

# AGRICULTURAL RESOURCE MANAGEMENT SURVEY

OMB No. 0535-0218  
Approval Expires: 7/31/2021  
Project Code: 906  
SurveyID: 3247 Phase 2



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## SORGHUM PRODUCTION PRACTICES AND COSTS REPORT FOR 2019

VERSION 13	ID _____	TRACT 01	SUBTRACT _____	C-TYPE 117
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### CONTACT RECORD

DATE	TIME	NOTES

**INTRODUCTION:**

[Introduced yourself, and ask for the operator. Rephrase in your own words.]

The information you provide will be used for statistical purposes only. Your responses will be kept confidential and any person who willfully discloses any identifiable information about you or your operation is subject to a jail term, a fine, or both. This survey is conducted in accordance with the Confidential Information Protection provisions of Title V, Subtitle A, Public Law 107-347 and other applicable Federal laws. For more information on how we protect your information please visit: <https://www.nass.usda.gov/confidentiality>. 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 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.

We encourage you to refer to your farm records during the interview.

BEGINNING TIME H H M M  
[MILITARY]

SCREENING BOX

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

POID _____	POID _____
PARTNER NAME	PARTNER NAME
ADDRESS	ADDRESS
CITY                      STATE      ZIP                      PHONE NUMBER	CITY                      STATE      ZIP                      PHONE NUMBER
POID _____	POID _____
PARTNER NAME	PARTNER NAME
ADDRESS	ADDRESS
CITY                      STATE      ZIP                      PHONE NUMBER	CITY                      STATE      ZIP                      PHONE NUMBER

Total Planted Acres

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

0050
------

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

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

Total Number of Fields Planted

2. What is the total number of sorghum fields that were planted on this operation?.....

0020
------

[If only one field, enter "1" and go to item 5.]

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 _____	10 _____
2 _____	11 _____
3 _____	12 _____
4 _____	13 _____
5 _____	14 _____
6 _____	15 _____
7 _____	16 _____
8 _____	17 _____
9 _____	18 _____

APPLY "RANDOM NUMBER" LABEL HERE

[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

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

5. 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

		Acres
1. How many acres of sorghum did this operation plant in the selected field for the 2019 crop?.....	1301	
		Code
a. Are the acres in the selected field Certified Organic?.....	1300	Yes=1 No=3
b. Was the selected field transitioning into organic sorghum production in 2019?.....	1399	Yes=1 No=3
2. Were the acres in the selected field--.....	1302	Code
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 or a share of the crop? 5 rented for some combination of cash and share of the crop? 6 used rent free?		
[If field is cash rented (item 2 = 2, 3, or 5), ask item 3, otherwise go to item 4.]		Dollars & Cents per Acre
3. What was the cash rent paid per acre for this 2019 sorghum field?.....	1303	
[If field is share rented (item 2 = 4 or 5), ask--]		Percent
4. What was the landlord's share of the crop from the selected field?.....	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.).....	1305	Dollars & Cents per Acre <b>OR</b> Total Dollars
		1306
6. In what year did you (the operator on the label) start operating the selected field?.....	1312	Year
7. On what date was the selected field planted?.....	1308	MM DD YY
a. What was your yield goal at planting for the selected field?.....	1322	Unit Codes 1 Pounds 2 CWT 3 Tons 4 Bushels
		1323
8. Was the sorghum on the selected field planted with the intention of being harvested as--.....	1327	Code
1 Grain 2 Silage 4 Seed 25 Other		
9. What was the average sorghum row width for the selected field?.....	1322	I
10. What was the source of the sorghum seed--.....	1317	Code
1 Purchased? 2 Homegrown or traded? 3 Both?		

[If item 10 = 2 or 3, ask--]

- a. How much of the sorghum seed plated in the selected field was grown (or received in trade) by this operation?.....
- i. What was the cost per bushel for cleaning and treating this seed?.....

Percent

1318

Dollars & Cents per Bushel

1321

Unit Code

1 Pound

2 CWT

4 Bushel

22 Acre

23 50 Pound Bag

11. What was the total cost per unit (including operator, landlord, and contractor costs) of purchased seed for the selected field? INCLUDE cost of seed treatment and any seed technology fee.).....

Dollars & Cents per Unit

1319

1320

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

Units per Acre

1313

1314

13. For the 2019 sorghum crop, was the sorghum seed--.....

1 Treated with a pesticide prior to purchase?

2 Treated with a pesticide after purchase?

3 Not treated with a pesticide?

Code

3062

[If item 11 = 1 or 2, ask --]

- a. What was the name of the seed treatment? Write seed treatment name in the box provided.....
- 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.).....

Seed Treatment Name

Code

2325

14. For the 2019 sorghum crop, did you plant a commercial seed product on the selected field?.....

Yes=1

No=3

2340

[If item 13 = 1, ask--]

- a. What was the name of the seed product? Write the seed product name in the box provided (e.g. DKS30-28, MS9GB57, 722B, HG 35-W).....

