

# AGRICULTURAL RESOURCE MANAGEMENT SURVEY

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 Phase II



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## COTTON PRODUCTION PRACTICES AND COSTS REPORT FOR 2019

<b>VERSION</b> 11	<b>ID</b> _____	<b>TRACT</b> 01	<b>SUBTRACT</b> ___	<b>C-TYPE</b> 106
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CONTACT RECORD		
DATE	TIME	NOTES

**INTRODUCTION:**  
*[Introduce yourself, and ask for the operator. Rephrase in your own words.]*

We are collecting information on practices and costs used to produce cotton and need your help to make the information as accurate as possible. The information you provide will be used for statistical purposes only. In accordance with the Confidential Information Protection provisions of Title V, Subtitle A, Public Law 107-347 and other applicable Federal laws, your responses will be kept confidential and will not be disclosed in identifiable form to anyone other than employees or agents. By law, every employee and agent has taken an oath and is subject to a jail term, a fine, or both if he or she willfully discloses ANY identifiable information about you or your operation. Response is voluntary.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0535-0218. The time required to complete this information collection is estimated to average 65 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

H H M M

**BEGINNING TIME** [MILITARY]

**SCREENING BOX**

*[Name, address and partners verified and updated if necessary]*

<b>POID</b> _____	<b>POID</b> _____
PARTNER NAME	PARTNER NAME
ADDRESS	ADDRESS
CITY                      STATE      ZIP              PHONE NUMBER	CITY                      STATE      ZIP              PHONE NUMBER
<b>POID</b> _____	<b>POID</b> _____
PARTNER NAME	PARTNER NAME
ADDRESS	ADDRESS
CITY                      STATE      ZIP              PHONE NUMBER	CITY                      STATE      ZIP              PHONE NUMBER

# COTTON FIELD SELECTION

TOTAL PLANTED  
ACRES

0050

1. How many acres of cotton did this operation plant for the 2019 crop year? .....

[If no acres were planted, review Screening Survey Information Form, make notes, then go to item 4 on back page.]

[If skip row cotton was planted, exclude the acreage in the skips.]

I will follow a simple procedure to make a random selection from the cotton fields planted for the 2019 crop.

TOTAL NUMBER  
OF FIELDS  
PLANTED

0020

2. What is the TOTAL number of cotton fields that were planted on this operation?

[If only one field, enter "1" and go to item 4.] .....

3. Please list these fields according to identifying name/number or describe each field, then I will tell you which field has been selected. [If there are more than 18 fields, make sure item 2 is TOTAL fields planted, and list only the 18 fields closest to the operator's permanent residence. If respondent is unable to identify or describe the fields, use the Field Selection Grid Supplement.]

FIELD NAME, NUMBER OR DESCRIPTION

FIELD NAME, NUMBER OR DESCRIPTION

1
2
3
4
5
6
7
8
9

10
11
12
13
14
15
16
17
18

**'Apply Random Operation Label'**

4. **[ENUMERATOR ACTION:** *Circle the pair of numbers on the above label associated with the last numbered field in item 3. Select the field according to the number you circled on the label, and record the selected number. If only one field, enter 1.*]

**SELECTED FIELD NUMBER**

0021

5. **The field selected is** \_\_\_\_\_ *(field name/number/description).*  
**During this interview, the cotton questions will be about this selected cotton field.**  
*[Be sure the operator can identify the selected field.]*

6. **For the randomly selected field above, please provide the Farm Service Agency (FSA):**

*[If the physical field in this survey spans multiple FSA administrative fields, please include the farm, tract, and field number for the largest administrative field. These numbers are field identifiers that USDA uses to administer farm programs like crop insurance, commodity programs, and conservation programs. Having this information helps USDA make better use of other data you have provided to USDA and will improve the types of statistical analysis that can be done with the responses from this survey.]*

- a. Farm Number (up to 8 digits) .....
- b. Tract Number (up to 7 digits) .....
- c. Field Number (up to 4 digits, exclude subfield letters) .....

NUMBER
1070
1071
1072

**OFFICE USE  
 OY Field Substituted**

0022

**B** FIELD CHARACTERISTICS---SELECTED FIELD

**B**

1. How many acres of cotton did this operation plant in the selected field for the 2019 crop? *[If skip-row cotton was planted, exclude acreage in the skips].* ..... ACRES  
1301

a. Are the acres in the selected field **CERTIFIED ORGANIC?** ..... YES=1  
NO = 3 CODE  
1300

*[If YES, skip 1b and ask item 2]*

b. Was the selected field transitioning into organic cotton production in 2019? ..... YES=1 1399

2. Were the acres in the selected field -- 1 owned by this operation?  
2 rented for CASH with the payment being a fixed cash amount?  
3 rented for CASH with the payment being a flexible cash amount?  
4 rented for a SHARE of the crop?  
5 rented for some combination of CASH and SHARE of the crop?  
6 used RENT FREE? ..... CODE  
1302

*[If field is CASH RENTED (item 2 = 2, 3 or 5), ask item 3, else go to item 4.]*

3. What was the cash rent paid per acre for the selected 2019 COTTON field? ..... DOLLARS &  
CENTS PER ACRE 1303

*[If field is SHARE RENTED (item 2 = 4 or 5), ask--]*

4. What was the landlord's share of the crop from the selected field? ..... PERCENT  
1304

*[If field is RENTED (item 2 = 2, 3, 4, 5, or 6), ask--]*

5. What was the total cost for all inputs provided by any landlord for the 2019 crop on the selected field? *(Include the costs for all inputs, such as seed, fertilizer, chemicals, technical services, custom operations, and irrigation. Exclude real estate tax expenses and lime costs paid by the landowner.)* ..... DOLLARS & CENTS  
PER ACRE OR TOTAL DOLLARS 1305 OR TOTAL DOLLARS  
1306

7. In what year did you *(the operator listed on the label)* start operating the selected field? ..... YEAR 1312

8. On what date was the selected field planted? ..... MM DD YY 1308

9. What was your yield goal for cotton lint at planting for the selected field? *(Exclude pounds of seed cotton.)* ..... POUNDS PER  
ACRE 3316

10. What type of cotton was planted on the selected field? . . . . 1 Upland  
2 Pima-extra long staple or ELS ..... CODE 3317

**11. What was the source and cost of---**

(*Include* operator, landlord, and contractor costs. *Include* cost of seed treatment and technology fee. *Exclude* any Bt seed payment received for participating in the Pink Bollworm program.)

- a. Genetically modified organism/genetically engineered (GMO/GE) purchased seed? . . . . .
- b. Non genetically modified organism/genetically engineered (Non-GMO/GE) purchased seed? . . . . .
- c. Homegrown seed? . . . . .

DOLLARS & CENTS PER UNIT	UNIT CODE	PERCENT of SEED PLANTED
	1=POUNDS 22=ACRE 23=APPROX 50 LB. BAG 40 =250,000 SEED BAG	
1214	1215	1216
1217	1218	1219
		1318

**100%**

**CENTS PER  
POUND**

3321
------

[If homegrown, ask---]

- (i) What was the cost for cleaning and treating this seed? . . . . .

**UNIT CODES  
for Seeding Rate**  
 1 = POUNDS/ACRE  
 23 = 50 LB BAGS/ACRE  
 25 = SEEDS/ACRE  
 38 = SEEDS/FOOT  
 40 = 250,000 SEED  
 BAGS/ACRE

**UNITS**

**12. What was the seeding rate per acre the first time the selected field was planted? . . . . .**

1313

3314

	CODE
1 Drilled? 2 Planted in Conventional Rows? 3 Broadcast on the selected field? . . . . .	1316

- a. What method of seeding did you use on the selected field? . . . . .

[If drilled or planted (item 12 = 1 or 2), ask---]

- b. What was the average cotton row width? . . . . .

**INCHES**

1322
------

**CODE**

**13 Did the selected field have skip-row cotton? . . . . .**

YES = 1  
NO = 3

1323
------

[If no skip-row, go to item 14]

- a. What was the common skip pattern? . . . . .

ROWS OF COTTON	BY	ROWS OF SKIP
1324		1325

**INCHES**

- b. What was the average width of the skip? . . . . .

1326
------

**ACRES**

**14. How many acres in the selected field had to be replanted to cotton?**

(Acres replanted = Number of acres X the number of times replanted.) . . . . .

1315
------

**CODE**

- 15. Was a hybrid cotton seed planted in the selected field? . . . . .

YES = 1  
NO = 3

1327
------

	<b>CODE</b>	
16 For the 2019 cotton crop, was the cotton seed--	1 Treated with a pesticide prior to purchase? 2 Treated with a pesticide after purchase? 3 Not treated with a pesticide?	3062

[If item 16 = 1 or 2, ask--]

a. What was the name of the seed treatment? Write seed treatment name in the box provided. ....	<b>SEED TREATMENT NAME</b>

b. What was the seed treatment code? Enter the appropriate seed treatment code from the Respondent Booklet (Pages 3 - 4). (Enter 999 if a seed treatment was applied but is not listed. Enter "-1" if the seed treatment is not known.) .....	<b>CODE</b>
	2325

	<b>2019</b>	<b>2018</b>
	YES = 1 NO = 3	Yes = 1 N/A no cotton in field = 4
17 Did you plant GMO/GE seeds for the 2019 or 2018 crop years? .....	2300	2301

[If item 17 = 1 for either year, continue. Otherwise, go to item 19.]

