

# AGRICULTURAL RESOURCE MANAGEMENT SURVEY

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 Phase 2



National Agricultural Statistics Service  
 U.S Department of Agriculture  
 NOC Division  
 9700 Page Avenue, Suite 400  
 St. Louis, MO 63132-1547  
 Phone: 1-888-424-7828  
 Fax: 1-855-415-3687  
 E-mail: nass@nass.usda.gov

## BARLEY PRODUCTION PRACTICES AND COSTS REPORT FOR 2019

<b>VERSION</b> 14	<b>ID</b> _____	<b>TRACT</b> 01	<b>SUBTRACT</b> __	<b>C-TYPE</b> 103
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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

**BARLEY FIELD SELECTION**

**TOTAL PLANTED ACRES**

1. **How many acres of barley 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.]*

Of the total (item 1), how many acres were planted for---

a. feed barley? .....

0051	_____
------	-------

b. malt barley? .....

0052	_____
------	-------

c. other uses? .....

XXXX	_____
------	-------

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

**TOTAL NUMBER OF FIELDS PLANTED**

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

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

0020
------

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 NUMBER" LABEL HERE

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 barley questions will be about this selected barley 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 barley did this operation plant in the selected field for the 2019 crop? ..... ACRES  
1301

a. Was the selected field planted for--- 1 feed?  
2 malt?  
3 other uses? ..... CODE  
1324

b. Are the acres in the selected field **CERTIFIED ORGANIC**? ..... CODE  
1300  
YES = 1  
NO = 3  
 [If YES, skip 1c and ask item 2.]

c. Was the selected field transitioning into organic barley production in 2019? ..... CODE  
1399  
YES = 1  
NO = 3

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

3. [If field is CASH RENTED (item 2 = 2, 3, or 5), ask item 3; else go to item 4.]  
 What was the cash rent paid per acre for this 2019 barley field? ..... DOLLARS & CENTS PER ACRE  
1303

4. [If field is SHARE RENTED (item 2 = 4 or 5), ask--- ]  
 What was the landlord's share of the crop from the selected field? ..... PERCENT  
1304

5. [If field is RENTED (item 2 = 2, 3, 4, 5, or 6), ask---]  
 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).  
DOLLARS & CENTS PER ACRE  
1305 OR TOTAL DOLLARS  
1306

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

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

8. When planted, was this barley field planted with the intention of --- (Include barley planted for commercial seed contract under other uses).  
1 Dual purpose (grain and grazing)?  
2 Harvesting for grain only?  
3 Grazing only?  
4 Cover crop?  
5 Other uses [Specify: \_\_\_\_\_] ..... CODE  
1307

[if item 8 = 1 or 2, ask --]  
 a.. What was your yield goal at planting for the selected field? ..... BUSHELS PER ACRE  
1311

9. Was the source of the barley seed--- 1 Purchased?  
2 Homegrown or traded?  
3 Both? ..... CODE  
1317

a. [If item 9 = 2 or 3, ask--]

How much of the barley seed planted in the selected field was grown (or received in trade) by this operation? .....

<b>PERCENT</b>
1318

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

<b>DOLLARS &amp; CENTS PER BUSHEL</b>
1321

10. [If any seed purchased (item 9 = 1 or 3), ask--]

What was the total cost per unit (including both your and the landlord's share) of purchased seed for the selected field? (Include cost of seed treatment.)

<b>DOLLARS &amp; CENTS PER UNIT</b>	<b>UNIT CODE</b>
1319	1320
. ____	
	1 = POUND 2 = CWT 3 = TON 4 = BUSHEL 22 = ACRE 23 = 50 LB BAG

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

<b>UNITS PER ACRE</b>	<b>UNIT CODE</b>
1313	1314
. ____	
	1 = POUNDS 2 = CWT 3 = TONS 4 = BUSHELS 23 = 50 LB BAGS

12. For the 2019 barley crop, was the barley seed-- .....

- 1 Treated with a pesticide prior to purchase?
- 2 Treated with a pesticide after purchase?
- 3 Not treated with a pesticide?

<b>CODE</b>
3062

[If item 12 = 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

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

<b>CODE</b>
2340

[If item 13 is "Yes", ask--]

a. What was the name of the seed product? Write the seed product name in the box provided (e.g. LCE Genie, AAC Synergy, AC Metcalfe). ....

