

AGRICULTURAL RESOURCE MANAGEMENT SURVEY

OMB No. 0535-0218
Approval Expires: 7/31/2022
Project Code: 906
SurveyID: 3248 Phase 2



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

BARLEY PRODUCTION PRACTICES AND COSTS REPORT FOR 2019

VERSION 14	ID _____	TRACT 01	SUBTRACT __	C-TYPE 103
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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] 0004

SCREENING BOX
0006

[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

1. How many acres of barley did this operation plant for the 2019 crop year?..... Total Planted Acres
0050

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

a. Of the total planted acres in item 1, how many acres were planted for-- Total Planted Acres

i. feed barley?..... 0061

ii. malt barley?..... 0062

iii. other uses?..... 0063

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

2. What is the total number of barley fields that were planted on this operation?..... Total Number of
Fields Planted
0020

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

3. Please list these field(s) 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 barley questions will be about this selected barley 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

B

FIELD CHARACTERISTICS--SELECTED FIELD

B

<p>1. How many acres of barley did this operation plant in the selected field for the 2019 crop?.....</p>	<p style="text-align: right;">Acres</p> <div style="border: 1px dashed black; padding: 5px; width: 100px; margin: 0 auto;">1301</div>
<p>a. Was the selected field planted for--.....</p>	<div style="border: 1px solid black; padding: 5px; width: 150px; margin: 0 auto;"> 1 feed? 2 malt? 3 other uses? </div> <p style="text-align: right;">Code</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1337</div> <p style="text-align: right;">Code</p>
<p>b. Are the acres in the selected field Certified Organic?.....</p>	<p style="text-align: right;">Yes=1 No=3</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1300</div> <p style="text-align: right;">Code</p>
[If item 1b = 1, go to item 2.]	
<p>c. Was the selected field transitioning into organic barley production in 2019?.....</p>	<p style="text-align: right;">Yes=1 No=3</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1399</div> <p style="text-align: right;">Code</p>
<p>2. Were the acres in the selected field-.....</p>	<div style="border: 1px solid black; padding: 5px; width: 400px; margin: 0 auto;"> 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? </div> <p style="text-align: right;">Code</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1302</div>
[If field is cash rented (item 2 = 2, 3, or 5), ask item 3, otherwise go to item 4.]	
<p>3. What was the cash rent paid per acre for this 2019 barley field?.....</p>	<p style="text-align: right;">Dollars & Cents per Acre</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1303</div>
[If field is share rented (item 2 = 4 or 5), ask--]	
<p>4. What was the landlord's share of the crop from the selected field?.....</p>	<p style="text-align: right;">Percent</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1304</div>
[If field is rented (item 2 = 2, 3, 4, 5, or 6) ask--]	
<p>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, drying, and irrigation. EXCLUDE real estate tax expenses and lime costs paid by the landowner.</p>	<p style="text-align: right;">Dollars & Cents per Acre OR Total Dollars</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1305</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1306</div> </div>
<p>6. In what year did you (the operator listed on the label) start operating the selected field?.....</p>	<p style="text-align: right;">Year</p> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1312</div> <p style="text-align: right;">M M D D Y Y</p>
<p>7. On what date was the selected field planted?.....</p>	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1308</div> <p style="text-align: right;">_____ 20 ____</p>
<p>a. What was your yield goal at planting for the selected field?.....</p>	<p style="text-align: right;">Unit Codes 1 Pounds 2 CWT 3 Tons 4 Bushels</p> <p style="text-align: right;">Units per Acre</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">1311</div> <div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;">0217</div> </div>

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

3117

9. What was the source of the barley seed--.....

- 1 Purchased?
- 2 Homegrown or traded?
- 3 Both?

Code

1317

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

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

Percent

1318

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

Dollars & Cents per Bushel

1321

[If any seed purchased, item 9 = 1 or 3, ask--]

10. 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

Unit Code

- 1 Pound
- 2 CWT
- 3 Ton
- 4 Bushel
- 22 Acre
- 23 50 Pound Bag

1320

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

Units per Acre

1313

Unit Code

- 1 Pound
- 2 CWT
- 3 Ton
- 4 Bushel
- 23 50 Pound Bag

1314

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?

Code

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.....

