+B</td>
<td>3014</td>
</tr>
<tr>
<td>RTM-MH</td>
<td>3098</td>
</tr>
<tr>
<td>LSD 0.05</td>
<td>190</td>
</tr>
</tbody>
</table>

RTM=RoyalTac M, B=Butralin, MH=Maleic Hydrazide
Trt 7: Royal Tac M at topping
Royal Tac + Butralin 7 days

Trt 8: Royal Tac M at topping
Royal MH (1.5 gal) at 7 days