

AGRICULTURAL RESOURCE MANAGEMENT SURVEY  
PHASE II  
OATS PRODUCTION PRACTICES and COST REPORT  
RESPONDENT BOOKLET



2023



National  
Agricultural  
Statistics  
Service

Dear Producer,

Every year, the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) conducts the Agricultural Resource Management Survey (ARMS). The survey gathers information on production practices for different commodities each year. In 2023, ARMS focuses on U.S. oats, peanuts, and soybeans production and or cost practices.

The interviewer will ask you to report your nutrient or fertilizer use and your pest management practices. The results of this survey will help agricultural leaders and decision-makers better understand how producers cope with risk, adapt to policy changes, and make decisions about chemical use, new technologies and many other aspects of farming.

Your participation is important. By responding to this survey not only can you help ensure that decisions impacting the production practices and well-being of farms are based on accurate, timely information, you also represent and give voice to thousands of farmers like you across the nation.

As with all our surveys, NASS safeguards the privacy of all respondents, ensuring that no individual respondent or operation can be identified. Be assured that your responses to ARMS will be kept **confidential**, as required by federal law.

Thank you in advance for investing in the future of U.S. agriculture. You are helping to ensure that decisions affecting you, your family, your business and your community are based on the facts.

Sincerely,

Chair, Agricultural Statistics Board  
U.S. Department of Agriculture  
National Agricultural Statistics Service

Enclosures

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.

## FEDERAL CROP INSURANCE COVERAGE

### Section B, Item 29a

- 1 **Federal CAT** (Basic Catastrophic Insurance) bought for a flat fee and protects against crop loss greater than 50% of average yield at 55% of the price.
- 2 **APH** -- Buy-up above Federal CAT yield and/or price level.
- 3 **Other Federal Crop Insurance** (*Group Risk Plan, Adjusted Gross Revenue, Group Risk Income Protection, etc.*)

## FERTILIZER/PESTICIDE APPLICATION METHODS

### Section C, Column 6 & Section D, Column 9

- 1 Broadcast, ground without incorporation
- 2 Broadcast, ground with incorporation
- 3 Broadcast, by aircraft
- 4 In seed furrow
- 5 In irrigation water
- 6 Chisel/injected or knifed in
- 7 Banded in or over row
- 8 Foliar or directed spray
- 9 Spot treatments (**Section D only**)

Section C, item 3

Common Fertilizers and Their Percent Analysis

[Enumerator Note: If Respondent cannot report the formulation for Section C, item 3, use the formulations below.]

Name	Form	Percent Active Ingredients			
		N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	S
Ammonia	D/L	80	---	---	---
Ammoniated superphosphate	D	12-17	22-35	---	---
Ammonium metaphosphate	D	12	51	---	---
Ammonium nitrate	D	32-34	---	---	---
Ammonium phosphate	D	11-18	46-48	---	---
Ammonium phosphate nitrate	D	27-30	10-15	---	---
Ammonium phosphate sulfate (APS)	D	13-16	20	---	15
Ammonium polyphosphate (APP)	L	10-11	34-37	---	---
Ammonium polysulfide (Ammonium Sulfate)	L	20-21	---	---	24
Ammonium sulfate nitrate	D	20-30	---	---	5
Ammonium thiosulfate solution	L	12	---	---	26
Anhydrous ammonia	L/G	82	---	---	---
Aqua ammonia (Ammonium Hydroxide)	L	16-25	---	---	---
Bone meal	D	0-2	10-20	---	---
Calcium ammonium nitrate	D	15-16	---	---	---
Diammonium phosphate sulfur	D	15-16	39-41	---	---
Diammonium phosphate (DAP)	D	16-21	46-53	---	---
Elemental sulfur	D	---	---	---	52-100
Greensand	D	---	1	6	---
Magnesium sulfate	D	---	---	---	13
Monoammonium phosphate (MAP)	D	11-13	48-62	---	---
Natralene	D/L	40	---	---	---
Nitrogen solutions	L	7-58	---	---	---
Nitric phosphate	D	12-17	22-35	---	---
Phosphate rock	D	---	2-35	---	---
Phosphoric acid	L	---	2-76	---	---
Potassium carbonate	D	---	---	34-48	---
Potassium chloride (Muriate of potash)	D	---	---	60-62	---
Potassium magnesium sulfate	D	---	---	22	23
Potassium metaphosphate	D	---	55-57	37-38	---
Potassium nitrate	D	13	---	44	---
Potassium orthophosphate	D	---	30-60	30-50	---
Potassium polyphosphate	L	---	40-60	22-48	---
Potassium sodium nitrate	D	15	---	14-15	---
Potassium solutions	L	---	---	13-15	---
Potassium sulfate	D	---	---	50-53	16
Sodium nitrate (Nitrate of Soda)	D	15-16	---	---	---
Sulfuric acid	L	---	---	---	20-26
Super phosphate (22% & under)	D	---	16-22	---	11
Super phosphate (over 22%)	D	---	23-39	---	11
Triple super phosphate	D	---	40-54	---	11
Urea	D	45-46	---	---	---
Urea, sulfur coated	D	36-38	---	---	13-16
Urea ammonium phosphate	D	25-58	28-35	---	---
Urea ammonium nitrate (UAN)	L	28-32	---	---	---
Urea phosphate	D	17	44	---	---

