2018
Cotton
Objective Yield
The purpose of the Cotton Objective Yield Survey is to…

• Forecast cotton yields each month
• Measure harvest loss
• Measure change in harvested acres.
2018 Cotton Objective Yield

Accuracy is essential!!
2018 Cotton Objective Yield

• Where do the samples come from?

Cotton fields from June Area Tracts
2018 Cotton Objective Yield

• How is the sample selected?
  – The larger the tract acreage, the greater chance of selection.
    • Large tracts could have more than one sample.
  – The larger the field, the greater the chance of selection.
    • Large fields could have more than one sample.
2018 Cotton Objective Yield

• Sample Field Kits
  – All forms needed are in the Field Kit Envelope.

– Field Kit Envelopes contain:
  • Sample, segment and tract numbers,
  • POID, Name and Address, telephone number,
  • Unit locations.

*Envelopes will be distributed this afternoon*
2018 Cotton Objective Yield

- Sample/Gleaning Bundles – All supplies needed to complete one sample/gleaning for the season are in a bundle
- Bundles include:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Gleaning</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
<td>Tyvek Envelope - Small</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>White Plant tags</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Poly bags</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>Rubber bands</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>Tyvek Envelope - Large</td>
</tr>
</tbody>
</table>
• Getting Started
  
  • Plan travel efficiently.
  • Using a county highway map and aerial photo, locate the segment sampled.
  • Drive to the segment, identify tract and sample field.
  • Locate the tract operator.
  • Begin your interview.
Questions?
Form A- Initial Interview

- Update tract acres planted to cotton since June Survey
- Identify the sample field
- Gain permission to enter the field
  - If can’t enter, conclude.
Form A - Initial Interview

- Complete for all samples during the August 1 survey period
- If new operator since June, then interview new operator and update kit envelope
- Notes on the Form A & kit envelope about unusual situations.
- Total Tract Acres for Harvest
Planted Acres reported in June Area
DO NOT CHANGE.
<table>
<thead>
<tr>
<th>FIELD NUMBER</th>
<th>TOTAL ACRES IN FIELD</th>
<th>ACRES PLANTED TO UPLAND COTTON</th>
<th>USE</th>
<th>ACRES OF UPLAND COTTON FOR HARVEST (Col. 2 minus Col. 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>22.0</td>
<td>20.0</td>
<td>2.0</td>
<td>.</td>
</tr>
<tr>
<td>##B-2</td>
<td>15.0</td>
<td>14.5</td>
<td>0.5</td>
<td>.</td>
</tr>
</tbody>
</table>

2. The total UPLAND COTTON acreage (column 6) for harvest in this tract is __________ ACRES. Verify that the ACREAGE is correct. If NOT, RE-ADD.
Form A

- Complete Columns 1-6 for all fields
- Field with ## is the selected field
- Column 4 & 5: Be sure to account for skip rows, ditches, roads, abandonment
  Ex: drowned out & drought areas
Drowned out / Abandoned Acres

Be sure to include this acreage in Column 5 so that your sample won’t fall here
This area **WAS** deducted on Form A in Columns 4 & 5.
Form A

Count

Do Not Count

Count
If selected field is not cotton,

1. AND no new cotton fields added
   - Conclude.
   - Do NOT select another field.

2. A new cotton field was added since June 1
   - Should not happen often
   - If more than one new field, select field closest to original sampled field
Questions on back of Form A
   For the selected sample field ONLY.

Item 3 - Copy over acres from selected field

Item 4 - Seeding Rate Units
   - Pounds per acre
   - Seeds per acre
Organophosphorous Use

- Read Pesticide Safety Section in Interviewer’s Manual (Pages 106 – 110).

If yes,

- Write notes on Form B and kit envelope.
- Be sure to check back with farmer several days before entering the field to insure your safety.

**Stay out of the field for 3 days (72 hours) after organophosphorous insecticide application.**
KEY to this Survey

Keeping in close contact with the farmer.