18. Did the cotton planted on the selected field have any of the following genetically modified organism/genetically engineered (GMO/GE) traits in 2019 or 2018? [Leave the second column blank if field was not planted with cotton in 2018.]--  a. Insect Resistance (Bt)..... b. With multiple (pyramided) modes of action..... c. Herbicide Tolerance (HT) to Glyphosate(e.g. Roundup Ready®)..... d. Herbicide Tolerance (HT) to 2, 4-D (e.g. Enlist®)..... e. Herbicide Tolerance (HT) to Dicamba (e.g. Extend®)..... f. Herbicide Tolerance (HT) to Glufosinate (e.g. Liberty Link®).....	<b>2019</b> YES = 1 NO = 3	<b>2018</b> YES = 1 N/A no cotton in field = 4
	2302	2303
	2304	2305
	2306	2307
	2308	2309
	2310	2311
	2312	2313

19. Did the COTTON planted on the selected field have any of the following non-genetically modified/genetically engineered (non-GMO/non-GE) traits in 2018 or 2019? [Leave the second column blank if field was not planted with cotton in 2018.]--  a. Bacterial blight resistance..... b. Root-Knot nematode (RKN) resistance..... c. Verticillium wilt tolerance..... d. Fusarium wilt tolerance (e.g. Race 4 FOV).....	<b>2019</b> YES = 1 NO = 3	<b>2018</b> YES = 1 /A no cotton in field = 4

20. For the 2019 cotton crop, did you plant a commercial seed product on the selected field? .....	<b>YES = 1</b>	2340
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[If item 20 is "Yes", ask--]

**COMMERCIAL SEED PRODUCT NAME**

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a. What was the name of the seed product?  
Write the seed product name in the box provided (e.g. DP1820B3XF, PHY250 W3FE, ST4550GLTP) . . . . .

b. What was the seed product code? Enter the appropriate product code from the Respondent Booklet (Page 5). (Enter 999 if a seed product was purchased but the product is not listed. Enter "-1" if the product is not known.) . . . . .

**CODE**

2343

21. Did you use a genetically engineered, insect resistant seed variety for the 2019 crop?

**CODE**

YES = 1    2326  
NO = 3

[If item 21 is yes, ask--]

a. Did you choose the resistant seed variety used on the selected field primarily to--

- 1 Increase yields through improved pest (weed or insect) control?
  - 2 Decrease pesticide input costs?
  - 3 Save management time or labor or improve ease of management?
  - 4 Reduce refuge requirements
  - 5 For some other reason(s)? [Specify \_\_\_\_\_]

**CODE**

..... 2327

22. Was a refuge for insect pests planted on the selected field? [If item 22 is yes, ask---, else go to item 24]. . . . .

**CODE**

YES = 1  
NO = 3

23. What percent of the field was used as refuge in order to comply with Bt cotton insect resistant management guidelines? . . . . .

**PERCENT**

2328

a. Within the selected field. . . . .

ACRES

xxxx

24. How many acres adjacent to, or as a separate block within ½ mile, of the conventional seeds is a refuge? . . . . .

25. Has harvest of the selected field been completed? . . . . .

**CODE**

YES = 1    1328  
NO = 3

26. Now I need information about the acres harvested (or to be harvested) and the yields from the selected field.

How many acres in the selected cotton field were (or will be)--

a. harvested for lint? . . . . .

b. abandoned? . . . . .

	1 What yield per acre did you (or do you expect to) get for cotton lint--	2 UNIT CODE 1 Pounds 2 CWT 3 Tons
ACRES	UNITS PER ACRE	CODE
1346 _____	1347 _____	1348
1351 _____		

CROP CODE LIST for item 27 – PREVIOUSLY PLANTED CROPS					
190 Barley	311 Grasses including clover	22 Rye	318 No crop planted		
6 Corn for grain	1 Hay, alfalfa	240 Sorghum, all	291 Other field crop		
5 Corn for silage	11 Hay, all other	26 Soybeans	292 Other crop		
283 Cotton (all)	15 Oats	263 Wheat, spring	312 Cover crop mix		
302 CRP	21 Rice	165 Wheat, winter	16 Peanuts		

27. Please report what crops were previously PLANTED on the majority of the selected field, including cover crops.

1 What crops were PLANTED on the selected field in---			2 What type of crop was grown on the selected field? 1 GMO/GE Herbicide Tolerant (HT) 2 GMO/GE Insect Resistant (Bt) 3 Stacked (HT and Bt) 4 Not GMO/GE	3 Was this a cover crop?  YES = 1 NO = 3	4 How did you terminate this cover crop? 1 TillerLin 2 Herbicide 3 Rolled 4 Grazed out 5 Harvested for forage 6 Harvested for grain CODE	5 Was this field irrigated?  YES = 1 NO = 3	6 Was this field no-tilled or strip-tilled? 1/  YES = 1 NO = 3
SEASON AND YEAR	CROP NAME	CROP CODE					
a. SPRING/SUMMER of 2019?	Cotton	283	1486			2345	1344
b. FALL of 2018? .....		1343	1487	1470	1471	2344	1345
c. SPRING/SUMMER of 2018? .....		1369	1488	1472	1473	2370	1371
d. FALL of 2017? .....		1372	1489	1474	1475	2373	1374
e. SPRING/SUMMER of 2017?		1375	1490	1476	1477	2376	1377
f. FALL of 2016? .....		1378	1491	1478	1479	2379	1380
g. SPRING/SUMMER of 2016?		1381	1492	1480	1481	2382	1383
h. FALL of 2015? .....		1366	1493	1482	1483	2367	1368
i. SPRING/SUMMER of 2015?		1340	1494	1484	1485	2341	1342

1/ No-till means leaving soil and previous crop residue undisturbed from harvest to planting. Strip-till means tilling a narrow strip over the row, leaving soil and previous crop residue between the rows undisturbed.

[If a cover crop was planted in Spring/Summer/Fall 2019, ask—]

j. What was the seed cost per acre for the cover crop? .....

k. What was the per-acre cost-share or financial assistance payments received for the cover crop (enter zero if no program payment was received)? .....

**DOLLAR  
S &  
CENTS**

1468	____
1495	____
YES = 1 NO = 3	XXXX

28. Do you have a conservation plan that specifies practices to control soil erosion?.....

29. Is the selected field classified as “Highly Erodible Land”? (Cropland identified as highly erodible is subject to highly erodible land conservation (HELC) requirements. Producers who

YES = 1  
NO = 3      CODE



receive farm program payments are required to have (and apply) a written soil conservation plan, prepared in accordance with Federal standards.) . . . . .	1404
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30. <b>Does the selected field contain a wetland?</b> (Wetlands are subject to Wetland Conservation (WC) or "swampbuster" requirements. Producers who receive farm program payments must refrain from draining wetlands to make them ready for crop production.) . . . . .	YES = 1 NO = 3	1405
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31. <b>What is the slope of the selected field?</b> . . . . .	<div style="border: 1px solid black; padding: 2px;">                 Nearly level (0 - 2%)                  Even, moderate grade (3 - 9%)                  Variable, moderate grade                  Even, steep grade (over 10%)                  Variable, steep grade             </div>	CODE 2400
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32. <b>What is the primary soil type of the selected field?</b> . . . . .	<div style="border: 1px solid black; padding: 2px;">                 Loam                  Clay                  Sandy                  Mixed                  Silty             </div>	CODE 2401
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33. Next we will ask about soil and water concerns that you have on the selected field.

RESOURCE CONCERNS	CODE  YES = 1 NO = 3	Have you received technical assistance from any of the following sources to evaluate this resource concern? (Report up to 3 sources that you received assistance from.)		
		Source 1	Source 2	
a. Water-driven erosion. . . . .	2407	2417	2427	
b. Wind-driven erosion. . . . .	2408	2418	2428	
c. Soil compaction. . . . .	2409	2419	2429	
d. Poor drainage. . . . .	2410	2420	2430	
e. Low organic matter. . . . .	2411	2421	2431	
f. Water quality. . . . .	2412	2422	2432	
g. Other concerns. . . . .	2413	2423	2433	
*h. No significant concerns. . . . .	2414	2424	2434	

**\*ENUMERATOR NOTE:** Enter Yes = 1 for item h, *No significant concerns*, **ONLY** if the respondent replies NO = 3 to all other concerns (items a – g).

34. <b>Did the land use practices for this field include subsurface drainage?</b>	YES = 1 NO = 2	2402
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35. <b>Has the selected field been in any conservation program contracts for which you or your landlord received (or expected to receive) cost-sharing payments, stewardship payments, or incentive payments?</b>	UNIT CODE 1 = Current 2 = Past 3 = Never	
a. Environmental Quality Incentives Program. . . . .		2611
b. Conservation Stewardship Program. . . . .		2612
c. Conservation Reserve Program. . . . .		2613
d. Other Federal, State, Local, or non-Government source. . . . .		2614



**36. Now I need information on soil, crop, and land management practices or activities used on the selected field and any financial or technical assistance you may have received in conjunction with those practices.**

a. From this list, please check any practices or activities that you used on the selected field this year or at any time in the past.