Seed Treatment Name

1289

b. What was the seed treatment code? Enter the appropriate seed treatment code from the Respondent Booklet. [Enter "999" if a seed treatment was applied but is not listed. Enter "-1" if the seed treatment is not known.].....

Code

2325

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

Yes=1
 No=3

Code

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. LCE, Genie, AAC Synergy, AC Metcalfe).....

Commercial Seed Product Name

2342

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

Acres

1315

15. Was straw harvested from the selected field?.....
 [If item 15 = 1 continue, otherwise go to item 17.]

Code

3140

Yes=1
No=3

16. How many acres of barley straw were harvested from the selected barley field?.....
 a. How many tons of barley straw were harvested from the selected barley (item 16) acres?.....

Acres

1521

Total Tons

1522

$$\frac{\text{Total Tons}}{\text{Acres}} = \text{Tons per Acre} \quad \text{OR} \quad \frac{\text{Total Tons}}{\text{Bales}} \times \text{Lbs. per Bale} \div 2000 = \text{Lbs per Ton}$$

b. What was the total cost of baler twine/wire used to bale the barley straw from the selected barley field including landlord's share.....

Total Dollars

1525

c. Was any barley straw sold?.....

Code

1527

Yes=1
No=3

[If item 16c = 1, ask--]

i. What was the price received per ton for all barley straw sold from the selected barley field?...

Dollars & Cents per Ton

1526

Code

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

Code

1328

Yes=1
No=3

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

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

- a. harvested for grain or seed?.....
- b. harvested for hay, silage or green chop?.....
- c. abandoned?.....
- d. used for some other purpose?.....

Acres	What yield per acre did you get or do you expect to get for barley--	Unit Code
	Units per Acre	Code
1346	1347	1348
1349	1350	Tons
1351		
1439		

Code

19. Did any livestock graze the selected barley field during the 2019 crop year?.....

Code

1339

Yes=1
No=3

[If item 19 = 1 continue, otherwise go to item 21.]

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: _____]

Code

1341

Head

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

1362

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

Number of Days
1363

c. Was payment received from others for livestock grazing on the selected field?.....

Code
1365

[If item 20c = 1, ask--]

Yes=1
No=3

i. What was the total dollar amount received including the landlord's share?.....

Total Dollars
1367

Crop Code List for item 21 - Previously Planted Crops			
190 Barley	311 Grasses including clover	22 Rye	165 Wheat, winter
6 Corn for grain	1 Hay, alfalfa	34 Ryegrass	318 No crop planted
5 Corn for silage	11 Hay, all other	240 Sorghum, all	291 Other field crop
283 Cotton, all	15 Oats	26 Soybeans	292 Other crop
302 CRP	20 Potatoes	263 Wheat, durum or spring	312 Cover crop mix

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

1			2	3	4	5
What crops were planted on the selected field in-- [For perennial crops, (1, 11, 34, 292, 302, and 311) report the crop code in all seasons when the crop was growing.]			Was this a cover crop?	If a cover crop was planted, how did you terminate this cover crop?	Was the selected field irrigated?	Was the selected field no-till 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. Fall of 2018?.....		1343	1470	1471	2344	1345
b. Spring/Summer of 2018?.....		1369	1472	1473	2370	1371
c. Fall of 2017?.....		1372	1474	1475	2373	1374
d. Spring/Summer of 2017?.....		1375	1476	1477	2376	1377
e. Fall of 2016?.....		1378	1478	1479	2379	1380
f. Spring/Summer of 2016?.....		1381	1480	1481	2382	1383
g. Fall of 2015?.....		1366	1482	1483	2367	1368
h. Spring/Summer of 2015?.....		1340	1484	1485	2341	1342

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

[If a cover crop was planted in Spring/Summer/Fall 2018, ask--]

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

Dollars & Cents per Acre
1468

j. What was the per-acre cost-share or financial assistance payments received for the cover crop?

1495

[Enter zero if no program payment was received.]

22. 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 (HELCS) 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	
Yes=1	0702
No=3	

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

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.....

	Code
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: 1 USDA - NRCS 2 Cooperative Extension Service 3 Other USDA staff, including Forest Service 4 Other (e.g. Soil and Water Conservation District, state agency)	
		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

a. Environmental Quality Incentives Program (EQIP).....

2611

b. Conservation Stewardship Program (CSP).....

2612

c. Conservation Reserve Program (CRP).....

