

WASHINGTON AGRICULTURAL CHEMICAL USAGE 2003



Potatoes

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U.S. Department of Agriculture
Washington Agricultural Statistics Service
P.O. Box 609, Olympia, WA 98507

Potato Highlights

Chemical Usage

Ten fall producing States were included in the 2003 survey: Colorado, Idaho, Maine, Michigan, Minnesota, North Dakota, Oregon, Pennsylvania, Washington, and Wisconsin. Nitrogen fertilizer was applied to 100 percent of the fall potato acreage in these States. Nitrogen applications averaged 4.0 per acre with a total of 218.5 million pounds applied. Phosphate was applied to 94 percent of the fall potato acres in the Program States, with a total of 158.2 million pounds applied. Potash was applied to 88 percent of the acreage planted to fall potatoes in the States surveyed.

Herbicides were applied to 91 percent of the fall potato acreage in 2003 in the ten Program States. Metribuzin was the most widely applied herbicide, applied to 69 percent of the planted acreage being treated, at a rate of 0.42 pounds per acre. Insecticides were applied to 84 percent of the 2003 fall potato planted acreage. The two most commonly applied

insecticides reported in the States surveyed were imidacloprid and cyfluthrin. Fungicide treatments were applied to 91 percent of the fall potato acreage in the Program States. Mancozeb was used most commonly. Usage of Other Chemicals, primarily desiccants, varied widely among the states surveyed. Percent of acreage treated ranged from 3 percent in North Dakota to 77 percent in Washington.

Pest Management Practices

The two most common pest management practices for fall potatoes were scouting for pests and rotating field crops, each practice performed on over 90 percent of the farms in the ten Program States. Cultivating the fall potato field for weed control during the growing season was practiced on 97 percent of the farms surveyed. Maintaining field edges, lanes, ditches, roadways, or fence lines as a prevention practice was used on 81 percent of the fall potato acres.

Fall Potatoes: Chemical Applications, Total Acreage & Percentage Receiving Applications, Major States & Total, 2001 & 2003

State	Planted Acreage		Area Receiving Fertilizer 1/						Area Receiving Pesticide 2/							
			Nitrogen		Phosphate		Potash		Herbicide		Insecticide 3/		Fungicide		Other	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
	1,000 Acres		Percent						Percent							
CO 5/	-	73	-	98	-	96	-	90	-	84	-	71	-	90	-	57
ID	370	360	99	100	97	95	77	86	75	89	93	78	70	78	59	57
ME	62	66	98	100	98	100	98	100	92	100	88	88	98	100	97	21
MI 5/	-	46	-	100	-	98	-	98	-	94	-	99	-	96	-	48
MN	59	60	93	100	89	94	89	92	78	94	95	69	97	98	56	4
ND 4/	118	117	-	97	-	92	-	84	-	82	-	80	-	99	-	3
OR 4/	45	43	-	100	-	96	-	84	-	95	-	83	-	94	-	70
PA 5/	-	15	-	100	-	99	-	99	-	91	-	99	-	96	-	6
WA	160	163	97	100	92	85	92	82	92	94	95	97	91	99	78	77
WI	84	81	100	100	98	99	100	100	88	94	100	99	97	99	86	38
Total	898	1,024	98	100	95	94	86	88	82	91	93	84	85	91	61	47

1/ Refers to acres receiving one or more applications of a specific ingredient.

2/ Refers to acres reported as receiving one or more applications of a specific pesticide class.

3/ Total applied excludes Bt's (*Bacillus thuringiensis*). Quantities are not available because amounts of active ingredient are not comparable between products.

4/ Insufficient reports to publish data for one or more of the fertilizer or pesticide classes.

5/ State not surveyed in 2001.

- Not applicable.

Source: "Agricultural and Chemical Usage - 2003 Field Crops Summary": ARMS, National Agricultural Statistics Service, USDA.