**CHEMICALS and PESTICIDES for Oats, All**

**F** = Fungicide; **H** = Herbicide; **I** = Insecticide; **M** = Misc. Other; **MD**=Defoliant/Dessicant; **MG** = Growth Regulator  
**AS**; Aqueous Suspension, **D** = Dust, **DF** = Dry flowable, **DG** = Water-Dispersible Granules, **E** or **EC** = Emulsifiable Concentrate,  
**ES** = Emulsifiable solution, **F** or **L** = Flowable, **G** or **GR** = Granular, **L** = Liquid, **LV** = Low volatility, **M** or **ME** = Microencapsalted,  
**P** = Pellets, **S** = Solution, **SC** = Soluble Concentrate **SL** = Slurry, **SP** = Soluble powder, **W** or **WP** = Wettable powder,  
**WDG** or **WG** = Water-Dispersible Granules, **WSP** = Water-soluble packet

Form	Class	Code	Project Name	EPA #	Form	Class	Code	Project Name	EPA #
L	H	40480	2,4-D Amine 4	62575-1	L	H	40264	Butyrac 200	42750-38
L	H	40479	2,4-D Amine 4	42750-19	L	H	40570	Clarity (4L)	35935-6
L	H	40477	2,4-D Amine 4	34704-120	L	H	40465	Curtail M (EC)	62719-86
L	H	40478	2,4-D Amine 4	17-413	L	H	40309	Esteron 6E	62719-8
L	H	40754	2,4-D Amine 6	42750-1	D	H	40248	Harmony Extra XP	35-611
L	H	40753	2,4-D Amine 6	2217-668	L	H	40329	Hi-Dep	2217-703
L	H	40755	2,4-D Amine 6	1386-43	L	H	40400	MCP Amine 4	2217-36
L	H	40750	2,4-D Amine 6	264-690	L	H	40401	MCP Amine 4	34704-130
L	H	40580	2,4-D LV6	1386-616	L	H	40399	MCP Amine 4	62719-13
L	H	4058	2,4-D LV6	1381-101	L	H	40666	Peak (WDG)	5905-503
D	H	40581	2,4-D LV6	100-763	L	H	41162	Roundup Original II	524-454
L	H	40245	Banvel (4L)	7969-131	L	H	40372	Salvo	34704-609
L	H	40113	Buctril (2EC)	264-437	L	H	40406	Weedone LV4 Solventless	71368-14
L	H	40114	Buctril 4EC	264-540	L	H	40407	Weedone LV6	71368-6