2613

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

2614

NOTES:

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		
<input type="checkbox"/> 1 No-till/strip-till	<input type="checkbox"/> 12 Grass waterway	<input type="checkbox"/> 30 Implement an integrated pest management plan - written plan
<input type="checkbox"/> 2 Conservation tillage except no-till/strip-till	<input type="checkbox"/> 20 Implement a nutrient management plan - written plan	<input type="checkbox"/> 31 Drift reducing spray nozzles
<input type="checkbox"/> 3 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
<input type="checkbox"/> 4 Cover crop mix	<input type="checkbox"/> 21 Precision nutrient application	Adjacent to Field
<input type="checkbox"/> 5 Contour farming	<input type="checkbox"/> 23 No fertilizer application more than 30 days before planting	<input type="checkbox"/> 33 Filter strip
<input type="checkbox"/> 6 Conservation crop rotation	<input type="checkbox"/> 24 Controlled release fertilizer	<input type="checkbox"/> 34 Field border
<input type="checkbox"/> 10 Terraces	<input type="checkbox"/> 22 Subsurface phosphorous application	<input type="checkbox"/> 35 Riparian buffer - grass or forest

b. For each practice or activity checked in 29a, please complete one line of this table.

1	2	3		4	5
Practice or Activity on the Selected Field	Practice Code (see item 29a)	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 assistance 3 No assistance needed	1 Environmental Quality Program (EQIP) 2 Conservation Stewardship Program (CSP) 3 Conservation Reserve Program (CRP) 4 Other Federal, State, and Local Programs 5 No assistance needed	1 A federal regulatory requirement 2 Highly erodible land conservation compliance 3 Does not relate to any regulation or compliance requirement	Yes=1 No=3
	1610	1611	1612	1613	1614
	1615	1616	1617	1618	1619
	1620	1621	1622	1623	1624
	1625	1626	1627	1628	1629
	1630	1631	1632	1633	1634
	1635	1636	1637	1638	1639
	1640	1641	1642	1643	1644
	1645	1646	1647	1648	1649

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)?.....

Code
2520
Yes=1
No=3

[If item 30 = 1 ask, otherwise go to item 31.]

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)?.....

Code
2517
Yes=1
No=3

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

Dollar & Cents per Acre
2521

c. What was the percent deductible for the single peril policy covering the selected field? [Record no deductible as "0"]......

Percent
2522

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

Dollar & Cents per Acre
2523

e. Did you or will you collect an indemnity payment for the selected field from the single peril policy during 2019?.....

Code
1394
Yes=1
No=3

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

Code
1385
Yes=1
No=3

[If item 31 = 1 ask, otherwise go to Section C]

a. Which coverage did you obtain?.....

- 1 Federal CAT - basic catastrophic insurance
- 2 Yield Protection (YP)
- 3 Revenue Protection (RP)
- 4 Other multi-peril crop insurance

Code
1386

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

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

Percent
1387

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

Percent
1388

[If item 31a = 3, ask--]

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

Percent
1389

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

- 1 Basic
- 2 Optional
- 3 Enterprise

Code
2524

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

Year
2525

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

Bushels per Acre
2526

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

Dollars & Cents per Acre
2527

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

Code
2528
Yes=1
No=3

1. Were commercial nutrients or fertilizers applied to the selected field for the 2019 barley crop? INCLUDE those from operators, landlords, and contractors.....

Yes=1
No=3

Code	Office Use Edit Table
0202	0200

[If item 1 = 1 continue, otherwise go to item 6]

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

INCLUDE

EXCLUDE

Custom applied nutrients or fertilizers

Micronutrients

Nutrients or fertilizers applied in the fall of 2018 and those applied earlier if the selected field was fallow in 2018.