Fall Potatoes: Agricultural Chemical Applications, Washington, 2001-03 1/

Agricultural Chemicals 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2001	2003	2001	2003	2001	2003	2001	2003	2001	2003
Fertilizers:	Percent		Number		Pounds Per Acre				Million Pounds	
Nitrogen	97	100	2.2	3.6	109	73	244	265	37.6	43.1
Phosphate	92	85	1.7	1.9	131	121	224	239	33.0	33.2
Potash	92	82	1.4	1.3	172	169	254	229	37.4	30.7
Herbicides:	Percent		Number		Pounds Per Acre				1,000 Pounds	
EPTC	29	40	1.0	1.1	3.37	3.19	3.43	3.54	157	228
Glufosinate-ammonium	-	17	-	1.0	-	0.37	-	0.37	-	11
Glyphosate	13	-	1.0	-	0.44	-	0.44	-	9	-
Metribuzin	74	76	1.0	1.0	0.43	0.44	0.46	0.44	54	55
Pendimethalin	39	19	1.0	1.0	0.73	0.53	0.73	0.54	46	17
Rimsulfuron	10	14	1.0	1.0	0.02	0.02	0.02	0.02	**	4/
Trifluralin	11	17	1.0	1.2	0.43	0.63	0.43	0.79	7	21
Insecticides:										
Aldicarb	33	25	1.0	1.0	2.90	2.84	2.90	2.84	153	116
Carbofuran	12	7	1.3	1.0	1.27	0.25	1.72	0.27	34	3
Cyfluthrin	21	51	1.3	1.3	0.03	0.03	0.04	0.04	1	3
Dimethoate	-	14	-	2.0	-	0.42	-	0.84	-	19
Esfenvalerate	15	13	1.2	1.2	0.04	0.04	0.05	0.05	1	1
Ethoprop	11	14	1.0	1.0	7.01	3.97	7.01	3.97	119	91
Imidacloprid	32	53	1.2	1.3	0.10	0.05	0.12	0.06	6	5
Methamidophos	49	57	1.9	1.6	0.96	0.94	1.85	1.54	143	144
Oxamyl	-	14	-	2.6	-	0.82	-	2.19	-	51
Phorate	17	14	1.0	1.0	2.36	3.07	2.36	3.07	63	72
Propargite	11	31	1.0	1.0	1.84	1.81	1.87	1.94	34	97
Pymetrozine	15	10	1.2	1.8	0.09	0.09	0.11	0.16	3	3
Thiamethoxam	11	-	1.0	-	0.05	-	0.05	-	1	-
Fungicides:										
Azoxystrobin	27	39	1.4	1.3	0.13	0.42	0.19	0.58	8	37
Chlorothalonil	58	62	2.5	2.4	1.04	0.98	2.63	2.41	245	242
Copper hydroxide	10	6	3.0	1.2	0.55	0.72	1.65	0.91	27	9
Cymoxanil	12	12	1.9	1.1	0.03	0.12	0.06	0.14	1	3
Fluazinam	-	67	-	1.5	-	0.24	-	0.37	-	40
Iprodione	39	42	1.0	1.1	0.83	0.74	0.91	0.87	57	60
Mancozeb	61	83	2.7	3.0	1.29	1.44	3.53	4.32	343	583
Mefenoxam	17	29	1.2	1.0	0.29	0.27	0.35	0.29	10	14
Metalaxyl	41	13	1.3	1.2	0.13	0.20	0.19	0.25	12	6
Metiram	26	9	2.5	3.3	1.41	1.60	3.60	5.41	152	80
PCNB	-	38	-	1.7	-	1.77	-	3.00	-	184
Pyraclostrobin	-	10	-	1.4	-	0.12	-	0.17	-	3
Sulfur	23	39	1.6	2.1	2.76	3.09	4.65	6.66	174	423
Other Chemicals:										
Dichloropropene	17	12	1.0	1.0	171.24	157.83	171.24	157.83	4,559	3,189
Diquat	32	23	1.1	1.0	0.48	0.44	0.52	0.46	27	18
Maleic hydrazide	-	18	-	1.0	-	1.90	-	1.90	-	57
Metam-sodium	53	55	1.0	1.0	114.13	173.42	114.13	173.42	9,614	15,527
Paraquat	-	3	-	1.0	-	0.36	-	0.38	-	2

1/ Area planted in 2001 was 160,000 acres and in 2003 the area planted was 163,000 acres.

2/ Insufficient reports in 2001 to publish data for the following chemicals: Herbicides: Acetic acid, Glufosinate-ammonium, Metolachlor, S-Metolachlor. Insecticides: Azinphosmethyl, Carbaryl, Diazinon, Dimethoate, Endosulfan, Malathion, Methoxychlor, Oxamyl, Permethrin, Phosmet, Spinosad. Fungicides: Copper amm. complex, Dicloran, Dimethomorph, Maneb, PCNB, Propamocarb hydroch., Triphenyltin hydrox. Other Chemicals: Chloropicrin, Endothall, Maleic hydrazide, Paraquat. Insufficient reports in 2003 to publish data for the following chemicals: Herbicides: Clethodim, Glyphosate, Metolachlor, S-Metolachlor. Insecticides: Carbaryl, Diazinon, Disulfoton, Endosulfan, Indoxacarb, Methyl parathion, Permethrin, Phosmet, Spinosad, Thiamethoxam. Fungicides: Copper amm. complex, Copper oxychlo. sul., Copper resinate, Dicloran, Dimethomorph, Flutolanil, Propamocarb hydroch., Triphenyltin hydrox., Zoxamide. Other Chemicals: Busan 881, Chloropicrin, Endothall, Sulfuric acid.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical. 4/ Total applied is less than 500 lbs.

