IRRIGATION TERMINATION EFFECT ON HARVEST

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The appearance of the cotton boll weevil in alarming numbers has prompted re-evaluation of irrigation termination in cotton. Presence of this pest adds to overwintering pink bollworms, late-season tobacco budworms, increasing water costs, water availability, and harvesting timeliness as important factors when considering the feasibility of earlier termination.

Over 30 termination trials have been completed in past years showing various responses. Further comparison of termination dates is carried on because soil types, farming practice and seasonal differences affect plant response considerably. Spring weather in 1983 was cool enough to delay flowering noticeably and two to three inches of rain fell in the first three days of September to present different field conditions.

Two trials produced more yield with earlier termination and the other two revealed no gain by irrigating in mid-September. However one important relationship was found in plant readiness for harvest. In three of four tests the growers judged that the early termination date advanced harvest from 10 to 12 days.

### HAYDEN FARMS, BUCKEYE

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Lbs Seed Cotton</th>
<th>1st Pick</th>
<th>Turnout</th>
<th>Lint/Acre</th>
<th>Lint/Acre Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Early 9-7</td>
<td>1490</td>
<td>1495</td>
<td>1545</td>
<td>1550</td>
<td>36.5</td>
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<tr>
<td>Late 9-15</td>
<td>1460</td>
<td>1400</td>
<td>1410</td>
<td>1470</td>
<td>35.2</td>
</tr>
</tbody>
</table>

### LEYTON WOOLF, LITCHFIELD PARK

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Lbs Seed Cotton</th>
<th>1st Pick</th>
<th>Lint/Acre</th>
<th>Lint/A. Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Early 9-6</td>
<td>1170</td>
<td>1165</td>
<td>1155</td>
<td>1140</td>
</tr>
<tr>
<td>Late 9-14</td>
<td>1130</td>
<td>1125</td>
<td>1100</td>
<td>1055</td>
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</table>

### GILBERT ROGERS, SCOTTSDALE

<table>
<thead>
<tr>
<th>Irrigation</th>
<th>Lbs Seed Cotton</th>
<th>1st Pick</th>
<th>Lint/Acre</th>
<th>Lint/A. Ground Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Early 8-25</td>
<td>1270</td>
<td>1300</td>
<td>1315</td>
<td>1315</td>
</tr>
<tr>
<td>Late 9-14</td>
<td>1355</td>
<td>1290</td>
<td>1185</td>
<td>1270</td>
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</tbody>
</table>

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DUANE DOBSON, CHANDLER
GILMAN LOAM

<table>
<thead>
<tr>
<th>Irrigation Termination</th>
<th>Lbs Seed Cotton</th>
<th>Lint/Acre 1st Pick</th>
<th>Lint/Acre 1st Pick</th>
<th>Lint/Acre 2nd Pick</th>
<th>Ground Cotton</th>
<th>Total Lint/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early 8-28</td>
<td>3899</td>
<td>1365</td>
<td>288</td>
<td>166</td>
<td>1819</td>
<td></td>
</tr>
<tr>
<td>Late 9-15</td>
<td>3346</td>
<td>1171</td>
<td>177</td>
<td>166</td>
<td>1514</td>
<td></td>
</tr>
</tbody>
</table>

*Values followed by the same letter are not significantly different at p=0.05 by Duncan's Multiple Range Test*

CROP HISTORY

Hayden Farms

SOIL TYPE: Laveen sandy loam
PREVIOUS CROP: Cotton
VARIETY: DPL-90
PLANTING DATE: April 4
FERTILIZER: 10 tons manure preplant, 20 gal. UN32 (5-25) 10 gal UN32 (7-5)
IRRIGATION: Fourteen, 4-13, 5-14, 5-28, 6-10, 6-22, 7-2, 7-12, 7-23, 7-30, 8-9, 8-16, 8-23, 8-30, 9-7
INSECTICIDES: Nine applications; 7-21, 7-29, 8-5, 8-13, 8-20, 8-27, 9-4, 9-13, 9-21
DEFOLIATION: 2 pts DEF + 1 1/2 pt. Accelerate
HARVEST DATES: November 16, December 19
TURNOUT, % Early 36.5 Late 35.2
GRADES: EARLY: 100% middling, 83% mike 6, 17% mike 5
LATE: 100% middling, 100% mike 6

Leyton Woolf

SOIL: Estrella Loam
PREVIOUS CROP: Cotton
VARIETY: DPL 55
FERTILIZER: 8 gal. UN 32 (May 15, June 22), 8 gal. UN32 water-run
INSECTICIDE: Seven applications
DEFOLIATION:
HARVEST DATES: Nov. 9, Dec. 6
TURNOUT: (1) 34.59%, 34.51%

Gilbert Rogers

SOIL: Contine clay
PREVIOUS CROP: Cotton
VARIETY: DPL 41
SEED RATE: 11 lbs.
PLANTING DATE: April 19
HERBICIDE: 1 1/4 pt Treflan + 1 1/2 lbs Caparal
FERTILIZER: June 1 - 175 lbs N (urea) July 6 - 150 lbs N (urea)
INSECTICIDES: Six applications
DEFOLIATION: Oct. 30 - 2 gal. Sod. chlorate. Nov 13 - 1 1/2 gal. Sod. chlorate
HARVEST: Nov. 23, Dec. 8
TURNOUT: 33.95%, 32.5, 30.66

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Duane Dobson

SOIL: Gilman loam

PREVIOUS CROP: Cotton

VARIETY: DPL 41

PLANTING DATE: April 21

FERTILIZERS: Preplant 150 lbs 18-18-0. Sidedress 100 lbs NH3 (twice), 5-23, 6-2

IRRIGATION: Seven irrigations: 4-7, 5-28, 6-20, 7-11, 7-28, 8-16, 8-28