Know what’s happening in the sampled field

- Spraying?
- Harvest?
- Prevents lost samples
- Keeps you safe
- Ensures Data Quality
• Why do we need the counts and measurements?

- To set monthly cotton production forecasts and end of season production estimates.
Which month do you use Form B?
Every Month until harvest.

6 Form B’s are included in your kit envelope.
Form B

• What if you can’t make the counts on the first visit?

Send in a blank Form B with an explanation and lay out the units the following month.
Form B

• What if you had to select an alternative field?
  – Follow procedures for selecting an alternative field.
  – Write “ALTERNATIVE FIELD” across the top of Form B and send in.
Form B

- Item 1 - Pesticide Safety
  - Located at the top of each Form B.
  - Be aware of possible hazards.

1. Has operator applied pesticides with organophosphorous content to the sample field?
   - [ ] YES
   - [ ] NO

   If YES, enter latest application date ____________ and name of pesticide ____________
Form B

• Item 2

  – Determine the unit location
  – Enter the correct code for Unit 1 and Unit 2

UNIT LOCATION CODE . . . .

1. First visit to lay out unit
2. Unit relocated this month
3. Sample unit laid out previously

UNIT 1  UNIT 2
Enter Code 305  307

Go to item 4 when coded 3; otherwise go to item 3.
Item 3 – Row Space Measurements

- Row space measurements coupled with plant counts allows us to estimate plants per acre.
- Measure in **feet and tenths of feet**.
- Exclude skip rows and rows planted to other crops.

<table>
<thead>
<tr>
<th>UNIT 1</th>
<th>UNIT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>302</td>
</tr>
<tr>
<td>303</td>
<td>304</td>
</tr>
</tbody>
</table>

3. **ROW SPACE MEASUREMENTS**

   a. Measure distance from stalks in Row 1 to stalks in Row 2
      \(\text{(Exclude rows skipped and other crop)}\) ..................

   b. Measure distance from stalks in Row 1 to stalks in Row 5
      \(\text{(Exclude rows skipped and other crop)}\) ..................
Two things to remember about Counts within the 10-ft section:

1. Keep cotton separate by unit
2. Keep cotton separate from other items.
Form B

Counts within the Ten-Foot Section

• These counts are used to establish gross yield. The components are:
  – Bolls per 10 foot section
  – Average weight per boll
To avoid damage to the plants, make all counts from the outside of a unit rather than standing or squatting between Row 1 and Row 2.

Make counts systematically, from the ground upward.

Use a hand counter.
Form B
Counts Within the 10 Foot Section Cont’d

• Touch the base of each plant as you count.
• Include all plants regardless of size or condition.
• Item 4
Item 5

- Count the number of burrs, including those on the plant and in the row middle.
- Include open bolls on the ground.
Form B
Counts Within the 10 Foot Section Cont’d

• Burr – an open boll from which cotton has been removed by harvest or weather.

Note: If a boll has lock(s) damage from insects or disease, they are NOT burrs. They are open bolls.
Form B
Counts Within the 10 Foot Section Cont’d

- Item 6

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit 1</th>
<th>Unit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Clip first 10 OPEN BOLLS in each unit (record counts, pick seed cotton and bag separately by unit, discard burrs away from units. Begin at bottom of plant in Unit 1 and top of plant in Unit 2.)</td>
<td>313</td>
<td>323</td>
</tr>
<tr>
<td></td>
<td></td>
<td>333</td>
<td>343</td>
</tr>
</tbody>
</table>

CLIP ONLY THE FIRST 10 OPEN BOLLS IN EACH UNIT!
Item 6

– Clip the first 10 open bolls from each UNIT, not 10 from each row

Note: If you start clipping open bolls and get through Row 1 and Row 2 without getting 10 open bolls, use only those bolls already clipped.
Item 6

– For Unit 1, start counting and clipping from the bottom of each plant. For Unit 2, start at the top of each plant.