Unprocessed manure

Commercially prepared manure or compost

Nutrients or fertilizers applied to previous crops in the selected field

Lime and gypsum/landplaster

Office Use Lines in Table	Table 001	0299
------------------------------	--------------	------

Application Codes for Column 6

- | | |
|---|--------------------------------|
| 1 Broadcast, ground without incorporation | 5 In irrigation water |
| 2 Broadcast, ground with incorporation | 6 Chisel/injected or knifed in |
| 3 Broadcast, by aircraft | 7 Banded in or over row |
| 4 In seed furrow | 8 Foliar or directed spray |

L I N E	2 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 in the selected field were treated in this application? Acres
	N Nitrogen	P ₂ O ₅ Phosphate	K ₂ O Potash	S Sulfur					
	01	31	32	33	34	36	37	38	39
02	31	32	33	34	36	37	38	39	40
03	31	32	33	34	36	37	38	39	40
04	31	32	33	34	36	37	38	39	40
05	31	32	33	34	36	37	38	39	40
06	31	32	33	34	36	37	38	39	40
07	31	32	33	34	36	37	38	39	40
08	31	32	33	34	36	37	38	39	40

4. Were any nutrients or fertilizers applied by custom applicators?.....
 Yes=1 No=3 Code 0214

[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?.....
 Yes=1 No=3 Code 0216

[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.
 Dollars & Cents per Acre OR Total Dollars
 0219 OR 0220

[If material and application costs can't be separated, exclude them here and record the total in item 5.]

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. INCLUDE materials applied to the selected field if it was fallow in 2018. EXCLUDE lime, gypsum, purchased manure, and purchased compost.....
 Dollars & Cents per Acre OR Total Dollars
 0221 OR 0222

[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.]

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 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 Code 3226

b. How many times have you tested the selected field for soil organic matter in the last 10 years?...
 Number Code 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 the selected barley field in 2018 or 2019 for the 2019 crop?.....
 Yes=1 No=3 Code 0224

[If item 8 = 1, continue, otherwise 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 No=3 Code 0225

[If item 9 = 1 ask--]

a. How many pounds of phosphorus per acre were recommended by the phosphorus test?.....
 Pounds per Acre Code 0226

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

[If item 10 = 1, ask--]

	Code
Yes=1	0227
No=3	

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

Pounds per Acre
0228

11. Was a plant tissue test or leaf analysis for nutrient deficiency performed on the selected field in 2018 or 2019 for the 2019 crop?.....

	Code
Yes=1	0229
No=3	

12. 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
0230
. ____

	OR	Total Dollars
		0231

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

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?.....

		Code
Yes=1		3231
No=3		

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

13. Was the amount of nitrogen you decided to apply to the selected field based on--

a. Results of a soil or plant tissue test?.....

		Code
Yes=1		0233
No=3		

b. Crop consultant recommendation?.....

Yes=1	0234
No=3	

c. Fertilizer dealer recommendation?.....

Yes=1	0235
No=3	

d. Extension Service recommendation?.....

Yes=1	0236
No=3	

e. Cost of nitrogen and/or expected commodity price?.....

Yes=1	0237
No=3	

f. Contractor recommendation?.....

Yes=1	0238
No=3	

g. Routine practice - operator's own determination based on past experience, yield goal, etc.

Yes=1	0239
No=3	

[If nitrogen inhibitors were used, continue, otherwise go to item 14.]

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

None	Pounds per Acre
<input type="checkbox"/>	2561
	. ____

	OR	Gallons per Acre
		2562
		. ____

14. Is lime ever applied to the selected field?.....

[If item 14 = 1 continue, otherwise go to item 15.]

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

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

c. Was lime applied to the selected field in 2018 or 2019 for the 2019 crop?.....

15. Was non-commercial (unprocessed) 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.....

[If item 15 = 1 continue, otherwise go to Section D.]

a. To how many acres in the selected field was manure or compost applied?.....

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

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

i. in the Fall before planting?.....

ii. in the Spring before planting?.....

iii. after planting?.....

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

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

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

Code 0242
Yes=1
No=3

Years 0243

Tons per Acre 0244

Code 0240
Yes=1
No=3

Code 0246
Yes=1
No=3

Acres 0247

Code 0248 AND Units per Acre 0249 OR Total Units 0250

1 Tons
2 Gallons
3 Bushels
4 Cubic yards

Percent 0254
+
0255
+
0256
+
100%

Code 0257

Code 0258

Code 0259

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

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

1 Beef cattle?
2 Dairy cattle?
3 Hogs?
4 Sheep?
5 Poultry?
6 Equine?
7 Biosolids - municipal sludge?
8 Food waste?
9 Other? Specify: _____

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 15g = 2, continue, otherwise go to item 15h.]