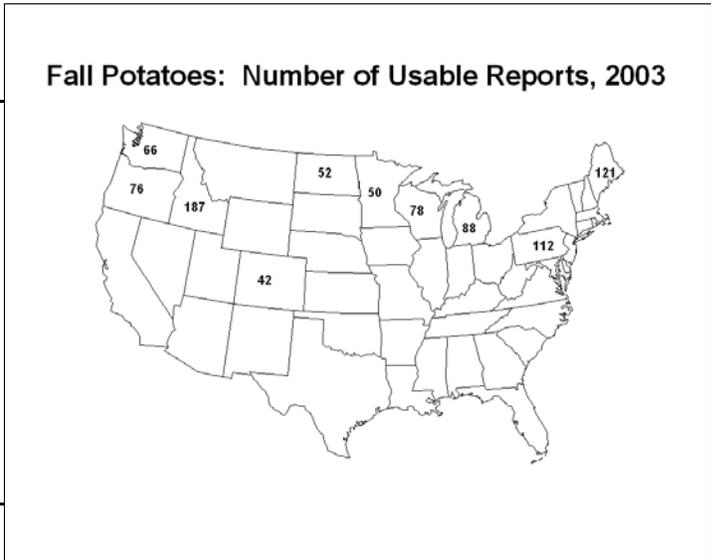
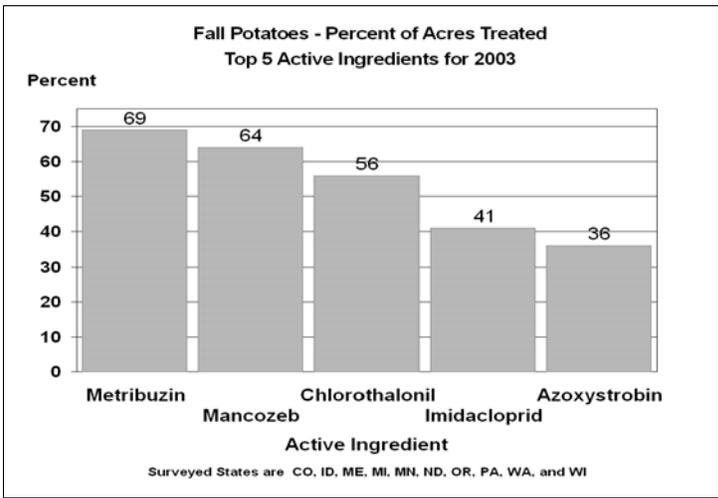
** Total applied is less than 1,000 lbs. - Insufficient reports to publish state level usage estimates. Note: Data may not multiply across due to rounding.

Source: "Agricultural and Chemical Usage - 2003 Field Crops Summary": ARMS, National Agricultural Statistics Service, USDA.

Trade Names, Common Names, and Classes

The following is a list of common name, associated class, and trade name of active ingredients in this publication. The classes are herbicides (H), insecticides (I), fungicides (F), and other chemicals (O). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not cataloged. The list is not complete for all pesticides used on field crops and NASS does not mean to imply use of any specific trade name.