On-field Soil and Crop Management		
No-Till/Strip-Till	Grass Waterway	<input type="checkbox"/> 30 Implement an integrated pest management plan (written plan)
Conservation Tillage (except no-till/strip-till)	<input type="checkbox"/> 20 Implement a nutrient management plan (written plan)	Drift reducing spray nozzles
Cover crop (single species)	<input type="checkbox"/> 26 Split nitrogen application with at least 50% applied after planting	<input type="checkbox"/> 32 Targeted sprayer (electrical control)
Cover crop mix	Precision nutrient application	<b>Adjacent to Field</b>
Contour Farming	No fertilizer application more than 30 days before planting	<input type="checkbox"/> 33 Filter strip
Conservation crop rotation	Controlled release fertilizer	<input type="checkbox"/> 34 Field border
Terraces	Subsurface phosphorous application	Riparian Buffer (grass or forest)

b. For each practice or activity checked in 27a, please complete one line of this table.

1	2	3		4	5
Practice or Activity on the selected field	Practice Code (see item 27a)	On this field, for this practice, have you ever received at any time--		Does this practice or activity help satisfy--	Was this practice or plan used on this selected field in 2019?
		Technical or planning assistance?	Financial assistance?		
		1 USDA NRCS field staff, cooperative extension, or Technical Service Providers 2 Other Sources of Outside Assistance, such as Soil and Water Conservation Service or a conservation organization 3 No Assistance Needed	1 Environmental Quality Incentives Program (EQIP) 2 Conservation Stewardship Program (CSP) 3 Conservation Reserve Program (CRP) 4 Other Federal, State, and Local Programs 5 No Assistance Needed	1 A Federal regulatory requirement 2 Highly Erodible Land Conservation Compliance 3 Does not relate to any regulation or compliance requirement	YES = 1 NO = 3
	1610	1611	1612	1613	1614
	1615	1616	1617	1618	1619
	1620	1621	1622	1623	1624
	1625	1626	1627	1628	1629
	1630	1631	1632	1633	1634
	1635	1636	1637	1638	1639
	1640	1641	1642	1643	1644
	1645	1646	1647	1648	1649

37. In 2019, was the cotton in the selected field covered by a single or named peril crop insurance policy (e.g. hail, replant, wind, freeze)? . . . . . YES = 1 2520  
NO = 3

[If YES, ask--]

a. In 2019, was the cotton in the selected field covered by more than one single or named peril crop insurance policies (e.g. hail, replant, wind, freeze)? . . . . . YES = 1 2517  
NO = 3

b. What was the dollar amount of coverage per acre for the single peril policy covering the selected field? . . . . . 2521  
\_\_\_\_\_

c. What was the percent deductible for the single peril policy covering the selected field? (Record no deductible as 0.) . . . . . 2522  
\_\_\_\_\_

d. What premium cost per acre did you pay for the single peril policy covering the selected field? . . . . . 2523  
\_\_\_\_\_

e. Did you (or will you) collect an indemnity payment for the selected field from the single peril policy during 2019? . . . . . YES = 1 1394  
NO = 3

38. In 2019, was the cotton in the selected field covered by a multi-peril crop insurance policy?  
 YES – [Enter code 1 and continue.]     NO – [Go to Section C.] . . . . . 1385  
CODE

a. Which coverage did you obtain? . . . . .  
1 Federal CAT (basic catastrophic insurance)  
2 Yield based . . . . . 3386  
3 Revenue based  
4 Other multi-peril crop insurance  
CODE

[If item 38a = 2, ask---]  
(i) What percent of yield coverage did you select for the selected field? . . . . .  
(ii) What percent of price coverage did you select for the selected field?

[If item 38a = 3, ask---]  
(iii) What percent of revenue coverage did you select for the selected field? . . . . .

b. What type of unit coverage did you purchase for the selected field? . . . . . 2524  
1 Basic  
2 Optional  
3 Enterprise  
CODE

c. In what year did you (the operator listed on the label) first purchase multi-peril crop insurance on the selected field? . . . . . 2525  
\_\_\_\_\_  
YEAR

d. What is the 2019 Approved APH (actual production history) yield for the selected field? . . . . . 2526  
\_\_\_\_\_

e. What was the premium paid for multi-peril crop insurance for the selected field in 2019? (Exclude any sian-un) . . . . . 2527  
\_\_\_\_\_

f. Did you (or will you) collect an indemnity payment for the selected field from federal crop insurance during 2019? . . . . . YES = 1 2528  
NO = 3

**C NUTRIENT or FERTILIZER APPLICATIONS---SELECTED FIELD**

**C**

	<b>CODE</b>	<b>EDIT TABLE</b>
1. <b>Were commercial nutrients or fertilizers applied to the selected field for the 2019 cotton crop?</b> <i>(Include those from operators, landlords, and contractors.)</i> . . . . . <b>YES = 1</b>	0202	0200

[If **COMMERCIAL** nutrient or fertilizer applied, continue; else go to item 6.]

2. <b>How many commercial nutrient or fertilizer applications were made to the selected field for the 2019 crop?</b> <i>(Include applications made by airplanes and custom applicators.)</i> . . . . .	<b>NUMBER</b> 0203
--	-----------------------

3. **Now I need to record information for each application.**

**CHECKLIST**

<input type="checkbox"/> <b>INCLUDE</b> <input type="checkbox"/> Custom applied nutrients and fertilizers <input type="checkbox"/> Nutrients or fertilizers applied in the fall of 2018 and those applied earlier if the selected field was fallow in 2018. <input type="checkbox"/> Commercially prepared manure or compost	<input type="checkbox"/> <b>EXCLUDE</b> <input type="checkbox"/> Micronutrients <input type="checkbox"/> Unprocessed manure <input type="checkbox"/> Nutrients or fertilizers applied to previous crops in the selected field <input type="checkbox"/> Lime and Gypsum/landplaster
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<b>Office Use Lines in Table</b>	<b>TABLE 001</b>	0299
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APPLICATION CODES for COLUMN 6	
1 Broadcast, ground without incorporation	5 In irrigation water
2 Broadcast, ground with incorporation	6 Chisel/Injected or knifed in
3 Broadcast, by aircraft	7 Banded in or over row
4 In seed furrow	8 Foliar or directed spray

L I N E	2 <b>MATERIALS USED</b>  [Enter percentage analysis or actual pounds of plant nutrients applied per acre.]  [Show Common Nutrients or Fertilizers in Respondent Booklet.]				3 <b>What quantity was applied per acre?</b>  [Leave this column blank if actual pounds of nutrients were reported.]	4 [Enter material code.]  1 Pounds 12 Gallons 19 Pounds of actual nutrients	5 <b>When was this applied?</b>  1 In the fall before seeding 2 In the spring before seeding 3 At seeding 4 After seeding	6 <b>How was this applied?</b>  [Refer to code list above.]	7 <b>How many acres were treated in this application?</b>  <b>ACRES</b>
	N Nitrogen	P <sub>2</sub> O <sub>5</sub> Phosphate	K <sub>2</sub> O Potash	S Sulfur					
	<b>01</b>	31	32	33	34	36	37	38	39
<b>02</b>	31	32	33	34	36	37	38	39	40 _____
<b>03</b>	31	32	33	34	36	37	38	39	40 _____
<b>04</b>	31	32	33	34	36	37	38	39	40 _____
<b>05</b>	31	32	33	34	36	37	38	39	40 _____
<b>06</b>	31	32	33	34	36	37	38	39	40 _____
<b>07</b>	31	32	33	34	36	37	38	39	40 _____
<b>08</b>	31	32	33	34	36	37	38	39	40 _____

4. <b>Were any nutrients or fertilizers applied by custom applicators?</b>	<b>CODE</b>
--	-------------

YES - [Continue]

NO - [Go to item 5]

YES=1  
NO = 3

XXXX

a. Are you able to report the cost of nutrient or fertilizer materials and custom application separately?

OFFICE USE

0215

YES - [Continue]

NO - [Go to item 5]

b. Excluding the cost of the nutrient or fertilizer materials, how much was spent for custom application of nutrients or fertilizers on the selected field?

DOLLARS & CENTS PER ACRE

OR TOTAL DOLLARS

0219

0220

(Include operator, landlord, and contractor costs. Include costs for sulfur and micronutrients. Exclude custom application of lime, gypsum, purchased manure and purchased compost.) If material and application costs can't

5. What was the TOTAL COST of all nutrient or fertilizer products applied to the selected field? (Include operator, landlord, and contractor costs, as well as the costs for sulfur and micronutrients. [If custom applied and the cost of material can be separated from application costs, include the cost of materials ONLY; otherwise, include both the material and application costs.] Include materials applied to the selected field if it was fallow in 2018.

DOLLARS & CENTS PER ACRE

OR TOTAL DOLLARS

0221

0222

6. Was gypsum applied to the selected field for the 2019 cotton crop?

CODE

0218

YES = 1

7. Was a soil test for Soil Organic Matter performed on this COTTON field at some point in the last 10 years?

CODE

3225

YES = 1

[If item 7 = 1, ask--]

PERCENT

3226

a. What was the percentage of Soil Organic Matter on the selected field for the most recent test?