<b>COMMERCIAL SEED PRODUCT NAME</b>

14. How many acres in the selected field had to be replanted to barley? (Acres replanted = Number of acres x Number of times replanted)

1315
. ____

15. Was straw harvested from the selected field?

YES – [Enter code 1 and continue]       NO – [Go to item 19]. ....

<b>CODE</b>
1354

		<b>ACRES</b>	
16 How many acres of barley straw were harvested from the selected barley field?.....		1355	
		<b>TOTAL TONS</b>	
a. How many tons of barley straw were harvested from the selected barley (item 13) acres?.....		1356	
	$\frac{\text{---}}{\text{Tons per Acre}} \times \text{--- Acres} = \text{--- Total Tons}$	<b>OR</b>	$\frac{\text{--- Bales}}{\text{--- Lbs per Bale}} \times \frac{2000 \text{ Lbs per Ton}}{\text{--- Lbs per Ton}} = \text{--- Total Tons}$
		<b>TOTAL DOLLARS</b>	
b. What was the total cost of baler twine/wire used to bale the barley straw from the selected barley field? (Include landlord's share.).....		1359	
c. Was any barley straw sold?		<b>DOLLARS &amp; CENTS PER TON</b>	
If yes, what was the price received per ton for all barley straw (item 13a) sold from the selected barley field?.....		1360	

		<b>CODE</b>
17. Has harvest of this field been completed?.....		1328
		YES = 1 NO = 3

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

How many acres in the barley field were (or will be)---	1 What yield per acre did you (or do you expect to) get for barley---		2 UNIT CODE	
	ACRES	UNITS PER ACRE	CODE	CODE
a. harvested for grain or seed?.....	1346	1347	1348	
b. harvested for hay, silage or green chop?.....	1349	1350	TONS	
c. abandoned?.....	1351			
d. used for some other purpose?.....	1439			

19. Did any livestock graze the selected barley field during the 2019 crop year?		<b>CODE</b>
<input type="checkbox"/> YES - [Enter code 1 and continue] <input type="checkbox"/> NO - [Go to item 21].		1400

20. What type of livestock grazed the selected barley field during the 2019 crop year? (Include livestock grazing before barley harvest and livestock "grazing-out" the field instead of harvesting barley.).....	1 Cattle 2 Sheep 3 Other [Specify: _____]	<b>CODE</b>
		1361

a. About how many head of livestock (item 17) grazed the selected barley field?.....	<b>HEAD</b>
	1362

b. How many days did this livestock graze on the selected barley field?.....	<b>DAYS</b>
	1363

	<b>CODE</b>
--	-------------

d. Was payment received from others for livestock grazing on this field?

YES - [Enter code 1 and continue]       NO - [Go to item 21]. . . . .

1364

TOTAL DOLLARS

(i) What is the total dollar amount received? (Include landlord's share.). . . . .

1365

**CROP CODE LIST for item 21 – 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	

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

1 What crops were PLANTED on the selected field in---			2 Was this a cover crop?	3 How did you terminate this cover crop?	4 Was the selected field irrigated?	5 Was the selected field no-tilled or strip-tilled? 1/
SEASON AND YEAR	CROP NAME	CROP CODE	YES = 1 NO=3	CODE	YES = 1 NO=3	YES = 1 NO=3
a. SPRING/SUMMER of ----		XXXX	XXXX	XXXX	2345	1344
b. FALL of ----		1343	1470	1471	2344	1345
c. SPRING/SUMMER of 2018? . . . .		1369	1472	1473	2370	1371
d. FALL of ----		1372	1474	1475	2373	1374
e. SPRING/SUMMER of ----		1375	1476	1477	2376	1377
f. FALL of ----		1378	1478	1479	2379	1380
g. SPRING/SUMMER of ----		1381	1480	1481	2382	1383
h. FALL of ----		1366	1482	1483	2367	1368
i. SPRING/SUMMER of 2015? . . . . .		1340	1484	1485	2341	1342

1/ Soil and previous crop residue left undisturbed from harvest to planting.