Label cotton as “First 10U1” and “First 10U2”
• Item 7
  – Clip other Open Bolls
  Record counts, pick cotton and bag separately by unit.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>314</td>
<td>324</td>
<td>334</td>
<td>344</td>
</tr>
</tbody>
</table>
• Item 7 cont’d
  – Clip and count the remaining open bolls in each row and record in Item 7.
  – Label as ‘Unit 1 – Other open bolls’ and ‘Unit 2 – Other open bolls’.
  – Cotton does not have to be bagged by row within each unit but it does have to be recorded in Item 7 by row.
Form B
Counts Within the 10 Foot Section Cont’d

• Item 8
  – Clip the damaged bolls from which no seeds will be harvested.
  – Check the boxes after you have clipped the damaged bolls from each row.
  – If in doubt, leave bolls on the plant and count in Item 9

8. Clip from plants all damaged or dried up, open or partially opened or large unopened bolls from which no seed cotton will be harvested. Discard away from units. .................................................

Check box
• Completely damaged bolls or bolls that will not produce any seed cotton should be clipped from the plants and discarded.

• If in doubt, leave the boll on the plant and count in Item 9.
• Item 9

  – Count the number of partially opened bolls in each row.
  – Any partially opened boll that might fall off while being counted should be included.
  – **DO NOT** count bolls already on the ground when you arrived

<table>
<thead>
<tr>
<th>Number of PARTIALLY OPENED BOLLS with cotton visible</th>
<th>318</th>
<th>328</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>338</td>
<td>348</td>
</tr>
</tbody>
</table>
Form B
Counts Within the 10 Foot Section Cont’d

• Item 10
  – Count the large unopened bolls in each row and record in Item 10
  – How do you determine size?
    • Use a boll gauge
  – What are considered large bolls?
    • One-inch or more in diameter (Will not pass through a boll gauge)

10. Number of LARGE UNOPENED BOLLS 1-inch or more in diameter ............... 319
    Pick up all large unopened and partially opened bolls which are on the ground (not attached to plants) Between Row 1 and Row 3 for each unit; discard away from units. Do not include in items 9 and 10.
Form B

- Here’s a photo of a large boll. Notice the boll gauge will not fit over the boll.
Form B

Weights
Item 11

Record the weight of the first 10 open bolls in each unit (could be less than 10 bolls).
After weighing, combine first 10 open bolls from both units into 1 poly bag for the regional lab.

– NOTE: Take cotton from the field in **TWO** bags, send to the Lab in **ONE** bag
Form B
Weights cont’d.

• Item 12
  – Record the weight of the Item 7 seed cotton in each unit.
  – 4 cells for each unit, if needed.

12. WEIGHT of item 7 seed cotton in each unit: ________________________________
    If more than 4 weighings are needed, combine weighings to include all weights in the 4 unit cells.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>316</td>
<td>326</td>
<td>336</td>
<td>346</td>
</tr>
<tr>
<td>317</td>
<td>327</td>
<td>337</td>
<td>347</td>
</tr>
</tbody>
</table>
Form B

Counts in the 3-foot section
Form B
Counts in the 3-foot section

• Provides counts to measure fruit survival.
• Counts are used to predict the proportion of squares, blooms, small bolls, and large bolls that will survive until harvest.
• Count procedures are the same for both units.

THREE-FOOT COUNT SECTION BEYOND ROW 1 IN UNIT 1 AND UNIT 2

Count all the plants. Count all the fruit on the plants in the 3-foot row section beyond Row 1. If no plants, enter zero.
Form B
Counts in the 3-foot section cont’d.

• Item 13
  – Number of plants in 3-foot row section
  • Touch the base of each plant as you count.
  • Include all plants, even dead ones.
  • Record 0 if no plants at all.

<table>
<thead>
<tr>
<th>UNIT 1, ROW 1</th>
<th>UNIT 2, ROW 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
<td>365</td>
</tr>
</tbody>
</table>

13. Number of PLANTS in 3-foot row section ...........................................
Form B
Counts in the 3-foot section cont’d.