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

Dollars & Cents
per Acre

OR

Total Dollars

0284

0285

Code

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

Yes=1
No=3

0286

[If item 15gii = 1, ask--]

iii. What was the total cost paid to have manure or compost custom applied to the selected field? INCLUDE operator, landlord, and contractor costs.....

Dollars & Cents
per Acre

OR

Total Dollars

0287

0288

[Do not report custom application cost if it was included with the purchased manure cost.]

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

Miles

0291

Code

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

Yes=1
No=3

0261

Code

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

Yes=1
No=3

0264

[If item 16 = 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

0265

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

Yes=1
No=3

0266

NOTES:

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 No=3	Code	Office Use Edit Table
	0302	0300

[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.	EXCLUDE adjuvants, nutrients or fertilizers reported earlier and seed treatments.	Office Use Line in Table	Table 001	0399
INCLUDE biological and botanical pesticides.				

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

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

Line	Pesticide Type (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)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

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

Code
Yes=1 0323
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 separately?.....

Code
Yes=1 0324
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
0331		0332

4. What was the total cost of all chemical, biocontrol, or pesticide products applied to the selected field? INCLUDE operator, landlord, and contractor costs, defoliants, herbicides, insecticides, fungicides, surfactants, wetting agents, growth regulators, and materials applied before planting and during 2018 fallow period. EXCLUDE seed treatments.....

Dollars & Cents per Acre	OR	Total Dollars
0334		0335

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

Dollars & Cents per Acre	OR	Total Dollars
3034		3035

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

Dollars & Cents per Acre	OR	Total Dollars
3036		3037

Note 1: If respondent cannot report total cost, itemize cost for each product in optional columns in Biocontrol or Pesticide Table.

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

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 6

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

Code	
Yes=1	0800
No=3	

Code	
Yes=1	0801
No=3	
Yes=1	0802
No=3	

[Enumerator Action: Were herbicide (pesticide product codes 10000-99000) 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?.....
5. Were herbicides applied to the selected barley field after weeds emerged?.....
6. Were records kept for the selected field to track the activity or numbers of weeds, insects, or diseases?.....
7. Did you use published information on infestation thresholds to determine when to take measures to manage pests in the selected field?.....

Code	
Yes=1	0803
No=3	

Yes=1	0805
No=3	

Yes=1	0823
No=3	

Yes=1	0824
No=3	

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 13.]

Code	
.....	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	0809
No=3	

10. Was scouting for pests done in the selected field due to--
 - a. a pest advisory warning?.....
 - b. a pest development model?.....

Yes=1	0810
No=3	

Yes=1	0811
No=3	

1	2	3	4
11. Was this barley field scouted for--		[[If Yes, ask--] What was the infestation level for [column 1]? 1 Higher than normal 2 Normal 3 Lower than normal Code	[[If column 2 = 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
a. weeds?.....	Yes=1 No=3 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, 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: _____			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
			Code
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 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. Were any beneficial organisms, such as insects, nematodes, or fungi, applied or released in the selected field to manage pests?.....		Yes=1 No=3	0853
16. Were floral lures, attractants, repellants, pheromone traps, or other biological pest controls used on the selected field?.....		Yes=1 No=3	0858

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

	Dollars & Cents per Acre	OR	Total Dollars
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 previously reported.....	0859		0860

17. Was a trap crop, excluding fallow, grown to help manage insects in the selected field?.....	Code
Yes=1	0863
No=3	
18. Was the selected field left fallow in 2018 to help manage insects on the selected field?.....	Code
Yes=1	0864
No=3	
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?.....	Code
Yes=1	0861
No=3	
20. Was protection of beneficial organisms a factor in your pest control decisions for the selected field?.....	Code
Yes=1	1765
No=3	

[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?..	Code
Yes=1	1766
No=3	
b. Did you change to an alternative pesticide, biocontrol, or non-pesticide practice?.....	Code
Yes=1	1767
No=3	

21. If untilled, uncultivated or untreated with herbicides, 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		0828		0829		0830
	2 CWT						
	3 Bushels						
	4 Tons						

Completion Code for Pest Management Data	
1 Incomplete/Refusal	0500

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 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