NUMBER

3227

b. How many times have you tested the selected field for Soil Organic Matter in the last ten years?

[If item 10b is more than 1 ask--]

CODE

3228

c. Based on these tests, is your Soil Organic Matter content:

- 1 Increasing
- 2 Decreasing
- 3 Staying roughly the same

8. Was a soil or plant tissue test performed on the selected cotton field in 2018 or 2019 for the 2019 crop?

YES [Continue.]

NO [Go to item 13.]

CODE

9. Was a soil test for phosphorus performed on the selected cotton field in 2018 or 2019 for the 2019 crop?

YES = 1  
NO = 3

0225

[If item 8 = 1, ask--]

POUNDS PER ACRE

0226

a. How many pounds of phosphorus (per acre) were recommended (by the phosphorus test)?

CODE

10. Was a soil test for nitrogen performed on the selected cotton field in 2018 or 2019 for the 2019 crop?

YES = 1  
NO = 3

0227

[If item 10 = 1, ask--]

POUNDS PER ACRE

0228

a. How many pounds of nitrogen (per acre) were recommended (by the nitrogen test)?

CODE

11. Was a plant tissue test or leaf analysis for nutrient deficiency performed on the selected field in 2018 or 2019 for the 2019 crop? YES = 1 NO = 3 0229

12. How much was spent for these soil and plant tissue tests on the selected field? [Include landlord and contractor costs.] DOLLARS & CENTS PER ACRE OR TOTAL DOLLARS 0230 0231

[If tests were done at no cost continue, otherwise go to item 12b]

a. What is the reason tests were done at no cost?--- 1 Soil/plant tissue test provided free of charge by dealer, crop consultant, or extension service. 2 Soil/plant tissue test costs were included in the total fertilizer costs reported in item 5. 3 Some other reason. CODE 0232

b. Did you receive a payment from the Conservation Stewardship Program for performing a stalk or leaf tissue test for Nitrogen application? YES = 1 3231

[ENUMERATOR ACTION: Refer to the Fertilizer Table, column 2. If nitrogen (N) was applied, complete item 13. If NO nitrogen applied, go to item 14.]

13. Was the amount of nitrogen you decided to apply to the selected field based on--- CODE 0233 a. Results of a soil or plant tissue test? YES = 1 0234 b. Crop consultant recommendation? YES = 1 0235 c. Fertilizer dealer recommendation? YES = 1 0236 d. Extension Service recommendation? YES = 1 0237 e. Cost of nitrogen and/or expected commodity price? YES = 1 0238 f. Contractor recommendation? YES = 1 0239 g. Routine practice (operator's own determination based on past experience, yield goal, etc.)? YES = 1

14. Is lime ever applied to the selected field? YES = 1 CODE 0242

[If no lime applied, go to item 15; else continue.]

a. On average, how many years are there between applications of lime to the selected field? YEARS 0243

b. How many tons of lime were applied per acre the last time it was applied to the selected field? TONS PER ACRE 0244

c. Was lime applied to the selected field in 2018 or 2019 for the 2019 crop? YES = 1 CODE 0240

15. Was non-commercial manure (from own farm, from a neighbor's farm, etc.) or other organic material (including compost) applied to the selected field for the 2019 cotton crop? (Exclude commercially prepared manure.) CODE 0246 YES - [Enter code 1 and continue] NO - [Go to Section D]

a. How many acres in the selected field was manure or compost applied to? ACRES 0247

b. What was the amount of manure or compost applied to the selected field? .....

1 Tons 2 Gallons 3 Bushels 4 Cubic Yards	CODE	UNITS PER ACRE	OR	TOTAL UNITS
	0248	0249		0250

AND

c Of the total manure or compost applied to the selected field for the 2019 crop, what was the percent of manure applied---

(i) in the fall before planting? .....	+	PERCENT
(ii) in the spring before planting? .....	+	0254
(iii) after planting? .....	+	0255
		0256
	=	100%

d Was the manure or compost--- .....

1 Lagoon liquid? 2 Slurry liquid? 3 Semi-dry or di.....	CODE
	0257

e Was the manure or compost--- .....

1 Broadcast or sprayed <i>without</i> incorporation? 2 Broadcast or sprayed <i>with</i> incorporation? 3 Injected/knifed in? 4 Sprayed using irrigation systems?	CODE
	0258

f Was the major source of the manure or compost from--- .....

1 Beef cattle? 2 Dairy cattle? 3 Hogs? 4 Sheep? 5 Poultry? 6 Equine? 7 Biosolids ( <i>municipal sludge</i> )? 8 Food waste? 9 Other? [ <i>Specify: _____</i> ]	CODE
	0259

g Was the manure or compost--- .....

1 Produced on this operation? 2 Purchased? 3 Obtained at no cost off this operation? 4 Obtained with compensation? ( <i>Operator received payment for accepting the manure.</i> )	CODE
	0260

[If item 15g = 2, ask---]

(i) What was the total cost of the purchased manure or compost applied to the selected field? (**Include** operator, landlord, and contractor costs. **Include** any payment made for transportation costs.)

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
0284		0285

(ii) Did you hire someone to custom apply the manure or compost? .....

CODE
0286

YES = 1

[If YES, ask---]

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
--------------------------	----	---------------



a. What was the total cost paid to have manure or compost custom applied to the selected field? [Do not report custom application cost if it was included with the purchased manure cost]. . . . .

0287

0288

h. What is the distance in miles between the manure or compost storage/production location and the selected field? . . . . .

MILES  
0291

i. Of the manure or compost applied to the selected field, was any tested for nutrient content prior to application? . . . . .

CODE  
0261  
YES = 1

16. Were the manure APPLICATION RATES to the selected field influenced by Federal, State, or local restrictions? . . . . .

CODE  
0264  
YES = 1

[If item 16 is YES, ask--]

a. What basis was used to determine these manure application rate restrictions--

(i) Nitrogen requirement of the crop? . . . . .

CODE  
0265  
YES = 1

(ii) Phosphorus requirement of the crop? . . . . .

0266  
YES = 1

---

**NOTES**

**D BIOCONTROL or PESTICIDE APPLICATIONS---SELECTED FIELD D**

Now I have some questions about all the biocontrols or pesticides used on the selected field for the 2019 cotton crop, including both custom applications and applications made by this operation.

1. **Were any herbicides, insecticides, fungicides or other biocontrols or pesticides used on the selected cotton field for the 2019 crop? . . . . .** YES = 1  
 . . . . . NO = 3

CODE	0302
EDIT TABLE	0300

[Probe for applications in the fall of 2018 (and those made earlier if the selected field was fallow).]

**If no biocontrols or pesticides applied, go to Section E.**

<b>Include</b> defoliant, fungicides, herbicides, insecticides, and other pesticides.  <b>Include</b> biological and botanical pesticides.	<b>Exclude</b> nutrients or fertilizers reported earlier and seed treatments.	OFFICE USE TABLE 0399 LINES IN TABLE 001
--	---	---

CHEMICAL PRODUCT NAME	LINE	2	3	4	5	6	OR	7	8	
		What products were applied to the selected field? <small>[Show product codes from Respondent Booklet.]</small>	Was this product bought in liquid or dry form? <small>[Enter L or D]</small>	Was this part of a tank mix? <small>[If tank mix, enter line number of first product in mix.]</small>	When was this applied? 1 BEFORE planting 3 AT planting 4 AFTER Planting 5 DEFOLIATION prior to harvest	How much was applied per acre per application?	What was the total amount applied per application in the selected field?	[Enter unit code.] 1 Pounds 12 Gallons 13 Quarts 14 Pints 15 Liquid Ounces 28 Dry Ounces 30 Grams		
	01	61		63	64	65	_____	73	_____	74
	02	61		63	64	65	_____	73	_____	74
	03	61		63	64	65	_____	73	_____	74
	04	61		63	64	65	_____	73	_____	74
	05	61		63	64	65	_____	73	_____	74
	06	61		63	64	65	_____	73	_____	74
	07	61		63	64	65	_____	73	_____	74
	08	61		63	64	65	_____	73	_____	74
	09	61		63	64	65	_____	73	_____	74
	10	61		63	64	65	_____	73	_____	74
	11	61		63	64	65	_____	73	_____	74
	12	61		63	64	65	_____	73	_____	74
	13	61		63	64	65	_____	73	_____	74
	14	61		63	64	65	_____	73	_____	74

2. [For biocontrols or pesticides not listed in Respondent Booklet, specify---]

LINE	Pesticide Type <small>(Herbicide, Insecticide Fungicide, etc.)</small>	EPA No. or Trade name and Formulation	Form Purchased <small>(Liquid or Dry)</small>	Where Purchased <small>[Ask ONLY if EPA No. cannot be reported.]</small>



CODE

YES = 1  
NO = 3

--

3. Were any chemicals, biocontrols, or pesticides applied by custom applicators?

- YES – [Continue]                       NO – [Go to item 4]

OFFICE USE

a. Are you able to report the cost of chemical, biocontrol, and pesticide products and custom application separately?