**Conversion Factors for Liquid and Dry Products**

**Liquid Products**

1 Gallon = 4 Quarts  
 1 Quart = 2 Pints  
 1 Pint = 16 Fluid Ounces  
 2 Cups = 1 Pint

**Dry Products**

1 Pound = 16 Dry Ounces  
 1 Ounce = 28.3 Grams  
 1 Pound = 453 Grams

# MACHINERY and IMPLEMENT CODES

## Section F, Item 1, Columns 3 & 4

### PLOWS and DISKS

- 01 Chisel Plow (Big Ox)
- 02 Coulter Plow  
(Coulter Chisel, Soil Saver, Soil Conservor)
- 03 Deep Ripper  
(Knife, Bed knife, Slide)
- 04 Disk Plow

#### Moldboard

- 05 Regular
- 06 Two Way
- 07 Stubble-mulch  
(Noble, Sweeps, Hoeme Plow, Muckeroy Plow)
- 08 Subsoiler  
(Chisel, Ripper, V-ripper)
- 09 Disk-chisel  
(Mulch Tiller)

#### Offset Disk

- 10 Heavy Disk
- 11 Light Disk
- 12 One-way Disk  
(Disk Tiller)
- 13 Single Disk

#### Tandem Disk

- 14 Plowing
- 15 Regular
- 16 Paraplow

### MISCELLANEOUS TILLAGE

- 61 Land-all, Do-all, Mix-n-till, Till-all  
(Disk, Shovels, Reel & Spikes)
- 62 Mulch Treader, Picker,  
Treader, Skew
- 63 Roto-tiller
- 64 Roterra (Roto-spike, Lely)
- 65 Sand-fighter
- 66 Soil Finisher  
(Finishing Tool, Mulch Finisher  
Tri-tiller, Task Master)
- 67 Root Crown Puller
- 68 Stalk Puller/Chopper

### BEDDERS-SHAPERS

- 41 Bedder (Shaper)  
(Bedshaper, Crowder)
- 42 Bed Shaper

#### Disk

- 43 Hipper
- 44 Row
- 45 Float
- 46 Lister (Middle-buster)
- 47 Rorovator-bedder
- 48 Seedbed Roller  
(Flat Roller)
- 49 Sub-soil Bedder  
(Ripper-hipper)
- 50 Discovator

### FERTILIZER APPLICATORS

- 71 Aerial (Airplane)
- 72 Attachment to implement
- 73 Manure Spreader
- 74 Self-propelled
- 75 Truck Spreader
- Tractor Mounted**
- 76 Anhydrous
- 77 Dry
- 78 Liquid
- Trailer Mounted**
- 79 Anhydrous
- 80 Dry
- 81 Liquid

### HARROWS (DRAGS)

- 30 Heavy Harrow
- 31 Field Conditioner  
(Scratcher,  
Seed Bed Conditioner,  
Soil Conditioner,  
Ground Hog)
- 32 Finishing  
(Harrogator, Spiral, Roller,  
Knives, Shanks, Pegs,  
Smoother)
- 33 Flex-tine Tooth  
(Coil Tine)
- 34 Multi-weeder  
(Cultivator & Harrow)
- 35 Rail, Pipe, Log, Plank
- 36 Rod Weeder
- 37 Roller (Culti-mulcher,  
Pulvi-mulcher, Crumbler,  
Packer-mulcher,  
Packer & Shanks)
- 38 Spike Tooth
- 39 Spring Tooth
- 40 Powered Spike Tooth Harrow

### PACKERS

- 51 Culti-packer  
(Pulverizer, Crow-foot,  
Serrated, Ring, Spiral)

#### Roller-packer

- 52 Attachment
- 53 Smooth & Flat

### PLANTERS

- 111 Bedder-shaper Planter
- 112 Lister-bedder
- 113 No-till, Minimum Till,  
(Ripper Planter)
- 114 Conventional,  
Regular (Tye, Flex)
- 115 Air Delivery/vacuum
- 116 Ridge till