Commercial Seed Product Name

15. How many acres in he selected field had to be replanted to sorghum? replanted = number of acres x number of times replanted).....

Acres

(Acres

1315

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

Code

Yes=1

No=3

1328

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

How many acres in this sorghum field were or will be--

- a. harvested for grain or seed?.....

Acres	What yield per acre did you or do you expect to get for sorghum--	Unit Code
1346	1347	1348

Units per Acre

Code

1 Pounds

2 CWT

3 Tons

4 Bushels

b. harvested for grain, ratoon crop?.....	1336	1337	1338
c. harvested for silage or green chop?.....	1349	1350	Tons
d. harvested for silage or green chop, ratoon crop?.....	1352	1353	Tons
e. abandoned?.....	1351		
f. used for some other purpose?.....	1439		

18. Did any livestock graze this sorghum field after harvest of the 2019 sorghum crop?.....

Code  
1400

19. What type of livestock grazed this sorghum field after harvest of the 2019 sorghum crop?.....

1 Cattle  
 2 Sheep  
 3 Other [Specify: \_\_\_\_\_]

Code  
1361

a. About how many head of livestock grazed on the selected sorghum field?.....

Head  
1362

b. How many days did this livestock graze on the selected field?.....

Number of Days  
1363

20. Was any of the residue from the prior crop (corn stover, wheat straw, etc.) removed post-harvest?.....

Code  
Yes=1  
No=3

[If item 20 = 1 ask--]

21. How many tons per acre of residue were removed through harvest?.....

Tons  
1328

## Crop Code List for item 24 - 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	

22. Please report the history of crops on the majority of the selected field, including cover crops.

1			2	3	4	5	
Season and Year			Was this a cover crop?	How did you manage this cover crop?	Was the selected field irrigated?	Was the selected field no-till or strip-tilled? <sup>1/</sup>	
Crop Name			Yes=1 No=3	1 Tilled-in 2 Herbicide 3 Rolled 4 Grazed 5 Harvested for forage 6 Harvested for grain	Yes=1 No=3	Yes=1 No=3	
Crop Code							
a.	Spring/Summer of 2019?.....	Sorghum	240			2345	1344
			1343	1470	1471	2344	1345
c.	Spring/Summer of 2018?.....		1369	1472	1473	2370	1371
			1372	1474	1475	2373	1374
e.	Spring/Summer of 2017?.....		1375	1476	1477	2376	1377
			1378	1478	1479	2379	1380
			1381	1480	1481	2382	1383
h.	Fall of 2015?.....		1366	1482	1483	2367	1368
i.	Spring/Summer of 2015?.....		1340	1484	1485	2341	1342

<sup>1/</sup>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 Sprig/Summer/Fall 2018, 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.

Dollars & Cents  
per Acre

1468	_____
1495	_____

23. Has any part of the selected field been classified as "Highly Erodible Land"? Cropland identified as highly erodible is subject to highly erodible land conservation (HELIC) requirements. Producers who receive farm program payments are required to have and apply a written soil conservation plan. A "written plan" is a plan prepared in accordance with Federal, State, or district standards.....

	Code
Yes=1	1404
No=3	

24. Do you have a conservation plan that specified practices to control soil erosion?.....

Yes=1	
No=3	

25. Does the selected field contain a wetland? 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.....

	Code
Yes=1	1405
No=3	

26. What is the slope of the selected field?.....

- |   |                            |
|---|----------------------------|
| 1 | Nearly level 0-2%          |
| 2 | Even, moderate grade 3 -9% |
| 3 | Variable, moderate grade   |
| 4 | Even, steep grade over 10% |
| 5 | Variable, steep grade      |

Code

2400
------

- 1 Loam
- 2 Clay
- 3 Sandy
- 4 Mixed
- 5 Silty

Code

2401

27. What is the primary soil texture of the select field?.....

28. Next we will ask about soil and water concerns that you have on the selected field.

In the selected field, are you concerned about any of the following?	Code  Yes=1 No=3	Have you received technical assistance from any of the following sources to evaluate this resource concern? Report up to 2 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		

\*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).

29. 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?.....

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

30. 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		
<input type="checkbox"/> 1 No-till/strip-till	<input type="checkbox"/> 11 Water and sediment basins	<input type="checkbox"/> 30 Implement an integrated pest management plan - written plan
<input type="checkbox"/> 2 Conservation tillage except no-till	<input type="checkbox"/> 12 Grass waterway	<input type="checkbox"/> 31 Drift reducing spray nozzles



<input type="checkbox"/> 3 Cover crop - single species	<input type="checkbox"/> 13 Grade stabilization	<input type="checkbox"/> Targeted sprayer - electrical control
<input type="checkbox"/> 4 Cover crop mix	<input type="checkbox"/> 40 Implement an energy management plan-written plan	<b>Adjacent to Field</b>
<input type="checkbox"/> 5 Contour farming	<input type="checkbox"/> 20 Implement a nutrient management plan - written plan	<input type="checkbox"/> Filter strip
<input type="checkbox"/> 6 Conservation crop rotation	<input type="checkbox"/> 21 Precision nutrient application	<input type="checkbox"/> Field border
<input type="checkbox"/> Terraces	<input type="checkbox"/> 22 Subsurface phosphorous application	<input type="checkbox"/> Riparian buffer - grass or forest

b. For each practice or activity checked in 30a, please complete one line of this table.