0324
------

- YES – [Continue]                       NO – [Go to item 4]

b. Excluding the cost of the chemical, biocontrol, and pesticide products, how much was spent for custom application of such materials on the selected field? (**Include** operator, landlord, and contractor costs.) . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
0331 _____		0332 _____

4. What was the TOTAL COST of all chemical, biocontrol, or pesticide products applied to the selected field? (**Include** operator, landlord, and contractor costs, defoliants, herbicides, insecticides, fungicides, surfactants, wetting agents, growth regulators, and materials applied before planting and during 2018 fallow period. **Exclude** seed treatments.) . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
0334 _____		0335 _____

a. How much was spent for herbicide products applied to the selected field? (**Include** operator, landlord, and contractor costs.) . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
3034 _____		3035 _____

b. How much was spent for insecticide products applied to the selected field? (**Include** operator, landlord, and contractor costs.) . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
3036 _____		3037 _____

**NOTE 1:** If respondent cannot report TOTAL COST, itemize cost for each product in optional columns in Biocontrol or Pesticide Table.

**NOTE 2:** If custom applied and the costs for materials can be separated from application costs, include the cost for materials only. Otherwise, report both the material and application costs in item 4.

5. Was the cotton that was grown in the selected field in 2019 covered by the boll weevil eradication program (BWEP)? . . . . .

YES = 1  
NO = 3

0325
------

[If YES, ask--]

CODE

a. What phase has the eradication program reached in the selected field? . . . . .

1 Active eradication phase?
2 Post-eradication phase?

0336
------

b. For 2019, what was your assessment on the selected field to participate in the BWEP: (**Include** operator, landlord and contractor charges for 2019.) . . .

DOLLARS & CENTS PER ACRE	OR	DOLLARS & CENTS PER BALE
0337 _____		0338 _____

c. How did the level of secondary cotton pests in 2019 compare with the level prior to participating in the BWEP? (e.g. best armyworm; budworms; plant bugs; or aphids). . . . .

1 Increased?
2 Decreased?
3 No Change?

CODE
0339

ASK FOR CALIFORNIA AND TEXAS ONLY

6. Was the cotton in the selected field covered by an area-wide pink bollworm eradication or suppression program (PBWP)? .....

YES = 1  
NO = 3

CODE
0341

[If YES, ask--]

DOLLARS & CENTS  
PER ACRE

OR

DOLLARS &  
CENTS PER BALE

a. For the current crop year, what was the costs on the selected field to participate in the PBWP? .....

0342

0343

(Include operator, landlord, and contractor costs per acre and/or per bale charges for this year's cotton. If you receive a credit on your PBWP assessment for planting Bt cotton to control pink bollworm, report only the amount of the assessment you, your landlord, or your contractor paid.)

**E PEST MANAGEMENT PRACTICES---SELECTED FIELD**

Now I have some questions about your pest management decisions and practices used on the selected field for the 2019 cotton crop. By pests, we mean WEEDS, INSECTS, and DISEASES.

**ENUMERATOR ACTION:** Were PESTICIDE applications reported in Section D?

- YES – [Continue]
- NO – [Go to item 6]

		CODE
1. Was weather data used to assist in determining either the need or when to make pesticide applications? .....	YES = 1	0800
2. Were any biological pesticides such as Bt ( <i>Bacillus thuringiensis</i> ), insect growth regulators, neem or other natural/biological based products sprayed or applied to manage pests in the selected field? .....	YES = 1	0801
3. Were pesticides with different mechanisms of action rotated or tank mixed for the primary purpose of keeping pests from becoming resistant to pesticides? .....	YES = 1	0802

**[ENUMERATOR ACTION:** Were HERBICIDE (pesticide product codes 40000-49999) applications reported in Section D, item 1, column 2?]

- YES – [Continue]
- NO – [Go to item 6]

4. Were herbicides applied to the selected cotton field BEFORE weeds emerged? .....	YES = 1 NO = 3	0803
5. Were herbicides applied to the selected cotton field AFTER weeds emerged? .....	YES = 1 NO = 3	0805

6. In 2019, how was the selected field primarily scouted for insects, weeds, diseases, and/or beneficial organisms? .....	1 By deliberately going to the field specifically for scouting activities [Enter code 1 and go to item 7.] 2 By conducting general observations while performing routine tasks [Enter code 2 and go to item 9.] 3 The selected field was not scouted. [Enter code 3 and go to item 14.]	CODE 0808
---	---	--------------

7. Was an established scouting process (systematic sampling, recording counts, etc.) used or were insect traps used in the selected field? [Exclude traps checked as part of either BWEF or	YES = 1 NO = 3	0809
a. Did you measure the damage of budworm or bollworm infestations on the selected field?	YES = 1 NO = 3	2450

[If item 7a = 1, ask--]

	COUNT	
b. If traps were used, what was the average insect count per acre? .....		2451

	1 Damage in 1 locule 2 Damage in 2 locules 3 Damage in 3 locules 4 Damage in all locules 5 Not applicable	CODE 2452
(i) If boll damage scores were recorded (1 to 4), what was the average boll damage score per acre? .....		

8. Was scouting for pests done in the selected field due to---

CODE

- a. a pest advisory warning? .....
- b. a pest development model? .....

YES = 1  
NO = 3

YES = 1  
NO = 3

0810
0811

1		2	3
		[If YES, ask---] <b>What was the infestation level for [column 1]?</b> —  1 Worse than normal 2 Normal 3 Less than normal	[If column 1 = YES, ask---] <b>Who did the majority of the scouting for [column 1]?</b>  1 Operator, partner or family member 2 An employee 3 Farm supply or chemical dealer 4 Independent crop consultant or commercial scout
9. Was this cotton field scouted for--  a. Weeds? .....	YES = 1 NO = 3  0812	CODE  0813	CODE  0814
b. Insects or mites? .....	0815	0816	0817
c. Diseases? .....	0818	0819	0820

[If scouted by crop consultant or commercial scout, ask item 10; else go to item 11.]

10. How much was charged for the scouting services for the selected field? [Include operator, landlord and contractor cost.] .....

DOLLARS & CENTS PER ACRE

0821	_____
------	-------

OR TOTAL DOLLARS

0822
------

OFFICE USE

- a. [If scouting performed at no cost, explain: \_\_\_\_\_] .....

0333
------

11. Were written or electronic records kept for the selected field to track the activity or numbers of weeds, insects or diseases? .....

YES = 1  
NO = 3

CODE

0823
------

12. Were scouting data compared to published information on infestation thresholds to determine when to take measures to manage pests in this field? .....

YES = 1  
NO = 3

0824
------

13. Did you use field mapping of previous weed problems to assist you in making weed management decisions? .....

YES = 1  
NO = 3

0825
------

14. Did you do any of the following other type(s) of pest management practices for the specific purpose of managing or reducing the spread of pests in the selected field?

		CODE
a. Use the services of a diagnostic laboratory for pest identification or soil plant tissue pest analysis for the selected field? .....	YES = 1 NO = 3	0841
b. Plow down crop residue (using conventional tillage)? .....	YES = 1 NO = 3	0842
c. Remove/burn down crop residue? .....	YES = 1 NO = 3	0843
d. Rotate crops in the selected field during the past three years? .....	YES = 1 NO = 3	0844
e. Maintain ground covers, mulches, or other physical barriers? .....	YES = 1 NO = 3	0845
f. Choose crop variety because of specific resistance to a certain pest? .....	YES = 1 NO = 3	0846
g. Use no-till or minimum till? .....	YES = 1 NO = 3	0847
h. Plan planting locations to avoid cross infestation of pests? .....	YES = 1 NO = 3	0848
i. Adjust planting or harvesting dates? .....	YES = 1 NO = 3	0849
j. Chop, spray, mow, plow, or burn field edges, lanes, ditches, roadways, or fence lines? .....	YES = 1 NO = 3	0850
k. Clean equipment and field implements after completing field work to reduce the spread of pests? .....	YES = 1 NO = 3	0851
l. Adjust row spacing, plant density or row directions? .....	YES = 1 NO = 3	0852
m. Have the seed treated for insect or disease control after you purchased the seed for the selected field? .....	YES = 1 NO = 3	0854
n. Maintain a beneficial insect or vertebrate habitat? .....	YES = 1 NO = 3	0855
o. Maintain buffer strips or border rows to isolate organic cotton from non-organic crops or land, or did you take a buffer harvest? .....	YES = 1 NO = 3	0856
p. Use a flamer to kill weeds? .....	YES = 1 NO = 3	0857
q. Plant earlier or later to avoid weeds? .....	YES = 1 NO = 3	0865
15. Were any beneficial organisms (insects, nematodes, fungi) applied or released in the selected field to manage pests? .....	YES = 1 NO = 3	0853
16. Were floral lures, attractants, repellants, pheromone traps or other biological pest controls used on the selected field? .....	YES = 1 NO = 3	0858

[If item 15 or item 16 is YES, ask--]

a. What were the TOTAL materials and application costs for all biological pest controls for the selected field? <i>Include operator, landlord, and contractor costs. Include cost for beneficial organisms (insects, nematodes, and fungi). Exclude biological pesticides previously reported.</i> .....	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS	
	0859		0860	
17. Was a trap crop (excluding fallow) grown to help manage insects in the selected field? ..	YES = 1 NO = 3		CODE	0863
18. Was the selected field left in fallow in 2018 to help manage insects on the selected field? .....	YES = 1 NO = 3		CODE	0864



19. Were water management practices such as irrigation scheduling, controlled drainage, or treatment of retention water used on the selected field to manage pests or toxin-producing fungi and bacteria? .....