### CULTIVATORS

#### Field Cultivators

- 21 Regular Digger,  
Triple K, Danish Tined,  
Swedish Tined,  
Incorporated, S-tine,  
Cultivator,  
Vibra-shank Harrow,  
Lilliston Tiller
- 26 Heavy Duty  
(Duckfoot Cultivator)
- 27 Marker
- 28 Fallow Master
- 22 Furrow-out Cultivator
- 23 Rotary Hoe  
(Crust Buster)
- Row Cultivators**
- 24 Disk Sweep, Shovel
- 25 Rolling, Rotary

**CHEMICAL APPLICATIONS**

- 91 Aerial (Airplane)
- 92 Attachment to implement
- 93 Largest Self propelled  
(or Large Truck)
- 94 Motorcycle/atv Sprayer
- 95 Small Self-propelled  
(Spray-coupe, Hi-cycle)
- 96 Small Truck (Skid Mounted)
- 97 Tractor Mounted
- 98 Trailer Mounted

**DRILLS and SEEDERS**

- 101 Aerial Seeding
- 102 Broadcast Seeder

**Drill**

- 103 Air Delivery
- 104 Lister Disk
- 105 No-till or minimum till
- 106 Plain
- 107 Press, Disk or Hoe

**HARVESTING EQUIPMENT**

**Small Grains/Row Crops Combine**

- 121 Hillside
- 122 Self propelled, 2wd
- 123 Self-propelled, 4wd
- 124 Track
- 125 PTO/motor Mounted

**Windrower-swather**

- 126 (Grain/hay)PTO
- 127 (Grain/hay) self-propelled
- 133 Corn Picker
- 134 Hand Harvesting

**LAND FORMING EQUIPMENT**

- 171 Backhoe
- 172 Disk Border Maker
- 173 Ditch Closer
- 174 Ditcher
- 175 Levee Plow Disk
- 176 Quarter Drain Machine
- 177 Rear Mounted Blade
- 178 Corrugator  
(Furrow Dicer, Dammar Dicer,  
Dicer)
- 180 Land Plane Leveler  
(Water Leveler)
- 181 Laser Planer, Laser Leveler
- 182 Gate Setter
- 183 Bull Dozer
- 184 Polypipe roller
- 197 Rock Picker

**ENUMERATOR NOTE:**

*For Land Forming Equipment codes  
171 – 184, enter Total Hours Operated  
in column 10.*

**MOWERS and BALERS**

- 141 Amish Harvester

**Baler**

- 145 Motor Mounted
- 146 PTO (Large)
- 147 PTO (Small)
- 148 Self-propelled
- 159 Stacker, Automatic

**Mowers**

- 149 Mower-chopper-Rotary
- 150 Conditioner/PTO
- 151 Self-propelled
- 152 Drum disk
- 153 Flail
- 154 Sickle

**Rake**

- 155 Dump
- 156 Side Delivery
- 157 Wheel
- 162 Hay Tedder
- 234 Brush Rake Sweeper

**HAULING EQUIPMENT**

**Bale wagon/mover**

- 142 Bale wagon (PTO)
- 143 Bale Wagon (Self-propelled)
- 144 Bale Loader
- 158 Stack Mover
- 160 Front End Loader
- 161 Round Bale Mover
- 195 Hay wagon
- 224 Forklift

**Trailers**

- 194 General Purpose Wagon or Cart
- 195 Hay Wagon
- 208 Gravity Wagon
- 209 Grain Cart with Auger
- 210 Grain Cart with Auger (Self-  
Propelled)
- 221 Forage Wagon
- 222 Dump Wagon
- 229 Bin Trailer
- 228 Other Trailers

**Trucks**

- 301 Single Axle
- 302 Tandem Axle
- 303 Tri Axle
- 304 Semi
- 305 Other Trucks

**ENUMERATOR NOTE:**

*For Hauling Equipment codes above,  
enter Total Hours Operated in  
column 10.*