1	2	3		4	5
Practice or Activity on the selected field	Practice Code (see item 30a)	On the selected 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 the 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, IState, and Local Programs 5 No Assistance Needed	1 A federal regulatory requirement 2 Highly erodible land 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

<p>31. In 2019, was the sorghum in the selected field covered by a single or named peril crop insurance policy (e.g. hail, replant, wind, freeze)?.....</p>	<p>Yes=1 No=3</p>	<p>Code 2520</p>
<p>[If item 31=1, ask, otherwise go to item 37.]</p>		
<p>a. In 2019, was the sorghum in the selected field covered by more than one single or named peril crop insurance policies (e.g. hail, replant, wind, freeze)?.....</p>	<p>Yes=1 No=3</p>	<p>Code 2517</p>
<p>b. What was the dollar amount of coverage per acre for the single peril policy covering the selected field?.....</p>		<p>Dollar &amp; Cents per Acre 2521</p>
<p>c. What was the percent deductible for the single peril policy covering the selected field? Record no deductible as "0".....</p>		<p>Percent 2522</p>
<p>d. What premium cost per acre did you pay for the single peril policy covering the selected field?.....</p>		<p>Dollar &amp; Cents per Acre 2523</p>
<p>e. Did you or will you collect an indemnity payment for the selected field from the single peril policy during 2019?.....</p>	<p>Yes=1 No=3</p>	<p>Code 1394</p>
<p>32. In 2019, was the sorghum in the selected field covered by a multi-peril crop insurance policy?.....</p>	<p>Yes=1 No=3</p>	<p>Code 1385</p>
<p>[If item 32 = 1 continue, otherwise go to Section C]</p>		
<p>33. Which coverage did you obtain?.....</p>	<p>1 Federal CAT - basic catastrophic insurance 2 Yield based 3 Revenue based 4 Other multi-peril crop insurance</p>	<p>Code 1385</p>
<p>[If item 32a = 2, ask--]</p>		
<p>i. What percent of yield coverage did you select for the selected field?.....</p>		<p>Percent 1387</p>
		<p>1388</p>
<p>[If item 32a = 3, ask--]</p>		
<p>iii. What percent of revenue coverage did you select for the selected field?.....</p>		<p>Percent 1389</p>
<p>a. What type of unit coverage did you purchase for the selected field?.....</p>	<p>1 Basic 2 Optional 3 Enterprise</p>	<p>Code 2524</p>
<p>b. In what year did you, the operator listed on the label, first purchase multi-peril crop insurance on the selected field?.....</p>		<p>Year 2525</p>
<p>c. What is the 2019 Approved Actual Production History (APH) yield for the selected field?.....</p>		<p>Bushels per Acre 2526</p>
<p>d. What was the premium paid for multi-peril crop insurance for the selected field in 2019? EXCLUDE any sign-up fee.</p>		<p>Dollars &amp; Cents per Acre 2527</p>
<p>e. Did you or will you collect an indemnity payment for the selected field from multi-peril crop insurance during 2019?.....</p>	<p>Yes=1 No=3</p>	<p>Code 2528</p>

	Code	Edit Table
1. Were commercial nutrients or fertilizers applied to the selected field for the 2019 sorghum crop?.....	0202	0201

Yes=1  
No=3

[If item 1 = 1 continue, otherwise go to item 7]

2. How many commercial nutrient or fertilizer applications were made to the selected field for the 2019 crop? INCLUDE applications made by airplanes and custom applicators.....	Number 0203
--	----------------

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

CHECKLIST		T-Type 2	Table 001
INCLUDE	EXCLUDE		
<input type="checkbox"/> Custom applied nutrients or fertilizers	<input type="checkbox"/> Micronutrients		
<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"/> Unprocessed manure		
<input type="checkbox"/> Commercially prepared manure or compost	<input type="checkbox"/> Nutrients or fertilizers applied to previous crops in the selected field		
	<input type="checkbox"/> Lime and gypsum/landplaster	Line 99	Office Use Lines in Table 0213

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

	2 Materials Used [Enter percentage analysis or actual pounds of plant nutrients applied per acre.] [Show Common Nutrients or Fertilizers in Respondent Booklet]				3 What quantity was applied per acre? [Leave this column blank if actual nutrients were reported]	4 [Enter material code]  1 Pounds 12 Gallons 19 Pounds of actual nutrients	5 When was this applied? 1 In the fall before seeding 2 In the spring before seeding 3 At seeding 4 After seeding	6 How was this applied? [Refer to code list above]	7 How many acres were treated in this application?  Acres
	N Nitrogen	P <sub>2</sub> O <sub>5</sub> Phosphate	K <sub>2</sub> O Potash	S Sulfur					
01	0205	0206	0207	0214	0208	0209	0210	0211	0212
02	0205	0206	0207	0214	0208	0209	0210	0211	0212
03	0205	0206	0207	0214	0208	0209	0210	0211	0212
04	0205	0206	0207	0214	0208	0209	0210	0211	0212
05	0205	0206	0207	0214	0208	0209	0210	0211	0212
06	0205	0206	0207	0214	0208	0209	0210	0211	0212
07	0205	0206	0207	0214	0208	0209	0210	0211	0212
08	0205	0206	0207	0214	0208	0209	0210	0211	0212