DOLLARS &  
CENTS  
PER ACRE

j. [If a cover crop was planted in Spring/Summer/Fall 2018, ask--]  
What was the seed cost per acre for the cover crop? . . . . .

1468

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)? .....

1495

22. **Has any part of the selected field as “Highly Erodible Land”?** (Cropland identified as highly erodible is subject to highly erodible land conservation (HELC) 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

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

YES = 1 XXXX  
NO = 3

24. **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.)? .....

YES = 1 1405  
NO = 3

25. **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

26. **What is the primary soil texture of the selected field?** .....

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

**CODE**  
2401

27. **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).

28. **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

2611

2612

2613

- a. Environmental Quality Incentives Program. ....
- b. Conservation Stewardship Program. ....
- c. Conservation Reserve Program. ....



d. Other Federal, State, Local, or non-Government source. . . . .

**29. 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 <b>Practice or Activity on the selected field</b>	2 <b>Practice Code</b> (see item 27a)	3 On this field, for this practice, have you ever received at any time ----		4 <b>Does this practice or activity help satisfy--</b>	5 <b>Was this practice or plan used on this selected field in 2018?</b>
		<b>Technical or planning assistance?</b>	<b>Financial assistance?</b>		
		1 USDA NRCS field staff, cooperative extension, or Technical Service Providers	1 Environmental Quality Incentives Program (EQIP)	1 A Federal regulatory requirement	
		2 Other Sources of Outside Assistance, such as Soil and Water Conservation Service or a conservation organization	2 Conservation Stewardship Program (CSP)	2 Highly Erodible Land Conservation Compliance	
		3 No Assistance Needed	3 Conservation Reserve Program (CRP)	3 Does not relate to any regulation or compliance requirement	
			4 Other Federal, State, and Local Programs		<b>YES = 1 NO = 3</b>
	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

<b>30. In 2019, was the barley in the selected field covered by a single or named peril crop insurance policy (e.g. hail, replant, wind, freeze)?</b> .....	YES = 1 NO = 3	2520
[If YES, ask--]		
a. In 2019, was the barley in the selected field covered by more than one single or named peril crop insurance policies (e.g. hail, replant, wind, freeze)? .....	YES = 1 NO = 3	2517
		<b>DOLLARS &amp; CENTS PER ACRE</b>
b. What was the dollar amount of coverage per acre for the single peril policy covering the selected field? .....		2521
		<b>PERCENT</b>
c. What was the percent deductible for the single peril policy covering the selected field? (Record no deductible as 0.) .....		2522
		<b>DOLLARS &amp; CENTS PER ACRE</b>
d. What premium cost per acre did you pay for the single peril policy covering the selected field? ..		2523
		<b>CODE</b>
e. Did you (or will you) collect an indemnity payment for the selected field from the single peril policy during 2019? .....	YES = 1 NO = 3	1394

**31. In 2019, was the barley in the selected field covered by a multi-peril crop insurance policy?**

YES – [Enter code 1 and continue]       NO – [Go to Section C]. .....

	<b>CODE</b>
	1385

a. Which coverage did you obtain? . . .

1 Federal CAT (basic catastrophic insurance) 2 Yield based 3 Revenue based 4 Other multi-peril crop insurance	<b>CODE</b>
	1386

[If item 31a = 2, ask--]

(i) What percent of yield coverage did you select for the selected field?

	<b>PERCENT</b>
	1387

(ii) What percent of price coverage did you select for the selected field?

	1388
--	------

[If item 34a = 3, ask--]

(iii) What percent of revenue coverage did you select for the selected field? .....

	<b>PERCENT</b>
	1389

b. What type of unit coverage did you purchase for the selected field? .....

1 Basic 2 Optional 3 Enterprise	<b>CODE</b>
	2524

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

	<b>YEAR</b>
	2525

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

	<b>BUSHEL PER ACRE</b>
	2526

e. What was the premium paid for multi-peril crop insurance for the selected field in 2019? (Exclude any sign-up fee) .....

	<b>DOLLARS &amp; CENTS PER ACRE</b>	
	2527	

f. Did you (or will you) collect an indemnity payment for the selected field from multi-peril crop insurance during 2019? .....