YES = 1 0861  
NO = 3

UNIT CODES

- 1 POUNDS
2 CWT
3 TONS
4 BUSHELS

UNITS PER ACRE

2670 2671

20. What was the difference in yields in the Bt crop with the yields in the non-bt refuge crop? .....

CODE

1765

21. Did you use a soil-insecticide or insecticidal seed treatment in the refuge in 2019? ....

YES = 1

CODE

0827

22. Did pests (weeds, insects, pathogens, animals) cause any yield loss on the selected field in spite of your pest control efforts? .....

YES = 1
NO = 3

[If YES, ask---]

a. How much yield loss do you think was caused by all pests on the selected field in spite of the management practices you used to reduce those losses? ....

1 Bales
2 Pounds

CODE

0828

AND

UNITS PER ACRE

0829

OR

TOTAL UNITS

0830

NUMBER OF YEARS

23. If you used Bt seeds on the selected field in 2019, indicate the number of consecutive years you have planted Bt seeds. [Note: A producer who used Bt cotton in 2019 and 2018, but conventional cotton in 2017, has used Bt cotton for "2" consecutive years.] .....

0831

[If 22 is greater than 1, ask---]

a. If you have ever switched from a Bt seed with a single mode of action to a Bt seed with multiple (pyramided) modes of action, indicate the year that this change was made.....

YEAR

0832

NUMBER OF YEARS

24. If you used Ht seeds on the selected field in 2019, indicate the number of consecutive years you have planted Ht seeds. [Note: A producer who used Ht cotton in 2019 and 2018, but conventional cotton in 2017, has used Ht cotton for "2" consecutive years.] .....

XXXX

YEAR

XXXX

a. What year did you first plant any Ht seeds on the selected field? .....

NUMBER OF YEARS

25. If you used GMO/GE glyphosate-resistant seeds on the selected field in 2019, indicate the number of consecutive years you have planted GMO/GE glyphosate-tolerant corn, soybeans, cotton, or any other GMO/GE glyphosate tolerant crop .....

0867

YES = 1

[If item 25 = YES, continue. If item 25 = NO, go to Section F.]

YEAR

0868

a. What year did you first plant any GMO/GE glyphosate-tolerant seeds on the selected field? .....

28. Have any of the following herbicides been used on the selected field in the specified years since:

1 Active Ingredients	2 2019 YES = 1 NO = 3	3 2018 YES = 1 NO = 3	4 2017 YES = 1 NO = 3	5 2016 YES = 1 NO = 3	6 2015 YES = 1 NO = 3
a. Glyphosate (e.g. Roundup®)	2001	2002	2003	2004	2005
b. Glufosinate (e.g. Liberty®)	2006	2007	2008	2009	2010
c. Dicamba (e.g. Xtend®, Xtendimax®, Engenia®)	2011	2012	2013	2014	2015
d. 2, 4-D (e.g. Enlist ®)	2016	2017	2018	2019	2020

CODE

29. Have Herbicide Tolerant seeds been planted on the selected field any time since 2015?.....

YES = 1

[If item 29= YES, continue. If item 26 = NO, go to item 32.]

*If column 2 = 1, ask questions in columns 3 - 6*

1 For herbicide tolerant seeds that are tolerant of--	2 Have you noticed a decline in the effectiveness of herbicides in controlling weeds in the selected field?  YES = 1 NO = 3	3 What was the first year you noticed a decline in the effectiveness of herbicides in controlling weeds in the selected field?  YEAR	After noticing the decline in the effectiveness of this herbicide in controlling weeds on the selected field, did you--		
			4 Stop planting herbicide resistant crops with this trait?  YES = 1 NO = 3	5 Change tillage practices?  YES = 1 NO = 3	6 Switch to an alternative herbicide?  YES = 1 NO = 3
a. Glyphosate (e.g. Roundup®)	2022	2023	2034	2025	2026
b. Glufosinate (e.g. Liberty®)	2027	2028	2029	2030	2031
c. Dicamba (e.g. Xtend®, Xtendimax®, Engenia®)	2032	2033	2034	2035	2036
d. 2, 4-D (e.g. Enlist ®)	2037	2038	2039	2040	2041

Completion Code for Pest Management Data  
1 Incomplete/Refusal

UNIT CODES

- 1 POUNDS
- 2 CWT
- 3 TONS
- 4 BUSHEL

UNITS PER ACRE

32. If untreated (either with insecticides or Bt seeds), how much yield loss (e.g. bales per acre) do you think bollworms would most likely cause on the selected field?

.____	
-------	--

33. If untreated (either with insecticides or Bt seeds), how much yield loss (e.g. bales per acre) do you think cutworms would most likely cause on the selected field?.....

.____	
-------	--

34. If untreated (either with insecticides or Bt seeds), how much yield loss (e.g. bales per acre) do you think insect pests other than bollworms or cutworms would most likely cause on the selected field?.....

.____	
-------	--

**UNIT CODES**

- 1 POUNDS
- 2 CWT
- 3 TONS
- 4 BUSHELS

**UNITS PER ACRE**

35. If untreated (either with herbicides, tillage, or cultivation), how much yield loss (e.g. bushels per acre) do you think weeds would most likely cause on the selected field?.....

2670 .____	2671
---------------	------

**Completion Code for  
Pest Management Data**

1 Incomplete/Refusal	0500
----------------------	------

1. Including custom operations, I need to list field work performed by machines on the selected field for the 2019 cotton crop. Please...

- ▶ begin with the first field operation after harvest of previous crop, including operations for a cover crop established since the previous crop harvested [if fallow during 2018, list operations starting with fall 2017];
- ▶ list the operations in order through harvest and hauling of this crop to storage or first point of sale; and
- ▶ maintain the order of tandem hook-ups.

CODES FOR COLUMN 5	
1	You (the Operator)
2	Partner
3	Unpaid Worker
4	Paid Part-time or Seasonal Worker
5	Paid Full-time Worker
6	Custom Applicator

OFFICE USE  
LINES IN TABLE

0499

CHECK LIST	
<b>Include</b>	all field work using machines for---
<input type="checkbox"/>	Land Forming/Levee Building
<input type="checkbox"/>	Tillage
<input type="checkbox"/>	Preparing for Irrigation
<input type="checkbox"/>	Planting
<input type="checkbox"/>	Fertilizer & Pesticide applications
<input type="checkbox"/>	Harvesting
<input type="checkbox"/>	Module Building
<input type="checkbox"/>	Hauling from field to gin
<b>Exclude</b>	
<input type="checkbox"/>	Lime & Gypsum/landplaster applications
<input type="checkbox"/>	Non-Commercial Manure applications & Compost

LINE No.	SEQUENCE No.	3 What operation or equipment was used?	4 [Record machine code from Respondent Booklet.] CODE	5 Who was the machine operator- [Enter code from above.] CODE	[IF CUSTOM (column 5 = code 6), skip columns 6-11]						
					6 What was the size or swath of the [machine] used? CODE	7 [Record size unit code.] 1 Feet 2 Row 3 Moldboard (bottoms) Hauling 4 Pounds 5 Bushels 6 Tons 7 Bales CODE	8 How many acres were covered? [Exclude land forming and hauling operations] ACRES	OR	9 How many TOTAL HOURS were spent on land forming, module building, or hauling? [Example: backhoes, disk border maker, ditcher, rear mounted blade, trucks, wagons, forklifts, etc.] HOURS	10 Which Power Source was used? <sup>1/</sup> Tractors: 1= (<40 HP) 2= (40-99 HP) 3= (100-149 HP) 4= (150-199 HP) 5= (>=200 HP) Other: 66=Animal Drawn 77=Pick-up 99=Self Propelled 1/ CODE	11 What was the fuel type of the tractor? [Record fuel type only if Power code equals 1-5] 1=diesel 2=gasoline 3=LP gas 4=other CODE
01	87		88	89	90	91	92	.	93	94	95
02	87		88	89	90	91	92	.	93	94	95
03	87		88	89	90	91	92	.	93	94	95
04	87		88	89	90	91	92	.	93	94	95
05	87		88	89	90	91	92	.	93	94	95
06	87		88	89	90	91	92	.	93	94	95
07	87		88	89	90	91	92	.	93	94	95
08	87		88	89	90	91	92	.	93	94	95
09	87		88	89	90	91	92	.	93	94	95
10	87		88	89	90	91	92	.	93	94	95
11	87		88	89	90	91	92	.	93	94	95
12	87		88	89	90	91	92	.	93	94	95
13	87		88	89	90	91	92	.	93	94	95
14	87		88	89	90	91	92	.	93	94	95
15	87		88	89	90	91	92	.	93	94	95
16	87		88	89	90	91	92	.	93	94	95
17	87		88	89	90	91	92	.	93	94	95

<sup>1/</sup> If trucks other than pick-ups are used as the power source. use truck codes in Respondent Booklet.