T-Type 0	Table 000	Line 00
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4. Were any nutrients or fertilizers applied by custom applicators?.....	Code Yes=1 No=3
--	-----------------------

[If item 4=1 continue, otherwise go to item 5.]

a. Are you able to report the cost of nutrient or fertilizer materials and custom application separately?.....	Code Yes=1 No=3
--	-----------------------

[If item 4a =1 continue, otherwise 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? 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 be separated, exclude them here and record the total in item 5.

Office Use	
0215	
Dollars & Cents per Acre	OR Total Dollars
0219     . ____	0220

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 materials 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. EXCLUDE lime, gypsum, purchased manure and purchased compost.

Office Use	
0215	
Dollars & Cents per Acre	OR Total Dollars
0221     . ____	0222

6. Was gypsum applied to the selected field for the 2019 sorghum crop?.....  
 7. Was a soil test for soil organic matter performed on this sorghum field at some point in the last 10 years?.....

Yes=1 No=3	Code
	0218
Yes=1 No=3	Code
	3225

[If item 7 = 1, ask--]

- a. What was the percentage of soil organic matter on the field for the most recent test?.....

Percent
. ____

- b. How many times have you tested the selected field for soil organic matter in the last 10 years?.....

Number
3227

[If item 7b is more than 1, ask--]

- c. Based on these tests, is your soil organic matter content?.....
- |                            |
|----------------------------|
| 1 Increasing               |
| 2 Decreasing               |
| 3 Staying roughly the same |

Code
3228

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

Yes=1 No=3	Code
	0225

[If item 8 = 1, ask--]

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

Pounds per Acre
0226

9. Was a soil test for nitrogen performed on this sorghum field in 2018 or 2019 for the 2019 crop?.....

Yes=1 No=3	Code
	0227

[If 9 = 1, ask--]

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

Pounds per Acre
.....

10. Was a plant tissue test or leaf analysis for nutrient deficiency performed on the selected field for the 2019 crop?..... Yes=1 No=3

Code  
0229

11. How much was spent for these soil and plant tissue tests on the selected field? INCLUDE operator, 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 11b.]

a. What is the reason why 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 No=3

Code  
0321

[Enumerator Action: Refer to the Fertilizer Table, column 2. If nitrogen (N) was applied, complete item 12. If no nitrogen applied, go to item 13.]

12. Was the amount of nitrogen you decide to apply to the selected field based on--

a. Results of a soil or plant tissue test?..... Yes=1 Code 0233

b. Crop consultant recommendation?..... Yes=1 Code 0234

c. Fertilizer dealer recommendation?..... Yes=1 Code 0235

d. Extension Service recommendation?..... Yes=1 Code 0236

e. Cost of nitrogen and/or expected commodity price?..... Yes=1 Code 0237

f. Contractor recommendation?..... Yes=1 Code 0238

g. Routine practice - operator's own determination based on past experience, yield goal, etc.? Yes=1 Code 0239

[If nitrogen inhibitors were used, continue, otherwise go to item 13.]

h. How much nitrogen inhibitor did you mix with the nitrogen applied to the selected field?.....

Pounds per Acre      **OR**      Gallons per Acre

2561      2562

13. Is lime ever applied to the selected field?..... Yes=1 Code 0242

[If item 13 = 1 continue, otherwise go to item 14.]

a. On average, how many years are there between application of lime to the selected field?..... Years Code 0243

b. How many tons of lime were applied per acre the last time it was applied to the selected field?..... Ton per Acre Code 0244

c. Was lime applied to the selected field in 2018 or 2019 for the 2019 crop?..... Yes=1 No=3 Code 0240

14. Was non-commercial (unprocessed) manure from own farm, farm a neighbor's farm, etc., or other organic material, including compost, applied to the selected field for the 2019 sorghum crop? EXCLUDE commercially prepared manure..... Yes=1 No=3 Code 0246

[If item 14 = 1 continue, otherwise go to Section D.]

a. How many acres in the selected field was manure or compost applied?..... Acres Code 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 0248	AND	Units per Acre 0249	OR	Total Units 0250
---	--------------	-----	------------------------	----	---------------------

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

i. in the fall before planting?.....	+	Percent 0254
ii. in the spring before planting?.....	+	0255
iii. after planting?.....	+	0256

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

1 Lagoon liquid? 2 Slurry liquid? 3 Semi-dry or dry?	Code 0257
--	--------------

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

1 Broadcast or sprayed without incorporation? 2 Broadcast or sprayed with incorporation? 3 Injected/knifed in? 4 Sprayed using irrigation systems?	Code 0258
---	--------------

f. Was the manure or compost--.....