• Item 14
  – Number of burrs, open, and partially opened bolls with cotton visible.
  • Damaged bolls from which no seed cotton will be produced are not counted

| Item 14 | 387 | 366 |
Form B
Counts in the 3-foot section cont’d.

• Burrs in the 3-foot section are:
  – NEVER clipped
  – Counted every month

• Open bolls in the 3-foot section are:
  – NEVER picked
  – NEVER clipped
  – Only counted
Item 15

- Number of Large unopened bolls
  - 1-inch or more – Use boll gauge
  - Damaged bolls, from which no seed cotton will be produced, are not counted
• Item 16
• Number of small bolls and blooms (1 or 2 days old)
  – Include any blooms open to any degree and bolls up to one inch in diameter.
  – Exclude bolls which are completely damaged and will not produce seed cotton.

16. Number of SMALL BOLLS and BLOOMS (1 or 2 days old)

*OCT 1, NOV 1 – Go to item 18*
Form B
Counts in the 3-foot section cont’d.

• Item 17
  – Number of squares
  – Count all large enough to be seen and identified.

<table>
<thead>
<tr>
<th>Item 17</th>
<th>Number of SQUARES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Include triangular-shaped buds 1/8 inch or more in width)</td>
</tr>
</tbody>
</table>
• Item 17 cont’d.
  – Small squares with triangular bract formation should be counted.
  – If in doubt, count the bud as a square as long as it is not a small LEAF bud.
Item 18

- Has any cotton been harvested by the operator in either of the sample units?
- Enter the correct code.
Form B

• These responses help reconcile large number of burrs or small number of open bolls that occur after harvest.

GENERAL
18. Has any cotton been harvested by the operator in either of the sample units?
   □ YES = 1
   □ NO = 3

Enter Code: 376
Item 19

- Do you expect the farmer to final harvest within the next 10 days?
- Is this the last time you expect to work this sample?

19. Do you expect the farmer to final harvest within the next 10 days (i.e., this is the last time you expect to work this sample)?

☐ YES  ☐ NO
Form B

- Monitor the farmer’s intentions closely in order to make a final visit within ten days of final harvest.
- Be sure to check either ‘yes’ or ‘no’ \textbf{EACH} time.
- If you check ‘yes’, and field is NOT harvested before the next month, continue to do counts, checking ‘yes’ every time.

19. Do you expect the farmer to final harvest within the next 10 days (i.e., this is the last time you expect to work this sample)?

\begin{itemize}
  \item \textbf{YES}
  \item \textbf{NO}
\end{itemize}
Form B

Forms B & E have a space to enter UPS tracking #

UPS Shipping Tracking Number for samples sent to the NOD: ______________
Form B

Any Questions?
2018 Cotton Objective Yield Survey

Form E – Post-Harvest Field Observations
Post-Harvest Yield Counts

Sample original units

Post-Harvest Units are 5 rows and 5 paces further into the field than the original units. The additional 5 rows and 5 paces have already been added to the label.
Form E

- Gleanings should be completed as soon as possible after harvest, but no later than 3 days after harvest.
- If the sample field has been plowed or disked since harvest, select an alternate field for gleaning, if one is available in the tract.
Form E

- Item 1
  - Check the appropriate box

1. Is an alternate field being used for post-harvest observations?

☐ YES – If YES, lay out post-harvest units in alternate field. The item 2 counts will be made in the post-harvest units.

☐ NO – If NO, go to the ORIGINAL UNITS and continue with item 2. If the original unit(s) cannot be located, lay out post-harvest units and make the item 2 counts from the post-harvest units.
Form E

• Item 2
  – Count large unopened bolls and partially opened bolls on the plant and the ground.