OFFICE USE

0400

2. **Now I need some additional information about your labor.**

Please report the paid and unpaid labor that worked on the selected field to produce the 2019 cotton crop. **(Exclude labor that was reported for field work performed by machines.)**

TYPE OF WORKERS	How many hours did (type of worker) spend on the selected field---		
	a.	b.	c.
	scouting for weeds, insects and diseases? HOURS	irrigating? HOURS	performing other work by hand? HOURS
You (the operator)	1101	1102	1103
Partner(s)	1104	1105	1106
Unpaid workers	1107	1108	1109
Paid part-time or seasonal workers <b>(Exclude custom and contract labor)</b>	1110	1111	1112
Paid full-time workers <b>(Exclude custom and contract labor)</b>	1113	1114	1115

3. **What was the average hourly wage rate paid to part-time or seasonal hired workers?**  
**(Exclude custom and contract workers, payroll taxes and benefits.)** . . . . .

**DOLLARS & CENTS PER HOUR**

1119  
\_\_\_\_\_

4. **What was the average hourly wage rate paid to full-time hired workers?**  
**(Exclude custom and contract workers, payroll taxes and benefits.)** . . . . .

**DOLLARS & CENTS PER HOUR**

1118  
\_\_\_\_\_

5. **Was any contract labor used on the selected field?** . . . . .

**CODE**

1116  
\_\_\_\_\_

YES = 1

[If YES, ask ---

a. **What was the average cost per acre for this contract labor?**  
**(Include operator, landlord, and contractor costs.)** . . . . .

**DOLLARS & CENTS PER ACRE**

1117  
\_\_\_\_\_

6. **What percent of the total number of unpaid hours worked on the selected field was performed by workers under 16 years of age?** *(Estimates of labor costs for unpaid workers are based on off-farm wage rates, which are different for workers under 16 relative to those 16 and older.)* . . . . .

**PERCENT**

1120  
\_\_\_\_\_

7. **Now I need some information on how much was spent (or will be spent) for custom services used on this field for the 2019 cotton crop.**

<p>1</p> <p><b>CUSTOM SERVICE</b></p> <p><b>Which of the following services were performed for the 2019 cotton crop on the selected field?</b></p> <p>✓ ← [Check box for each service performed; refer to item 1 if necessary.]</p>	<p>2</p> <p><b>Including operator, landlord, and contractor costs, how much was spent for [column 1] on the selected field for the 2019 cotton crop?</b></p> <p><b>DOLLARS &amp; CENTS PER ACRE</b></p>
---	---

<input type="checkbox"/> a. Custom land preparation and/or shaping	1121	. ____
<input type="checkbox"/> b. Custom cultivating? . . . . .	1122	. ____
<input type="checkbox"/> c. Custom planting and/or reseedng? . . . . .	1123	. ____
<input type="checkbox"/> d. Custom harvesting? . . . . .	1124	. ____
<input type="checkbox"/> e. Custom module building? $\frac{\text{____} \times \text{____}}{\text{____}} = \text{____}$ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre)	1125	. ____
<input type="checkbox"/> f. Custom hauling from field to gin? $\frac{\text{____} \times \text{____}}{\text{____}} = \text{____}$ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre) .	1126	. ____
<i>[If custom harvesting, module building, and hauling from field to gin cannot be separated, ask--]</i>		
<input type="checkbox"/> g. Custom harvesting, module building, and hauling from field to gin? $\frac{\text{____} \times \text{____}}{\text{____}} = \text{____}$ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre) .	2127	. ____

**[Note: Do not report cotton ginning costs. If harvesting, module building, and/or hauling costs cannot be separated from ginning costs, report the nonresponse code (-1) for those costs that cannot be separated.]**

**8. Did you hire any technical or consultant services to make recommendations (such as for nutrient, pest control, irrigation, or precision farming) for the selected field?**

**YES** – [Continue]       **NO** – [Go to item 10]

Which of the following services did you obtain?

		CODE
a. Nutrient recommendations/management service? . . . . .	YES = 1 NO = 3	1129
b. Soil or tissue sample collection? . . . . .	YES = 1 NO = 3	1130
c. Pest control recommendations/management service? . . . . .	YES = 1 NO = 3	1131
d. Pest scouting ( <b>Exclude</b> any activity for the BWEF or PBWP)? . . . . .	YES = 1 NO = 3	1132
e. Irrigation management service (i.e. irrigation scheduling)? . . . . .	YES = 1 NO = 3	1133
f. Yield map or remote sensing map development/interpretation? . . . . .	YES = 1 NO = 3	1134
g. Other custom or technical service? [Specify: _____] . . . . .	YES = 1 NO = 3	1135

**9. If YES to any of these services, what was the cost for all of these services? (Include operator, landlord, and contractor costs. Exclude cost of soil/tissue tests or scouting cost reported earlier. Do not report costs for any of these services if they were previously reported as part of the costs of materials and/or application)**

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
1136 . ____		1137

**10. Please report how your farm data will be stored and accessed. [Enter code "1" for all that apply.]**

		CODE
a. Did you access the data collected from the selected field on a--		
(i) Paper hard copy? . . . . .	YES = 1	2485
(ii) Personal computer? . . . . .	YES = 1	2486
(iii) Mobile device? . . . . .	YES = 1	2487
b. Did you access the data collected from the selected field through an agricultural technology provider	YES = 1	2488

*[If item 10b = 1 continue, otherwise go to item 11]*

- c. Did you opt-out of allowing your agricultural technology provider website to share data collected from the selected field with any third party? .....
- d. Did you share any of the data collected from the selected field with a third party through an agricultural technology provider? .....

YES = 1	2489
YES = 1	2490

11. Were there (or will there be) any data collection tools (yield monitors, GPS mapping, etc.) used during field operations on the selected cotton field? .....

**CODE**

YES = 1	2460
---------	------

[If YES, continue; else go to Item 12]

**Please report the data collection technologies you used on the selected field to produce this crop.** In the fifth column, report how much it would cost you to replace the data collection tool in total dollars. In the sixth column, report the annual costs of using the data collection tool in total dollars. Include custom service fees, data subscriptions, and online tool subscriptions. [If the replacement cost (\$) or annual fee (\$) does not apply to a particular data collection tool or is not known, leave the cell in that column blank.]

1	2	3	4	5	6
Data Collection Tool	Tool Used YES = 1 NO = 3	Collected GPS coordinates YES = 1 NO = 3	Data was/will be used to create a map Yes = 1 NO = 3	Replacement Cost Total Dollars	Annual Fee Total dollars
a. Yield monitor. ....	2461	2462	2463		
b. Soil tests on core sample (performed on-farm or sent out to a laboratory). ....	2464	2465	2466		
c. Soil sensor tests. ....	2467	2468	2469		
d. Hard-wired crop condition sensors. ....	2470	2471	2472		
e. Wireless crop condition sensors. ....	2473	2474	2475		
f. Drones, aircraft or satellites. ....	2476	2477	2478		
g. Custom service applications (data from completed work on your field). ....	2479	2480	2481		
h. Public data downloaded from online sources. . .	2482	2483	2484		

[if item 11a = 1 in column 2, continue, else go to item 13]

12. Did you use the yield monitor information to---

- a. add/improve tile drainage? .....
- b. negotiate new crop leases? .....
- c. Help determine chemical input use? .....

YES = 1	1141
NO = 3	
YES = 1	1144
NO = 3	
YES = 1	XXXX
NO = 3	

[If any tools used in item 11 continue, else go to item 14.]

**13. Using data collected from the above/previous tools table, (item 11) did you obtain crop management recommendations (data interpretation) based on that data you collected from--**[Enter code "1" for all that apply.]

a. Input dealers without other fee-for-services? . . . . .	YES = 1 NO = 3	2491
b. Input dealers with other fee-for-services? . . . . .	YES = 1 NO = 3	2492
c. Custom service providers? . . . . .	YES = 1 NO = 3	2493
d. USDA/University extension services? . . . . .	YES = 1 NO = 3	2494

[If crop management recommendations were obtained, ask--]	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
e. What was the cost for all of these services? (Include operator, landlord, and contractor costs. Do not report costs for any of these services if they were previously reported as part of the costs of materials and/or application). . . . .	3150 _____		3151

**14. Was any of the following GPS-enabled (Global Positioning System) equipment used to produce crops on the selected cotton field in 2019?**

	YES = 1 NO = 3	CODE
a. Mounted in-cab heads-up displays? . . . . .		2155
b. Smartphones or computer tablets? . . . . .		2156
c. Automatic section control (e.g. auto sprayer boom controls or automatic section shut-offs? . . . . .		XXXX

	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
15. If any GPS-enabled equipment was used, what was the cost to purchase and install all GPS-enabled equipment. Not including guidance auto-steering equipment? (Include cost for GPS receiver and annual GPS subscription fee, and operator, landlord, and contractor costs. Do not report costs for any of this equipment if they were previously reported as part of the costs of materials and/or application.) . . . . .	_____		

	YES = 1 NO = 3	CODE
16. Was any guidance auto-steering equipment (excluding Light Bar) used on the selected field? . . . . .		2148

[If item 16 = 1 continue, else go to Item 17]

		CODE						
(i) Was the guidance auto-steering equipment: . . . . .	<table border="1"> <tr> <td>1</td> <td>New, owned</td> </tr> <tr> <td>2</td> <td>Used, owned</td> </tr> <tr> <td>3</td> <td>Leased</td> </tr> </table>	1	New, owned	2	Used, owned	3	Leased	2158
1	New, owned							
2	Used, owned							
3	Leased							

	YEAR
(ii) What year was guidance auto-steering first purchased? . . . . .	2159 ----

	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS	CODE
(iii) What is the replacement cost for guidance auto-steering equipment? . . .	2160 _____		2161	



17. Was a variable rate applicator used on this field? .....

YES = 1  
NO = 3

2164
------

[If 17=1, continue; else go to Section G]

Please report the variable rate applicator types you used on the selected field to produce the cotton crop.