1 Beef cattle? 2 Dairy cattle? 3 Hogs? 4 Sheep? 5 Poultry? 6 Equine? 7 Biosolids - municipal sludge? 8 Food waste? 9 Other? Specify: _____	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 - operator received payment for accepting the manure?	Code 0260
--	--------------

[If item 14g = 2, continue, otherwise go to item 14h.]

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 0284	OR	Total Dollars 0285
----------------------------------	----	-----------------------

ii. Did you hire someone to custom apply the manure?.....

Yes= 1 No= 3	Code 0286
-----------------	--------------

[If item 14gii=1, ask--]

(a) What was the total cost paid to have manure or compost custom applied to the selected field? INCLUDE operator, landlord, and contractor costs. Do not report custom application cost if it was included with the purchased manure cost.....

Dollars & Cents per Acre 0287	OR	Total Dollars 0288
----------------------------------	----	-----------------------

Miles

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

0291
------

Code

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

Yes=1  
No=3

0261
------

Code

15. Were the manure application rates to the selected field influenced by Federal, State, or local restrictions?

Yes=1  
No=3

0264
------

[If item 18 = 1, ask--]

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

Code

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

Yes=1  
No=3

--

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

Yes=1  
No=3

--

Now I have some questions about all the bio controls or pesticides used on the selected ield for the 2019 sorghum crop, including both custom applications and applications made by this operation.

1. Were any herbicides, insecticides, fungicides or other biocontrols or pesticides used on this sorghum field for the 2019 crop?.....

Code	Edit Table
Yes=1 No=3	0302      0301

[Probe for applications made in the fall of INSTANCE\_YEAR\_MINUS\_1] and those made earlier if the selected field was fallow.]

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

INCLUDE defoliant, fungicides, herbicides, insecticides, and other pesticides  
INCLUDE biological and botanical pesticides.

EXCLUDE nutrients or fertilizers reported earlier and seed treatments.

	T-Type	Table 001
Line 99	Office Use Line in Table	0319

Chemical Product Name	LINE	2	3	4	5	6	7	8
		What products were applied to the selected field? [Show product codes from Respondent Booklet.]	What this product bought in liquid or dry form? [Enter L or D]	If this was part of a tank mix, enter line number of first product in mix.	When was this applied? 1 Before planting 2 At planting 3 After planting	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	0305		0306		0308	0309	0310
	02	0305		0306	307	0308	0309	0310
	03	0305		0306	0307	0308	0309	0310
	04	0305		0306	0307	0308	0309	0310
	05	0305		0306	0307	0308	0309	0310
	06	0305		0306	0307	0308	0309	0310
	07	0305		0306	0307	0308	0309	0310
	08	0305		0306	0307	0308	0309	0310
	09	0305		0306	0307	0308	0309	0310
	10	0305		0306	0307	0308	0309	0310
	11	0305		0306	0307	0308	0309	0310

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

Line	Pesticide Type (Herbicide, Insecticide, Fungicide, etc.)	EPA No. or Trade Name and Formulation	Form Purchased (Liquid or Dry	Where Purchased (Ask only if EPA No. cannot be reported
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Applications Codes for Column 9





Code

3. Were any chemicals, biocontrols, or pesticides applied by custom applicators?..... Yes=1 No=3

[If item 3 = 1, ask, otherwise go to item 4.]

a. Are you able to report the cost of chemical, biocontrol, and pesticide products and custom application of such materials on the selected field? Yes=1 No=3

[If item 3a = 1, ask--

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

4. What was the total cost of all chemical, biocontrol, or pesticide products applied to the selected field? INCLUDE operator, landlord, and contractor costs, defoliant, 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

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

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

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.

Now I have some questions about your pest management decisions and practices used on the selected field for the 2019 sorghum crop. By pests, we mean weeds, insects, and diseases.

[Enumerator Action: Were pesticide applications reported in Section D?]

Yes - Continue     No - Go to item 8

	Yes=1 No=3	Code
1. Were weather data used to assist in determining either the need or when to make pesticide applications?.....		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?.....		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?.....		0802

[Enumerator Action: Were herbicide (pesticide product codes 3000-4999) applications reported in Section D, item 1, column 2?]