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 11]						
					6 What was the size or swath of the [machine] used? Code	7 [Record size unit code.] 1 Feet 2 Row 3 Moldboard bottoms Hauling 4 Pounds 5 Bushels 6 Tons Code	8 How many acres were covered? [EXCLUDE land forming and hauling operations.] Acres	OR	9 How many total hours were spent on land forming and hauling? [Example: backhoes, disk border maker, ditcher, rear mounted blade, trucks, wagons, forklift etc.] Hours	10 What power source was used? Tractors 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 ^{1/} 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	87		88	89	90	91	92	_____	93	94	95
02	87		88	89	90	91	92	_____	93	94	95
03	87		88	89	90	91	92	_____	93	94	95
04	87		88	89	90	91	92	_____	93	94	95
05	87		88	89	90	91	92	_____	93	94	95
06	87		88	89	90	91	92	_____	93	94	95
07	87		88	89	90	91	92	_____	93	94	95
08	87		88	89	90	91	92	_____	93	94	95
09	87		88	89	90	91	92	_____	93	94	95
10	87		88	89	90	91	92	_____	93	94	95
11	87		88	89	90	91	92	_____	93	94	95
12	87		88	89	90	91	92	_____	93	94	95
13	87		88	89	90	91	92	_____	93	94	95
14	87		88	89	90	91	92	_____	93	94	95
15	87		88	89	90	91	92	_____	93	94	95
16	87		88	89	90	91	92	_____	93	94	95
17	87		88	89	90	91	92	_____	93	94	95
18	87		88	89	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
 0400

2. Now I need some additional information about your labor.
 Please report the paid and unpaid labor that worked on the selected field to produce the 2019 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	2	3
	scouting for weeds, insects and diseases? Hours	irrigating? Hours	performing other work by hand? Hours
You (the operator)	1101	1102	1103
Partner(s)	1104	1105	1106
Unpaid workers	1107	1108	1109
Paid part-time or seasonal workers 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 on the selected field? Part-time workers are defined as those who worked for wages or salaries for less than 30 hours a week on average. EXCLUDE custom and contract workers, payroll taxes and benefits.....

Dollars & Cents Per Hour	OR	Total Dollars per Week	AND	Number of Hours Worked Each Week
1119		2119		3119

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

Dollars & Cents Per Hour	OR	Total Dollars per Week	AND	Number of Hours Worked Each Week
1118		2118		3118

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

	Code
Yes=1 No=3	1116

[If item 5 = 1, ask--]

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

Dollars & Cents Per Acre
1117

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

Percent
1120

12. Please report how any data from the selected field in 2019 will be stored and accessed.

a. Did you access the data collected from the selected field on a --

- i. Paper hard copy?.....
- ii. Personal computer?.....
- iii. Mobile device?.....

Code	
Yes=1	2485
No=3	
Yes=1	2486
No=3	
Yes=1	2487
No=3	
Yes=1	2488
No=3	

[If item 12b = 1, 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?.....
- d. Did you share any of the data collected from the selected field with a third party through an agricultural technology provider website?.....

Code	
Yes=1	2489
No=3	
Yes=1	2490
No=3	
Yes=1	2460
No=3	

13. Were there or will there be any data collection tools such as yield monitors, GPS mapping, etc. used during field operations on this barley field?.....

[If item 13 = 1, continue, otherwise go to item 16.]

Please report the data collection technologies you used on the selected field in 2019 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 Yes = 1 No = 3	Collected GPS coordinates Yes = 1 No = 3	Data was/will be used to create a map Yes = 1 No = 3	Replacement Cost Total Dollars	Annual Fee Total dollars
a. Yield monitor.....	2461	2462	2463	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 13a column 2 = 1, continue, otherwise go to item 15.]

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

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

Code	
Yes=1	1141
No=3	
Yes=1	1144
No=3	
Yes=1	1143
No=3	

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

15. Using data collected from the previous tools table in item 13, did you obtain crop management recommendations, such as data interpretation, in 2019 for the selected field from any of the following--

- a. input dealers without other fee-for-services?.....
- b. input dealers with other fee-for-services?.....
- c. custom service providers?.....
- d. USDA/university extension services?.....

	Code
Yes=1	2491
No=3	
Yes=1	2492
No=3	
Yes=1	2493
No=3	
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. EXCLUDE 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
3150		3151

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

- a. Mounted in-cab heads-up displays?.....
- b. Smart phones or computer tablets?.....
- c. Automatic section control, such as auto sprayer boom controls or automatic section shut offs?.....