Class	Common Name	Trade Name
I	aldicarb	Temik
F	azoxystrobin	Abound, Amistar, Quadris
I	carbaryl	Carbaryl, Sevin
I	carbofuran	Furadan
F	chlorothalonil	Echo, Terranil, Ridomil, Ensign, Tattoo, Bravo, Equus, Flouronil
H	clethodim	Prism, Select
F	copper hydroxide	Champ, Kocide, Nu-Cop, Ridomil, Mokocide
I	cyfluthrin	Aztec, Baythroid, Leverage
F	cymoxanil	Curzate, Manex
I	diazinon	Diazinon
O	dichloropropene	Telone
I	dimethoate	Dimethoate, Digon, Dimate, Cygon
H	diquat	Diquat, Reglone
I	disulfoton	Di-Syston, Terraclor
I	endosulfan	Endosulfan, Phaser, Thiodan, Thionex
H	EPTC	DoublePlay, Eptam, Eradicane
I	esfenvalerate	Asana
I	ethoprop	Mocap
H	fluazinam	Omega
H	glufosinate-ammonium	Liberty, Rely
H	glyphosate	Glyphomax, Glyphos, Mirage, Roundup, Glyphosate, Bronco, Engame, Fallow Master, Landmaster, Field Master
I	indoxacarb	Avaunt, Steward
I	imidacloprid	Admire, Leverage, Provado, Trimax
F	iprodione	Rovral, Iprodione
O	maleic hydrazide	Maleic hydrazide, Royal, Sprout Stop, Super Sprout Stop
F	mancozeb	Manex, Penncozeb, Ridomil, Dithane, Manzate, Curzate, Acrobat, Gavel, Monkocide
F	mefenoxam	Flourish, Ridomil, Flouronil
F	metalaxyl	Ridomil, Prevail, Kodiak
O	metam-sodium	Sectagon, Vapam, Busan
I	methamidophos	Monitor
I	methyl parathion	Declare, Methyl Parathion, Penncap-M
F	metiram	Polyram
H	metolachlor	Dual, Bicep, Turbo
H	metribuzin	Axiom, Lexone, Sencor, Turbo
I	oxamyl	Vydate
H	paraquat	Cyclone, Gramoxone, Starfire, Surefire
F	PCNB	Blocker, Kodiak, Prevail, Ridomil, Temik, Terraclor
H	pendimethalin	Prowl, Pendimax
I	permethrin	Pounce, Ambush, Eight, Perm-Up, Permethrin, Permethrin
I	phorate	Thimet, Phorate
I	phosmet	Imidan
I	propargite	Comite, Omite
I	pymetrozine	Fulfill
F	pyraclostrobin	Headline
H	rimsulfuron	Accent, Basis, Matrix, Steadfast, Basis Gold, DPX-79406
H	S-Metolachlor	Bicep, Camix, Cinch, Dual, Expert, Lumax
I	spinosad	SpinTor, Success, Tracer
F	sulfur	Bravo, Sulfur, Kumulus, Super Six, Thiolux, Microperse, Sul-Preme, Super-Sul, That Big
I	thiamethoxam	Actara, Centric, Platinum, Ridomil
H	trifluralin	Treflan, Trific, Trilin, Trust, Buckle, Tri-4, Trifluralin



Fall Potatoes: Pest Management Practices, Washington and Program States, 2003

Practices	WA	Program States	WA	Program States
	Percent of Acres Receiving		Percent of Farms Utilizing	
Prevention Practices:				
No-till/minimum till used to manage pests	20	15	14	56
Remove or plow down crop residue	79	52	79	77
Clean implements after fieldwork	80	60	74	75
Field cultivated for weed control	97	94	98	97
Field edges/etc. chopped, mowed/etc.	98	81	95	86
Water management practices	39	43	36	64
Avoidance Practices:				
Adjust planting/harvesting dates	14	11	10	5
Rotate crops to control pests	92	85	93	93
Planting locations planned to avoid pests	63	30	53	63
Grow trap crop to control insects	3	3	3	2
Seed variety chosen for pest resistance	40	14	28	4
Monitoring Practices:				
Scouting by general observation	54	25	50	14
Deliberate scouting activities	46	74	50	86
Field was not scouted	-	1	-	1
Scouting due to pest advisory warning	16	19	10	59
Scouting due to pest development model	15	22	10	7
Scouted for weeds	99	94	100	95
Scouting for weeds was done by:				
Operator, partner, or family member	62	60	66	34
An employee	13	10	11	55
Farm supply or chemical dealer	22	8	18	3
Indep. crop consultant or comm. scout	4	22	4	7
Scouted for insects and mites	99	97	100	99
Scouting for insects/mites was done by:				
Operator, partner, or family member	51	57	60	33
An employee	12	9	11	53
Farm supply or chemical dealer	33	10	24	4
Indep. crop consultant or comm. scout	4	24	4	10
Scouted for diseases	99	97	100	98
Scouting for diseases was done by:				
Operator, partner, or family member	50	57	59	33
An employee	12	8	11	53
Farm supply or chemical dealer	34	11	25	4
Indep. crop consultant or comm. scout	4	24	4	10
Records kept to track pests	74	59	60	74
Field mapping of weed problem	18	18	17	5
Soil/plant tissue analysis to detect pests	85	59	72	70
Weather monitoring	89	74	85	85
Biological pest controls	-	1	-	1
Suppression Practices:				
Biological pesticides	3	3	9	2
Beneficial organisms	3	7	2	1
Scouting used to make decisions	37	50	35	74
Maintain ground cover or physical barriers	18	35	28	68
Adjust planting methods	15	10	11	3
Alternate pesticides with different MOA	93	65	86	80