Yes - Continue     No - Go to item 8

	Yes=1 No=3	Code
4. Were herbicides applied to this sorghum field before weeds emerged?.....		0803
5. Were herbicides applied to this sorghum field after weeds emerged?.....		0805
6. Did you use published information on infestation thresholds to determine when to take measures to manage pests in the selected field?.....		0824
7. Were records kept for the selected field to track the activity or numbers of weeds, insects, or diseases?.....		0823

	1 2 3	Code
8. 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 9.] 2 By conducting general observations while performing routine tasks [Enter code 2 and go to item 11.] 3 The selected field was not scouted. [Enter code 3 and go to item 16.]	0808
9. Was an established scouting process such as systematic sampling, recording counts, etc. used or were insect traps used in the selected field?.....	Yes=1 No=3	0809
10. Was scouting for pests done in the selected field due to--		
a. a pest advisory warning?.....	Yes=1 No=3	0810
b. a pest development model?.....	Yes=1 No=3	0811

1	2	3	4
	Yes=1 No=3	[If Yes, ask--] What was the infestation level for [column 1]? 1 Worse than normal 2 Normal 3 Less than normal Code	[If column 1 is Yes, ask--] Who did the majority of the scouting for [column 1]? 1 Operator, partner or family member 2 An employee 3 Farm supply or chemical dealer 4 Independent crop consultant or commercial scout Code
11. Was this sorghum field scouted for--			
a. weeds?.....	0812....	0813	0814
	0815	0816	0817
	0818	0819	0820

[If scouted by crop consultant or commercial scout, ask item 12, otherwise go to item 13.

	Dollars & Cents per Acre	OR	Total Dollars
12. How much was charged for the scouting services for the selected field? INCLUDE operator, landlord, and contractor costs.....	0821		0822

Office Use

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

--

Code

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 types of pest management 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 sorghum 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
------

Code

15. Were any beneficial organisms such as insects, pheromone traps or other biological pest controls used on the selected fields?..... Yes=1 No=3

0853
------

16. Were floral lures, attractant repellants, pheromone traps or other biological pest controls used on the selected field?..... Yes=1 No=3

0858
------

[If item 15 or item 16 = 1, ask--]

a. What were the total materials and application costs for all biological pest controls for the selected field? INCLUDE operator, landlord, and contractor costs. INCLUDE cost for beneficial organisms, insects, nematodes, and fungi. EXCLUDE biological pesticides.....

Dollars & Cents per Acre

OR

Total Dollars

0859
------

0860
------

Code

17. Was a trap crop, excluding fallow, grown to help manage insects in the selected field?..... Yes=1 No=3

0863
------

18. Was the selected field left fallow in 2018 to help manage insects on the selected field? ..... Yes=1 No=3 

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 No=3 

Code
0861
20. Was protection of beneficial organisms a factor in your pest control decisions for the selected field? ..... Yes=1 No=3 

0862
------

[If item 20 = 1, continue, otherwise go to item 21.]

- a. Did you change timing of, reduce application rate of, or eliminate a pesticide application? ..... Yes=1 No=3 

Code
0866
- b. Did you change to an alternative pesticide, biocontrol, or non-pesticide practice? ..... Yes=1 No=3 

0867
------

21. 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? .....

Unit Code
1 Pounds
2 CWT
3 Bushels
4 Tons

Code
0828

AND

Units per Acre
0829

OR

Total Units
0830

Completion Code for Pest Management Data	
1 Incomplete/Refusal	0340

**F FIELD OPERATIONS--SELECTED FIELD**

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

INCLUDE all field work using machines for--

- Land forming/Levee Building
- Tillage
- Preparing for Irrigation
- Planting
- Fertilizer & Pesticide applications
- Harvesting & Hauling to storage or first point of sale

EXCLUDE

- Lime & Gypsum/land plaster applications
- Compost & Non-commercial manure applications

1 L I N E  No.	2 S E Q U E N C E  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 Column 5 = code 6, skip columns 6 thru 10]					
					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  Code	8 How many acres were covered?  [EXCLUDE land forming and hauling operations.]  Acres	9 How many total hours were spent on land forming and hauling? [Example: backhoes, disk border maker, ditcher, rear mounted blade, trucks, wagons, forklift etc.]  Hours	10 What power source was used? <sup>1/</sup> 1 <40 HP 2 40-99 HP 3 100-149 HP 4 150-199 HP 5 >=200 HP OR 66 Animal Drawn 77 Pick up 99 Self-Propelled  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	0351		0352	0353	0354	0355	0357	0359	94	95
02	0361		0362	0363	0364	0365	0367	0369	94	95
03	0371		0372	0373	0374	0375	0377	0379	94	95
04	0381		0382	0383	0384	0385	0387	0389	94	95
05	0391		0392	0393	0394	0395	0397	0399	94	95
06	0401		0402	0403	0404	0405	0407	0409	94	95
07	0411		0412	0413	0414	0415	0417	0419	94	95
08	0421		0422	0423	0424	0425	0427	0429	94	95
09	0431		0432	0433	0434	0435	0437	0439	94	95
10	0441		0442	0443	0444	0445	0447	0449	94	95
11	0451		0452	0453	0454	0455	0457	0459	94	95
12	0461		0562	0463	0464	0465	0467	0469	94	95
13	0471		0572	0473	0474	0475	0477	0479	94	95
14	0481		0482	0483	0484	0485	0487	0489	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

0032

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 sorghum crop. EXCLUDE labor that was reported for field work performed by machines.

How many hours did (type of worker) spend on the selected field--

a.

b.

c.