<table>
<thead>
<tr>
<th>UNIT 1</th>
<th>UNIT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Plant</td>
<td>On Ground</td>
</tr>
<tr>
<td>701</td>
<td>702</td>
</tr>
</tbody>
</table>

2. Count the number of LARGE UNOPENED BOLLS (1 inch or more in diameter) and PARTIALLY OPENED BOLLS with cotton visible.
Form E

- IN POST-HARVEST UNITS – Item 3
  - Measure distance from stalks in Row 1 and stalks in Row 2.
  - Exclude rows skipped and those planted to other crops.
  - Record in feet and tenths of feet.
  - Measure for BOTH units.

<table>
<thead>
<tr>
<th>IN POST HARVEST UNITS</th>
<th>UNIT 1</th>
<th>UNIT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Measure distance from stalks in Row 1 to stalks in Row 2 (Exclude rows skipped and other crop)</td>
<td>708 .__</td>
<td>709 .__</td>
</tr>
</tbody>
</table>
Form E

• Item 4
  – Measure distance from stalks in Row 1 to Row 5.
  • Exclude rows skipped and those planted to other crops.
  • Record in feet and tenths of feet.
  • Measure distance for BOTH units.
Form E

• Item 5
  – Pick **ALL** cotton **ON** the plants.
  – Place **ALL** cotton in one poly bag.
  – Label the cotton ‘Post-Harvest, From Plants’
    • Label first bag ‘1 of 1’.
    • If a second bag is needed, label first ‘1 of 2’ and second ‘2 of 2’.

5. Pick all cotton on the **PLANTS**, and place the cotton from both units in one poly bag .................

  a. If there is **NO** cotton attached to plants .........................................................
5. Pick all cotton on the **PLANTS**, and place the cotton from both units in one poly bag .................

   a. If there is **NO** cotton attached to plants ..............................................................
Form E

• Item 6
  – Pick up ALL loose cotton and cotton from open bolls and burrs **ON THE GROUND** in each row and middle.
  – Clean dirt and debris from the cotton before placing in a second poly bag.
• Item 6 cont’d.

– If there is no cotton on the ground, check the appropriate area.

6. Pick up all loose cotton and cotton from open bolls and burrs **ON THE GROUND** in each row and middle. Place the cotton from both units in a second poly bag. .............................................................

a. If there is NO cotton on the ground ........................................................................................................
Cotton picked from the plant (Item 5) must be kept separate from cotton picked up off the ground (Item 6).
Form E

- When complete, sign your name, enter your enumerator ID and your supervisor’s ID.
Form E

- Complete ID tags and ATTACH to EACH poly bag.
- Put ALL poly bags in a Tyvek envelope.
- Enclose the Form E in the Tyvek envelope.
- Attach UPS label to Tyvek envelope.
- Send to the National Lab.
Form E

- Items 8, 9 and 10 will be completed by the lab.

NATIONAL LABORATORY DETERMINATIONS

(OFFICE USE ONLY)

8. Date (MMDD______________________________) .................................. Code

9. Oven-dried weight of cotton picked from PLANTS ........................................

10. Oven-dried weight of cotton picked ON THE GROUND ..............................

<table>
<thead>
<tr>
<th>Code</th>
<th>710</th>
<th>715</th>
<th>716</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Code</td>
<td>780</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grams to tenths

.
Form E

• Complete a second Form E if field is harvested a second time.

• Second Form E sample will be 10 rows and 10 paces farther into the field.
Objective Yield National Lab Preferred Packaging

Dan Kolterman
National Lab Coordinator
2018
Preferred Packaging- Cotton OY

• Multiple samples may be placed in same Tyvek envelope.
  – Be sure ID cards are securely attached to each sample.

• ID card should be on the outside of the plastic bag, do not put it in with cotton.
Preferred Packaging - Cotton OY
Preferred Packaging - Cotton OY

Gleaning
Remove as much debris as possible

Securely attach 1 ID card to each poly bag.

Check appropriate gleaning type

Include Form E in Tyvek envelope
Preferred Packaging - Cotton OY

- **NO** Staples
- **NO** Duct Tape
- **NO** Wrapping of any sort

- One strip of packing tape is sufficient over seal if needed.