	Code
Yes=1	2155
No=3	
Yes=1	2156
No=3	
Yes=1	2165
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. EXCLUDE 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
2166		2167

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

	Code
Yes=1	2148
No=3	

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

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

1 New, owned
2 Used, owned
3 Leased

Code
2158

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

Year
2159

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

Dollars & Cents per Acre	OR	Total Dollars
2160		2161

Code

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

Yes=1
No=3

2164

[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 barley in 2019.

1 Was a variable rate applicator used on the selected field for:	2 Tool Used Yes = 1 No = 3	3 Was this applicator 1 Sensor-based 2 GPS-based 3 Both 4 Neither Code	4 Was this applicator 1 New, owned 2 Used, owned 3 Leased Code	5 What year was the applicator first used? Year	6 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

Acres

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

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

[If none, go to Conclusion]

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

a. What type of irrigation system was used to irrigate the selected field?
[Show System Type Codes in the Respondent Booklet. Enter System Type Code for system that applied the most water.].....

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 and applied by any irrigation system.....

Unit	System
System Type Code	1161
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 barley 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 barley growing season using any system? INCLUDE any pre-plant irrigation.....

Number of Irrigations	1167
-----------------------	------

e. What was the pump type? [If more than one pump in the system, enter 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
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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
	.____

<p>3. What was the cost of the fuel or electricity used to irrigate the selected field? INCLUDE operator, landlord, and contractor costs.....</p>	<p>Dollars & Cents per Acre</p>	<p>OR</p>	<p>Total Dollars</p>
	<p>1189 .__</p>		<p>1190</p>
			<p>Code</p>
<p>4. Was any water purchased to irrigate the selected field ? INCLUDE landlord's share and purchases from all sources.....</p>		<p>Yes=1 No=3</p>	<p>1191</p>
<p>[If item 4 = 1 ask, otherwise go to item 5.]</p>			
<p>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.....</p>	<p>Dollars & Cents per Acre</p>	<p>OR</p>	<p>Total Dollars</p>
	<p>1193 .__</p>		<p>1194</p>
			<p>Total Dollars</p>
			<p>1201</p>
			<p>Total Dollars</p>
<p>5. What would be the total cost to replace all the siphon tubes used on the selected field?.....</p>			<p>1202</p>
<p>[If poly pipe system was used, item 2a = 14, ask--]</p>			
<p>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.....</p>			<p>1203</p>
<p>[If gated pipe system was used, item 2a = 15 or 16, ask--]</p>			
<p>7. What was the average diameter of gated pipe used to irrigate the selected field?.....</p>			<p>1204</p>
			<p>Inches</p>
			<p>1205</p>
			<p>Feet</p>
<p>a. What was the total length of gated pipe used?.....</p>			<p>1206</p>
			<p>Code</p>
<p>8. Were wells used to supply irrigation water for the selected field?.....</p>		<p>Yes=1 No=3</p>	<p>1207</p>
<p>[If item 8 = 1 continue, otherwise go to item 9.]</p>			
			<p>Number</p>
<p>a. How many wells were used to irrigate the selected field?.....</p>			<p>1208</p>
			<p>Inches</p>
<p>b. What was the average diameter of the outer well casing?.....</p>			<p>1209</p>
			<p>Inches</p>
<p>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.....</p>			<p>1210</p>
			<p>Feet</p>
			<p>1211</p>
			<p>Code</p>
<p>d. Were other fields irrigated using water pumped from wells that supplied water to the selected field?.....</p>		<p>Yes=1 No=3</p>	<p>1212</p>
<p>[If item 8d = 1 continue, otherwise go to item 9.]</p>			
			<p>Acres</p>
<p>e. Excluding the selected field, how many other acres on this operation were irrigated using the same wells during the 2019 growing season?.....</p>			<p>1213</p>
			<p>Code</p>
<p>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.....</p>		<p>Yes=1 No=3</p>	<p>1214</p>
<p>[If item 9 = 1 continue, otherwise go to Conclusion.]</p>			
			<p>Inches</p>
<p>a. What was the average diameter in inches of the most common type of this additional pipe used?.....</p>			<p>1215</p>
			<p>Feet</p>
<p>b. How many feet of this additional pipe were used to bring water to the selected field?.....</p>			<p>1216</p>