	<b>CODE</b>
	2528

	<b>CODE</b>	<b>EDIT TABLE</b>
1. <b>Were commercial nutrients or fertilizers applied to the selected field for the 2019 barley crop?</b> ..... YES = 1 <i>[If COMMERCIAL nutrient or fertilizer applied, continue; else go to item 7.]</i>	0202	0201

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.**

<b>CHECKLIST</b>		<b>T-TYPE</b>	<b>TABLE</b>
<input checked="" type="checkbox"/> <b>INCLUDE</b> <input type="checkbox"/> Custom applied nutrients or 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 checked="" 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	2	001
		<b>LINE</b> 99	<b>OFFICE USE</b> 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

LINE	2 MATERIALS USED <i>[Enter percentage analysis or actual pounds of plant nutrients applied per acre.]</i> <i>[Show Common Nutrients or Fertilizers in Respondent Booklet.]</i>				3 What quantity was applied per acre? <i>[Leave this column blank if actual nutrients were reported.]</i>	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? <i>[Refer to code list above.]</i>	7 How many acres were treated in this application?  <b>ACRES</b>
	N Nitrogen	P2O5 Phosphate	K2O 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. Were any nutrients or fertilizers applied by custom applicators?

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

CODE  
XXXXX  
YES=1

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

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

OFFICE USE  
0215

b. Excluding the cost of the nutrient or fertilizer materials, how much was spent for custom application of nutrients or fertilizers on this 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 6.]

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 2010. Exclude lime, gypsum, purchased manure and purchased compost.) . . .

DOLLARS & CENTS PER ACRE OR TOTAL DOLLARS  
0221 0222

6. Was gypsum applied to the selected field for the 2019 barley crop? . . . . . YES = 1  
NO = 3

CODE  
0218

7. Was a soil test for Soil Organic Matter performed on this barley field at some point in the last 10 years? . . . . . YES = 1  
NO = 3

3225

[If item 7 = 1, ask--]

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

PERCENT  
3226

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

NUMBER  
3227

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

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

CODE  
3228  
1 Increasing  
2 Decreasing  
3 Staying roughly the same

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

YES [Continue]  NO [Go to item 13]

9. Was a soil test for phosphorus performed on the selected barley field in 2018 or 2019 for the 2019 crop? . . . . . YES = 1

CODE  
0225

a. [If item 9 = 1, ask--]

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

POUNDS PER ACRE  
0226

10. Was a soil test for nitrogen performed on the selected barley field in 2018 or 2019 for the 2019 crop? . . . . . YES = 1

CODE  
0227

a. [If item 10 = 1, ask--]

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

POUNDS PER ACRE  
0228

CODE

11. Was a plant tissue test or leaf analysis for nutrient deficiency performed on the selected field for the 2019 crop? 0229

	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
12. How much was spent for these soil and plant tissue tests on the selected field in 2018 or 2019 for the 2019 crop? (Include operator, landlord, and contractor costs.)	0230		0231

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

<p>a. What is the reason why tests were done at no cost?---</p>	<p>1 Soil/plant tissue test provided free of charge by dealer, crop consultant, or extension service</p> <p>2 Soil/plant tissue test costs were included in the total fertilizer costs reported in item 6</p> <p>3 Some other reason</p>	<p>CODE</p> <p style="border: 1px solid black; padding: 2px;">0232</p>
<p>b. Did you receive a payment from the Conservation Stewardship Program for performing a stalk or leaf tissue test for nitrogen application? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>3231</p>

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

		CODE
<p>13. Was the amount of nitrogen you decided to apply to the selected field based on---</p> <p>a. Results of a soil or plant tissue test? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0233</p>
<p>b. Crop consultant recommendation? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0234</p>
<p>c. Fertilizer dealer recommendation? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0235</p>
<p>d. Extension Service recommendation? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0236</p>
<p>e. Cost of nitrogen and/or expected commodity price? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0237</p>
<p>f. Contractor recommendation? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0238</p>
<p>g. Routine practice (operator's own determination based on past experience, yield goal, etc.)? .....</p>	<p>YES = 1</p> <p>NO = 3</p>	<p>0239</p>
<p>h. [If nitrogen inhibitors were used, continue; else go to item 14.]</p> <p>How much nitrogen inhibitor did you mix with the nitrogen applied to the selected field? .....</p>	<p style="border-bottom: 1px solid black;">POUNDS PER ACRE</p> <p style="border: 1px solid black; text-align: center; padding: 2px;">2561</p>	<p>OR</p> <p style="border-bottom: 1px solid black;">GALLONS PER ACRE</p> <p style="border: 1px solid black; text-align: center; padding: 2px;">2562</p>

14. Is lime ever applied to the selected field? ..... YES = 1 NO = 3

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 NO = 3

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 barley crop? (Exclude commercially prepared manure.)