Type of Workers	scouting for weeds, insects and diseases?	irrigating?	performing other work by hand?
	Hours	Hours	Hours
You (the operator)	1101	1102	1103
Partner(s)	1104	1105	1106
Unpaid workers	1107	1108	1109
Paid part-time or seasonal workers EXCLUDE custom and contract labor	1110	1111	1112
Paid full-time workers EXCLUDE custom and contract labor	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.....

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

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

[If item 5 = 1, ask--]

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

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.....

Dollars & Cents  
Per Hour

1119

1118

Code

Yes=1 1116  
No=3

Dollars & Cents  
Per Acre

1117

Percent

1120

7. Now I need some information on how much was spent or will be spent for custom services used on the selected field for the 2019 sorghum crop.

1 Custom Service	2 Including operator, landlord, and contractor costs, how much was spent for [column1] on the selected field for the 2019 sorghum crop? Dollars & Cents per Acre
Which of the following services were performed for the 2019 sorghum crop on the selected field? [Check box for each service performed; refer to item 3 if necessary.]	
<input type="checkbox"/> a. Custom land preparation, shaping and/or leveling.....	1121
<input type="checkbox"/>	1122
<input type="checkbox"/> c. Custom planting and/or reseeding.....	1123
<input type="checkbox"/> d. Custom harvesting.....	1124
<input type="checkbox"/> e. Custom hauling to storage or point of first sale _____ x _____ ÷ _____ = _____ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre).....	1126
<input type="checkbox"/> f. Custom harvesting and hauling from field to storage or point of first sale. _____ x _____ ÷ _____ = _____ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre).....	1127

Code

8. Was the sorghum harvested and hauled from the selected field dried or will be dried before being sold or stored?.....	Yes=1 No=3	1195
9. 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=1 No=3	

If item 9 = 1 continue. otherwise go to item 11.1

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?.....	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

11. If Yes to any of these services in item 10a-g, 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 cost of materials and/or application.....	Dollars & Cents per Acre	OR	Total Dollars
	1136		1137

12. Please report how your farm data will be stored and accessed.

a. Did you access the data collected from the selected field on a --		Code
i. Paper hard copy?.....	Yes=1 No=3	2485
ii. Personal computer?.....	Yes=1 No=3	2486
iii. Mobile device?.....	Yes=1 No=3	2487
b. Did you access the data collected from the selected field through an agricultural technology provider website?.....	Yes=1 No=3	2488
13. Were there or will there be any data collection tools such as yield monitors, GPS mapping, etc. used during field operations on this sorghum field?.....	Yes=1 No=3	2460

[If item 13 = 1, continue, otherwise go to item 14.]

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 the sixth column, report the annual costs of using the data collection tool. 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, leave the cell in that column blank.

1	2	3	4	5	6
Data Collection Tool	Tool Used	Collected GPS coordinates	Data was/will be used to create a map	Replacement Cost	Annual Fee
	Yes = 1 No = 3	Yes = 1 No = 3	Yes = 1 No = 3	Total Dollars	Total dollars
a. Yield monitor.....	2461	2462	2463	2570	2571
b. Soil tests on core sample performed on-farm or sent out to a laboratory.....	2464	2465	2466	2572	2573



c. Soil sensor tests.....	2467	2468	2469	2574	2575
d. Hard-wired crop condition sensors.....	2470	2471	2472	2576	2577
e. Wireless crop condition sensors.....	2473	2474	2475	2578	2579
f. Drones, aircraft or satellites.....	2476	2477	2478	2580	2581
g. Custom service applications - data from completed work on your field.....	2479	2480	2481	2582	2583
	2482	2483	2484		

[If item 13a column 2 = 1, continue, otherwise go to item 15.]

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

	Code
a. add/improve tile drainage?.....	Yes=1 2491 No=3
b. negotiate new crop leases?.....	Yes=1 2492 No=3
c. Help determine input use for management zones?.....	Yes=1 2493 No=3

[If any of item 13 column 2 = 1, continue, otherwise go to item 16]

15. Did you obtain crop management recommendations (i.e. data interpretation) based on that data you collected from--

	Code
a. input dealers without other fee-for-services?.....	Yes=1 2491 No=3
b. input dealers with other fee-for-services?.....	Yes=1 2492 No=3
c. custom service providers?.....	Yes=1 2493 No=3
d. USDA/university extension services?.....	Yes=1 2494 No=3

[If crop management recommendations were obtained, ask--]

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.....	Dollars & Cents per Acre	OR	Total Dollars
	<input type="text"/>		<input type="text"/>

16. Was any of the following GPS-enabled (Global Positioning System) equipment used to produce sorghum on the selected field?.....

	Code
a. Mounted in-cab heads-up displays?.....	Yes=1 2155 No=3
b. Automatic section control (e.g., auto sprayer boom controls or automatic section shut offs)?.....	Yes=1 No=3
c. Smart phones or computer tablets?.....	Yes=1 2156 No=3

17. 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.....