1	2	3	4	5	6
Was a variable rate applicator used on the selected field for--	Tool Used  YES = 1 NO = 3	Was this applicator — 1 Sensor-based 2 GPS-based 3 Both 4 Neither  CODE	Was this applicator— 1 New, owned 2 Used, owned 3 Leased  CODE	What year was the applicator first used?  YEAR	Premium paid for the applicator  TOTAL DOLLARS
a. Seeding	1158	2170	2171	2172	2173
b. Fertilizer/lime applications	1152	2174	2175	2176	2177
c. Pesticide applications	1159	2178	2179	2180	2181

**G**

**IRRIGATION**

**G**

1. How many acres in the selected field were irrigated for the 2019 cotton crop?

ACRES

[If none, go to **Conclusion**]. .....

1160	.____
------	-------

2. Now, I have some questions about irrigation systems and water used on the selected field for the 2019 cotton crop.

↓		UNIT	SYSTEM
a. What type(s) of irrigation system(s) was (or were) used to irrigate the selected field? [Show <b>System Type Codes</b> in the Respondent Booklet. Enter <b>System Type Code</b> for system covering the most field acres.] . . . . .		SYSTEM TYPE CODE	1161
b. What was the total quantity of water applied to the selected field during the entire growing season? ( <b>Include ALL water used from both on-farm and off-farm sources.</b> ) . . . . .		INCHES PER ACRE	1162
		OR TOTAL ACRE-FEET	1163
<i>If operator cannot provide item 2b, ask (i) &amp; (ii), else go to 2c]</i>			
(i) What is the <b>total</b> number of <b>hours</b> this system was used to apply water to the selected field during the cotton growing season?..		TOTAL HOURS	1164
(ii) How many gallons per minute were applied? . . . . .		GALLONS PER MINUTE	1165
c. What percent of the water used to irrigate the selected field through this system came from surface water sources?		PERCENT	1166
d. What was the number of times the selected field was irrigated during the cotton growing season using this system? ( <b>Include any pre-plant irrigation.</b> ) . . . . .		NUMBER OF IRRIGATIONS	1167
e. Was the pump type---	1 TURBINE? 2 SUBMERSIBLE? 3 CENTRIFUGAL? 4 BOOSTER? 5 SIPHON? 99 NO PUMP? <i>[If code 99, go to item j.]</i>	CODE	1168
f. What was the average pumping rate? . . . . .		GALLONS PER MINUTE	1169
g. [ <i>If item 2a = code 1-9 (PRESSURE SYSTEM), ask---</i> ] What was the system operating pressure? . . . . .		POUNDS PER SQUARE INCH	1170
h. What was the primary motor type used to pump the water?	1 DIESEL 2 GASOLINE 3 LP GAS 4 NATURAL GAS 5 ELECTRICITY 6 SOLAR POWER	CODE	1171
i. What was the average motor size? . . . . .		HORSEPOWER	1172
j. [ <i>If NO PUMP was used (item 2e = 99), ask---</i> ] What was the average flow rate? . . . . .		GALLONS PER MINUTE	1173
k. How many other acres on this operation were irrigated using the selected field's irrigation system during the 2019 growing season? ( <b>Exclude the selected field.</b> ) . . . . .		ACRES	1174

3. What was the cost of the fuel or electricity used to irrigate the selected field? *Include operator, landlord, and contractor costs.* . . . . .

<b>DOLLARS &amp; CENTS PER ACRE</b>	<b>OR</b>	<b>TOTAL DOLLARS</b>
1189		1190

4. **Was any water purchased to irrigate the selected field?** (*Include landlord's share and purchases from all sources.*)

YES – [Enter code 1 and continue.]       NO – [Go to item 5]. . . . .

CODE  
1191

a. What was the total cost for the water purchased for the selected field during the 2019 growing season? (*Include operator, landlord, and contractor costs and ditch maintenance costs for the selected field.*) . . . . .

DOLLARS & CENTS PER ACRE      OR      TOTAL DOLLARS

1193      1194

[If SIPHON TUBES were used (item 2a = 10 or 11), ask---]

5. **What would be the total cost to replace all the siphon tubes used on the selected field?** . . . . .

TOTAL DOLLARS  
1201

[If POLY PIPE system was used (item 2a = 14) ask---]

6. **What was the total amount spent for poly pipe used on the selected field during the 2019 growing season?** (*Include operator, landlord, and contractor costs.*) . . . . .

TOTAL DOLLARS  
1202

[If GATED PIPE system was used (item 2a = 15 or 16), ask---]

7. **What was the average diameter of gated pipe used to irrigate the selected field?** . . . . .

INCHES  
1203

FEET  
1204

a. What was the total length of gated pipe used? . . . . .

8. **Were wells used to supply irrigation water for the selected field?**

YES – [Enter code 1 and continue]       NO – [Go to item 9]. . . . .

CODE  
1205

a. How many wells were used to irrigate the selected field? . . . . .

NUMBER  
1206

b. What was the average diameter of the outer well casing? . . . . .

INCHES  
1207

c. What was the average pumping depth of these wells during the irrigation season? (*Pumping depth is the depth to water at the start of the irrigation season, plus an average decline in the water level caused by pumping during the irrigation season.*) . . . . .

FEET  
1208

d. Were other fields irrigated using water pumped from wells that supplied water to the selected field?

YES – [Enter code 1 and continue]       NO – [Go to item 9]. . . . .

CODE  
1210

e. Excluding the selected field, how many other acres on this operation were irrigated using the same wells during the 2019 growing season? . . . . .

ACRES  
1211

9. **Was any additional mainline or lateral pipe used to carry water from the source to the system in the selected field?** (*Include underground pipe. Exclude any system pipe within the selected field.*)

YES – [Continue]       NO – [Go to Conclusion]

a. What was the average diameter (*in inches*) of the most common type of this additional pipe used? . . . . .

INCHES  
1212

b. How many feet of this additional pipe were used to bring water to the selected field? . . . . .

FEET  
1213

## CONCLUSION

### LOCATION OF SELECTED FIELD

1. I need to locate the selected field of cotton on this map.

2. What county is the selected cotton field in? . . . . .

COUNTY NAME	OFFICE USE COUNTY FIPS CODE
	0010

Field description. . . . .

Field location. . . . .

	LATITUDE		LONGITUDE
N	0054	W	0055
	d d m m s s		d d d m m s s
	LATITUDE	OR	LONGITUDE
	0051		0052
	decimal		decimal

3. [ENUMERATOR ACTION: Mark map to indicate where the selected cotton field is located. Be sure the "X" marked on map is in the county identified above.]

4. We will need additional information to complete this study. We will contact you in February or March 2020 to collect it. I'll call you then to set up a time that is good for you.

5. To receive the complete results of this survey on the release date, go to [www.nass.usda.gov/results/](http://www.nass.usda.gov/results/). Would you rather have a brief summary mailed to you at a later date? . . . . .

	CODE
YES = 1	9990

6. ENDING TIME [MILITARY]. . . . .

HH MM
0005

### RECORDS USE

7. [Did respondent use farm/ranch records to report---]

- a. [fertilizer data?]. . . . . YES = 1
- b. [pesticide data?]. . . . . YES = 1
- c. [majority of this expense data?]. . . . . YES = 1

	CODE
	0011
	0012
	0013

### SUPPLEMENTS USED

8. [Record the total number of each type of supplement used to complete this interview]. . . . .

	NUMBER
FERTILIZER APPLICATIONS	0041
PESTICIDE APPLICATIONS	0042
FIELD OPERATIONS	0043

Reported by: _____	9910	9911	
	M M D D 15		Telephone: (____) _____

OFFICE USE									Optional Use	
R. Unit	Ptr 1 Str	Ptr 2 Str	Ptr 3 Str	Ptr 4 Str	OPS	SSO 1	ADJ		9906	9916
9921	9922	9923	9927	9928	923	9907	922			
Response		Respondent		Mode		Enum.			POID	
1-Comp	9901	1-Op/Mgr	9902	2-Tel	9903	9998	9989			
2-R		2-Sp		3-Face-to-Face						
3-Inac		3-Acct/Bkpr								
4-Office Hold		4-Partner								
		9-Other								
									Eval.	Change
									9900	9985