YES - [Enter code 1 and continue]       NO - [Go to Section D]. . . . .

CODE  
0246

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	AND	0249	0250

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

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

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 major source of the manure or compost from---

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
--	--	------	------

CODE

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 cost. 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? . . . . . YES = 1  
NO = 3

CODE

0286

[If YES, ask---]

(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.*] . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
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 applied to the selected field, was any tested for nutrient content prior to application? . . . . .

CODE

YES = 1  
NO = 3

0261

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

CODE

YES = 1  
NO = 3

0264

a. [If item 16 is YES, ask---]

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

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

CODE

YES = 1  
NO = 3

0265

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

YES = 1  
NO = 3

0266



**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 barley 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 barley field for the 2019 crop? . . . . . YES = 1

CODE	EDIT TABLE
0302	0301

[Probe for applications made 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.**

Include defoliant, fungicides, herbicides, insecticides, and other pesticides.  Include biological and botanical pesticides.	Exclude nutrients or fertilizers reported earlier and seed treatments.	T - TYPE <b>3</b>	TABLE <b>001</b>
		LINE <b>99</b>	OFFICE USE LINE IN TABLE 0319

CHEMICAL PRODUCT NAME	LINE	2	3	4	5	6 OR 7		8
		What products were applied to the selected field?  [Show product codes from Respondent Booklet.]	Was this product bought in liquid or dry form?  [Enter L or D]	Was this part of a tank mix?  [If tank mix, enter line number of first product in mix.]	When was this applied? 1 BEFORE planting 3 AT planting 4 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	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



CODE

YES=1 XXXXX

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, 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
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.*

**NOTES**

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

Now I have some questions about your pest management decisions and practices used on the selected field for the 2019 barley 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]

		CODE
1. Were weather data used to assist in determining either the need or when to make pesticide applications? .....	YES = 1 NO = 3	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 NO = 3	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 NO = 3	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 6]

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

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 14.]	CODE	0808
--	--	------	------

9. Was an established scouting process (systematic sampling, recording counts, etc.) used or were insect traps used in the selected field? .....	YES = 1	0809
10. Was scouting for pests done in the selected field due to---		
a. a pest advisory warning? .....	YES = 1	0810
b. a pest development model? .....	YES = 1	0811

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

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

12. How much was charged for the scouting services for the selected field?  
(Include operator, landlord, and contractor costs.).....

DOLLARS & CENTS  
PER ACRE

OR TOTAL DOLLARS

0821
. ____

0822
------

OFFICE USE

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

0333
------

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?** [Enter code "1" for all that apply.]

		CODE
a. Use the services of a diagnostic laboratory for pest identification or soil plant tissue nest 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 nests? .....	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 barley 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 <b>Were any beneficial organisms (insects, nematodes, fungi) applied or released in the selected field to manage nests?</b> .....	YES = 1 NO = 3	0853

16 <b>Were floral lures, attractants, repellants, pheromone traps or other biological nest controls used on the selected field?</b> .....	YES = 1 NO = 3	0858
---	-------------------	------

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

**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

- 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 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 

0861
------

20. Was protection of beneficial organisms a factor in your pest control decisions for the selected field?
- CODE
- [If Item 20 is YES, continue. Else go to Item 21.]. 