**OTHER IMPLEMENTS**

- 191 Burn Buggy
- 192 Chaff/straw Saver
- 193 Electric-discharge Weed Killer
- 196 Off-field Thresher
- 198 Rock Windower or Rake
- 199 Rodent (Gopher) Killer
- 200 Roller Groover
- 201 Rubber-wheeled Weed Puller
- 202 Flail Shredder
- 203 Rotary Shredder
- 204 Silage Harvester
- 205 Stalk Shredder, Stalk Cutter
- 206 Swath Roller
- 207 Tractor or Truck–No attachments
- 223 Flame Thrower

PTO Power Take-off

WD Wheel Drive

**CHEMICAL APPLICATIONS**

- 91 Aerial (Airplane)
- 92 Attachment to implement
- 93 Largest Self propelled  
(or Large Truck)
- 94 Motorcycle/atv Sprayer
- 95 Small Self-propelled  
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- 125 PTO/motor Mounted

**Windrower-swather**

- 126 (Grain/hay)PTO
- 127 (Grain/hay) self-propelled

- 133 Corn Picker
- 134 Hand Harvesting

**PEANUT EQUIPMENT**

- 281 Combine, PTO
- 282 Digger-shaker
- 283 Shaker-inverter
- 284 Reshaker-conditioner
- 285 Vine Cutter
- 286 Wagon

**LAND FORMING EQUIPMENT**

- 171 Backhoe
- 172 Disk Border Maker
- 173 Ditch Closer
- 174 Ditcher
- 175 Levee Plow Disk
- 176 Quarter Drain Machine
- 177 Rear Mounted Blade
- 178 Corrugator  
(Furrow Dicer, Dammar Dicer,  
Dicer)
- 180 Land Plane Leveler  
(Water Leveler)
- 181 Laser Planer, Laser Leveler
- 182 Gate Setter
- 183 Bull Dozer
- 197 Rock Picker

**ENUMERATOR NOTE:**

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**Mowers**

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- 150 Conditioner/PTO
- 151 Self-propelled
- 152 Drum disk
- 153 Flail
- 154 Sickle

**Rake**

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- 156 Side Delivery
- 157 Wheel
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- 234 Brush Rake Sweeper

PTO Power Take-off

WD Wheel Drive

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- 228 Other Trailers

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- 302 Tandem Axle
- 303 Tri Axle
- 304 Semi
- 305 Other Trucks

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- 201 Rubber-wheeled Weed Puller
- 202 Flail Shredder
- 203 Rotary Shredder
- 204 Silage Harvester
- 205 Stalk Shredder, Stalk Cutter
- 206 Swath Roller
- 207 Tractor or Truck–No attachments
- 223 Flame Thrower

## IRRIGATION TYPE CODES

### Section G, Item 2

PRESSURE SYSTEMS		GRAVITY SYSTEMS	
1	HAND-MOVE	10	SIPHON TUBE from unlined ditches
2	SOLID or PERMANENT SET	11	SIPHON TUBE from lined ditches
3	SIDE ROLL or WHEEL LINE	12	PORTAL SYSTEM from unlined ditches
4	CENTER PIVOT or LINEAR MOVE with sprinklers on main line	13	PORTAL SYSTEM from lined ditches
5	CENTER PIVOT or LINEAR MOVE with sprinklers below main line, but more than 2 feet above ground	14	ANY POLY PIPE SYSTEM
6	CENTER PIVOT or LINEAR MOVE with sprinklers less than 2 feet above ground	15	GATED PIPE (not poly pipe)
7	BIG GUN	16	IMPROVED GATED PIPE (surge flow or cablegation not poly pipe)
8	LOW FLOW IRRIGATION (drip, trickle or micro sprinkler)	17	SUBIRRIGATION
9	OTHER - SPECIFY	18	OPEN DISCHARGE FROM WELL or PUMP
		19	OTHER - SPECIFY

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**Notes:**