Dollars & Cents per Acre	OR	Total Dollars
<input type="text"/>		<input type="text"/>

18. Was any guidance auto-steering equipment, excluding Light Bar, used on the selected field?.....

	Code
Yes=1 No=3	2148

[If item 18 = 1 continue, otherwise go to item 19.]

<input type="text"/>	Code
----------------------	------

a. Was the guidance auto-steering equipment.....

1 New, owned
2 Used, owned
3 Leased

2158
------

Year

b. What year was guidance auto-steering equipment first purchased?.....

2159
------

Dollars & Cents  
per Acre

OR

Total Dollars

c. What is the replacement cost for guidance auto-steering equipment?.....

2160
------

2161
------

Code

19. Was a variable rate applicator used on this field?.....Yes=1  
No=3 2491

[If item 19 - 1 continue, otherwise go to Section G]

Please report the variable rate applicator types you used on the selected field to produce the sorghum in 2019.

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 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

Acres

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

1160
------

[If none, go to Conclusion]

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

	Unit	System
a. What type(s) of irrigation system(s) was or were used to irrigate the selected field? [Show System Type Codes in the Respondent Booklet. Enter System Type Code 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? INCLUDE all water used from both on-farm and off-farm sources.....	Inches per Acre	1162
	OR Total Acre Feet	1163

[If operator cannot provide item 2b, ask (i) and (ii), otherwise go to 2c]

i. What is the total number of hours this system was used to apply water to the selected field during the sorghum 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 sorghum growing season using this system? INCLUDE any pre-plant irrigation.....	Number of Irrigations	1167

type for pump closest to water source.].....

- |               |
|---------------|
| 1 Turbine     |
| 2 Submersible |
| 3 Centrifugal |
| 4 Booster     |
| 5 Siphon      |
| 99 No Pump    |

[If code 99, go to item j.].....

Code	1168
------	------

f. What was the average pumping rate?..... 

Gallons per Minute
--------------------

1169
------

[If item 2a = code 1-9 (Pressure System), ask-

g. 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
------

[If item 2e=99, ask--

j. 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? EXCLUDE the selected field..... 

Acres
-------

1174
------

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

Dollars & Cents per Acre
--------------------------

1189
------

 OR 

Total Dollars
---------------

1190
------

  

Code
------

4. Was any water purchased to irrigate the selected field ? INCLUDE landlord's share and purchases from all sources..... Yes=1 No=3 1191

[If item 4 = 1 continue, otherwise go to item 5.]

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..... 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?..... 1203  
Inches  
Feet

a. What was the total length of gated pipe used?..... 1204  
Code

8. Were wells used to supply irrigation water for the selected field?..... Yes=1 No=3 1205  
Number

[If item 8 = 1 continue, otherwise go to item 9.]

a. How many wells were used to irrigate the selected field?..... 1206  
Inches

b. What was the average diameter of the outer well casing?..... 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..... 1208  
Feet  
Code

d. Were other fields irrigated using water pumped from wells that supplied water to the selected field?..... Yes=1 No=3 1210  
Acres

[If item 8d = 1 continue, otherwise go to item 9.]

e. Excluding the selected field, how many other acres on this operation were irrigated using the same wells during the 2019 growing season?..... 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=1 No=3 Code

[If item 9 = 1 continue, otherwise go to Conclusion.]

a. What was the average diameter in inches of the most common type of this additional pipe used?..... 1212  
Inches  
Feet

b. How many feet of this additional pipe were used to bring water to the selected field?..... 1213

# CONCLUSION

## Location of Selected Field

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

County Name  
Office Use  
State County FIPS Code

a. What county is the selected sorghum field in?.....

0010

\_\_\_\_\_

b. Field description.....

## For States with GPS Units Only

LATITUDE

LONGITUDE

c. Field location.....

0054

N

\_\_\_\_\_

0055

W

\_\_\_\_\_

d d m m s s

d d d m m s s

OR

LATITUDE

LONGITUDE

0051

0052

\_\_\_\_\_

\_\_\_\_\_

*decimal*

[Enumerator Action:

Mark map to indicate where the selected sorghum field is located.  
Be sure the "X" marked on map is in the county identified above.]

We will need additional information to complete this study. We will contact you in February or March 20192020 to collect it.  
I'll call you then to set up a time that is good for you.

To receive the complete results of this survey on the release date, to  
[http://www.nass.usda.gov/Surveys/Guide\\_to\\_NASS\\_Surveys/](http://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/)

To have a summary emailed to you at a later date, please enter your email address.  
1095

H H M M

Ending time [Military].....  
0005

— — — —

Record Use

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

Code

Code

Code

[fertilizer data].....

Yes=1  
No=3

0011

[pesticide data].....

Yes=1  
No=3

0012

[majority of this  
expense data?].....

Yes=1  
No=3

0013

Supplements Used

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

Number

Number

Number

Fertilizer Applications.....

0041

Pesticide Applications.....

0042

Field Operations.....  
0043

Reported by: \_\_\_\_\_

9910

\_\_\_\_ **18**  
M M D D

9911

Telephone: (\_\_\_\_) \_\_\_\_\_

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