0862
------
- a. Did you change timing of, reduce application rate of, or eliminate a pesticide application? YES = 1 NO = 3 

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	.....	CODE	AND	UNITS PER ACRE	OR	TOTAL UNITS
1 POUNDS 2 CWT 3 BUSHELS 4 TONS		0828		0829		0830

Completion Code for Pest Management Data	
1 Incomplete/Refusal	0340



1. Including custom operations, I need to list field work performed by machines on the selected field for the 2019 barley 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 & Hauling to storage or first point of sale
<b>Exclude</b>	
<input type="checkbox"/>	Lime & Gypsum/landplaster applications
<input type="checkbox"/>	Compost & non-commercial manure applications

1  LINE  No.	2  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 6-10 ]					
					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  OR How many TOTAL HOURS were spent on land forming and hauling? [Example: backhoes, disk border maker, ditcher, rear mounted blade, trucks, wagons, forklifts, etc.]  HOURS	10  Which power source was used? <sup>1/</sup> [Record tractor line number from item 1.] 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-Propelled1/  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
17	87		88	0513	90	91	92	93	94	95
18	87		88	0523	90	91	92	93	94	95

1/ 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 barley 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---		
	1 scouting for weeds, insects and diseases?  HOURS	2 irrigating?  HOURS	3 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 <i>(Exclude custom and contract labor)</i>	1110	1111	1112
Paid full-time workers <i>(Exclude custom and contract labor)</i>	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

a. *[If YES, ask ---]*

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 the Selected field for the 2019 barley crop.

1 CUSTOM SERVICE  Which of the following services were performed for the 2019 barley crop on the selected field?	2 Including operator, landlord, and contractor costs, how much was spent for [column 1] on the selected field for the 2019 barley crop?  DOLLARS & CENTS PER ACRE
✓ ← [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"/> b. Custom cultivating . . . . .	1122 _____
<input type="checkbox"/> c. Custom planting and/or reseeding . . . . .	1123 _____
<input type="checkbox"/> d. Custom harvesting . . . . .	1124 _____
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 _____
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 _____
g. Custom raking, baling, and hauling the straw from the selected field _____ x _____ ÷ _____ = _____ (Dollars & cents per unit x Total units hauled from field ÷ Acres harvested in field = Dollars & cents per acre) . . . .	1128 _____

8. Was the barley harvested and hauled from the selected field dried (or will be dried) before being sold or stored? . . . . .

YES = 1  
NO = 3

CODE  
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 – [Continue]       NO – [Go to item 11]

Which of the following services did you obtain?

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

10 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

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

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

[If item 11b = YES, ask --]

c. Did you opt-out of allowing your agricultural technology provider website to share data collected from the selected field with any third party? ..... YES = 1  
NO = 3

2489

d. Did you share any of the data collected from the selected field with a third party through an agricultural technology provider website? ..... YES = 1  
NO = 3

2490

CODE

12. Were there (or will there be) any data collection tools (yield monitors, GPS mapping, etc.) used during field operations on this barley YES = 1  
NO = 3

2460
------

[If YES, continue; else go to Item 13]

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 Data Collection Tool	2 Tool Used YES = 1 NO=3	3 Collected GPS coordinates YES = 1 NO=3	4 Data was/will be used to create a map Yes = 1 NO=3	5 Replacement Cost Total Dollars	6 Annual Fee 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
h. Public data downloaded from online sources. . .	2482	2483	2484		

[If item 12a = 1 in column 2, continue, else go to item 14.]

**13. Did you use the yield monitor information to---**

a. add/improve tile drainage? . . . . .	YES = 1 NO = 3	1141
b. negotiate new crop leases? . . . . .	YES = 1 NO = 3	1144
c. Help determine input use for management zones?	YES = 1 NO = 3	

[If any tools used in item 12, continue, else go to item 15.]

**14. 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

**15. Was any of the following GPS-enabled (Global Positioning System) equipment used to produce barley on the selected field?** [Enter code "1" for all that apply.]

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

	DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
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.) . . . . .	_____		

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

CODE  
2148

[If item 17 = 1 continue, else go to Item 18

(i) Was the guidance auto-steering equipment: . . . . .

1	New, owned
2	Used, owned
3	Leased

. . . . .

2158

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

YEAR  
2159

(iii) What is the replacement cost for guidance auto-steering equipment? . . . . .

DOLLARS & CENTS PER ACRE	OR	TOTAL DOLLARS
2160		2161

18. Was a variable rate applicator used on the selected field? . . . . . YES = 1  
 . . . . . NO = 3

CODE  
2164

[If item 18 = 1 , continue; else go to Section G]

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

↓	UNIT	SYSTEM 1
---	------	----------

a. What type of irrigation system was used to irrigate the selected field? [Show <b>System Type Codes</b> in the Respondent Booklet. Enter <b>System Type Code</b> system covering the most field acres]. . . . .	<b>SYSTEM TYPE CODE</b>	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> ). . . . .	<b>INCHES PER ACRE</b>	1162	
	<b>OR TOTAL ACRE-FEET</b>	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 barley growing season?. . . . .	<b>TOTAL HOURS</b>	1164	
(ii) How many gallons per minute were applied? . . . . .	<b>GALLONS PER MINUTE</b>	1165	
c. What percent of the water used to irrigate the selected field through this	<b>PERCENT</b>	1166	
d. What was the number of times the selected field was irrigated during the barley growing season using this system? ( <b>Include any pre-plant irrigation</b> ). . . . .	<b>NUMBER OF IRRIGATIONS</b>	1167	
e. Was the pump type--- <i>[If more than one pump in the system, enter type for pump closest to water source.]</i>	1 <b>TURBINE?</b> 2 <b>SUBMERSIBLE?</b> 3 <b>CENTRIFUGAL?</b> 4 <b>BOOSTER?</b> 5 <b>SIPHON?</b> 99 <b>NO PUMP?</b> <i>[If code 99, go to item j.]</i>	<b>CODE</b>	1168
f. What was the average pumping rate? . . . . .	<b>GALLONS PER MINUTE</b>	1169	
g. <i>[If item 2a = code 1-9 (PRESSURE SYSTEM), ask---</i> What was the system operating pressure? . . . . .	<b>POUNDS PER SQUARE INCH</b>	1170	
h. What was the primary motor type used to pump the water?	1 <b>DIESEL</b> 2 <b>GASOLINE</b> 3 <b>LP GAS</b> 4 <b>NATURAL GAS</b> 5 <b>ELECTRICITY</b> 6 <b>SOLAR POWER</b>	<b>CODE</b>	1171
i. What was the average motor size? . . . . .	<b>HORSEPOWER</b>	1172	
j. <i>[If NO PUMP was used (item 2e = 99), ask---</i> What was the average flow rate? . . . . .	<b>GALLONS PER MINUTE</b>	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> ). . . . .	<b>ACRES</b>	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.)* **CODE**  
 **YES** – [Enter code 1 and continue.]  **NO** – [Go to item 5]. . . . . 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---]* **TOTAL DOLLARS**  
 5. **What would be the total cost to replace all the siphon tubes used on the selected field?** . . . . . 1201

*[If POLY PIPE system was used (item 2a = 14) ask---]* **TOTAL DOLLARS**  
 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---]* **INCHES**  
 7. What was the average diameter of gated pipe used to irrigate the selected field? . . . . . 1203  
**FEET**  
 a. What was the total length of gated pipe used? . . . . . 1204

8. **Were wells used to supply irrigation water for the selected field?** **CODE**  
 **YES** – [Enter code 1 and continue]  **NO** – [Go to item 9]. . . . . 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? **CODE**  
 **YES** – [Enter code 1 and continue]  **NO** – [Go to item 9]. . . . . 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 Section H]

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 barley on this map.

What county is the selected barley field in? .....

COUNTY NAME	OFFICE USE COUNTY FIPS CODE
	0010

Field description .....

		L A T I T U D E		L O N G I T U D E
Field location .....	N	005 4	-----	W 005 5
		d d m m s s		d d d m m s s
		L A T I T U D E		L O N G I T U D E
Field location .....		005 1	-----	005 2
		decimal		decimal

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

3. 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.

4. 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	0099

5. ENDING TIME [MILITARY] .....

H H M M
0005

**RECORDS USE**

6. [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**

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

NUMBER
0041
0042
0043

Reported by: \_\_\_\_\_ Telephone: (\_\_\_\_) \_\_\_\_\_

OFFICE USE									
D. Unit	Des 1 Str	Des 2 Str	Des 3 Str	Des 4 Str	OPS	SSO 1	ADI	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-Sp 3-Acct/Bkpr 4-Partner 9-Other	9902	2-PATI (Tel) 3-PAPI (Face-to-Face)	9903	9998	9989	
								Eval.	Change
								9900	9985