AGRICULTURAL CHEMICALS

CONSUMPTION OF FERTILIZER and PLANT NUTRIENTS, North Dakota, 1998-2002

Year Ended June 30	Gross Tonnage				Nutrient Content			
	Mixed Fertilizer	Primary Nutrient Material	Secondary & Micro-Nutrients	Total 1/	N	Available P_2O_5	K_2O	Total 1/
	- - - - - - - - - Tons - - - - - - - - -							
1998	344,420	611,693	6,635	962,738	386,965	163,111	25,699	575,775
1999	340,457	818,822	6,306	1,165,585	509,066	163,775	25,173	698,014
2000	407,281	846,338	7,043	1,260,663	514,899	196,738	30,558	742,195
2001	413,220	944,892	6,304	1,364,416	577,261	202,847	28,763	808,870
2002	422,004	874,911	7,232	1,304,147	522,914	205,148	30,827	758,889

Source: The Association of American Plant Food Control Officials. 1/ Totals may not add due to rounding.

FERTILIZER USE ON SELECTED CROPS, North Dakota, 1999-2003

Years Surveyed	Planted Acres	Fields in Survey	Area Receiving			Application Rates per Crop Year			Total Applied		
			N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
	1,000	Number	- - - Percent - - -			- - - Pounds Per Acre - - -			- - - Million Pounds - - -		
OTHER SPRING WHEAT											
2000	6,800	99	97	83	12	76	30	16	501.8	170.1	13.3
2002	6,900	113	97	83	19	75	35	24	499.8	197.7	30.6
DURUM WHEAT											
2000	3,250	117	86	66	5	62	22	14	173.8	47.6	2.1
2002	2,100	75	88	58	5	62	26	12	116.1	31.6	1.2
BARLEY											
2003	2,050	200	98	91	20	58	27	10	116.5	50.7	4.2
POTATOES											
1999	121	49	99	98	83	129	91	92	15.4	10.9	9.2
2001 1/	118										
2003	117	52	97	92	84	144	93	139	16.5	10.0	13.7
SUNFLOWER											
1999	1,700	209	96	40	1/	71	24	1/	116.9	16.4	1/
CORN											
2000	1,080	94	98	80	29	98	45	28	103.0	38.8	8.7
2001	880	92	94	83	38	109	46	31	89.9	33.8	10.1
2003	1,450	175	98	87	37	111	50	37	157.2	62.8	20.0
SOYBEANS											
2000	1,900	96	46	41	1/	32	32	1/	27.8	25.3	1/
2002	2,670	107	64	59	11	26	32	12	44.1	50.5	3.3
SUGARBEETS											
2000	258	152	94	92	38	72	54	29	17.4	12.7	2.8

Source: Agricultural Chemical Usage, USDA-NASS and ERS. 1/ Insufficient reports to publish data.

PESTICIDE USE ON SELECTED CROPS, North Dakota, 1999-2003

Years Surveyed	Area Receiving and Total Applied							
	Herbicides		Insecticides		Fungicides		Other Chemicals	
	Pct	1,000 Lbs	Pct	1,000 Lbs	Pct	1,000 Lbs	Pct	1,000 Lbs
OTHER SPRING WHEAT								
2000	97	4,205						
2002	95	3,749			6	68		
DURUM WHEAT								
2000	97	2,807						
2002	100	1,238						
BARLEY								
2003	98	1,067	4	12	11	20		
POTATOES								
1999	83	94	95	121	99	966	5	1,315
2001 1/								
2003	82	57	80	29	99	1,350	3	311
SUNFLOWER								
1999 1/	99	1,801	22	12				
CORN								
2000 1/	71	1,284						
2001 1/	90	745						
2003 1/	96	1,564						
SOYBEANS								
2000 1/	99	2,046						
2002 1/	100	3,350						
SUGARBEETS								
2000 1/	100	169	81	416	96	153		

Source: Agricultural Chemical Usage, USDA-NASS and ERS. 1/ Insufficient reports to publish data for one or more of the pesticide classes.

PESTICIDE APPLICATIONS ON SELECTED CROPS, North Dakota, 2003

Agricultural Chemical	Area Applied	Application Rates per Crop Year	Total Applied
	Pct	Lbs per Acre	1,000 Lbs
BARLEY, Herbicides			
2,4 D	31	0.37	233
Bromoxynil	38	0.22	170
Bromoxynil Octanoate	4	0.23	20
Dicamba	4	0.08	6
Fenoxaprop	58	0.06	68
Fluroxypyr	21	0.06	24
Fluroxypyr 1-methylh	3	0.12	7
Glyphosate	11	0.38	86
MCPA	63	0.29	378
Thifensulfuron	15	0.01	4
Tralkoxydim	1/	0.26	5
Tribenuron-methyl	9	0.008	1
Trifluralin	4	0.48	36
Fungicides			
Propiconazole	5	0.08	8
Tebuconazole	6	0.07	8
CORN, Herbicides			
Acetochlor	19	1.52	428
Atrazine	34	0.50	245
Clopyralid	3	0.07	3
Dicamba	11	0.19	29
Dicamba, Dimet. salt	24	0.11	40
Dicamba, Sodium salt	2	0.10	3
Diflufenzopyr-sodium	25	0.05	16
EPTC	2	3.17	104
Flumetsulam	3	0.02	1
Foramsulfuron	7	0.03	3
CORN, Herbicides (continued)			
Glufosinate-ammonium	6	0.37	35
Glyphosate	40	0.92	537
Mesotrione	3	0.08	4
Nicosulfuron	19	0.02	6
Rimsulfuron	16	0.01	2
POTATOES, Herbicides			
Metribuzin	42	0.35	17
Pendimethalin	17	1.24	25
Rimsulfuron	44	0.02	1
Insecticides			
Cyfluthrin	45	0.05	3
Dimethoate	25	0.46	14
Esfenvalerate	12	0.04	1
Imidacloprid	45	0.07	4
Thiamethoxam	23	0.06	2
Fungicides			
Azoxystrobin	27	0.11	4
Chlorothalonil	80	8.12	759
Cymoxanil	7	0.11	1
Mancozeb	79	5.81	539
Mefenoxam	17	0.13	3
Pyraclostrobin	29	0.22	8
Triphenyltin hydrox.	19	0.35	8
Zoxamide	14	0.21	4
Other Chemicals			
Diquat	34	0.56	22

Source: Agricultural Chemical Usage, USDA-NASS and ERS. 1/ Area applied to less than 0.5 percent.

PEST MANAGEMENT PRACTICES ON SELECTED CROPS, North Dakota, 2003

Practice	Acres Receiving Practice			Farms Utilizing Practice		
	Barley	Corn	Fall Potatoes	Barley	Corn	Fall Potatoes
	Pct of Acres			Pct of Farms		
PREVENTION PRACTICES						
No-till/Minimum Till Used to Manage Pests	44	38	23	45	40	14
Remove or Plow Down Crop Residue	25	27	36	24	24	30
Clean Implements After Fieldwork	52	36	52	56	39	40
Field Cultivated for Weed Control		33	97		29	99
Field Edges/etc. Chopped, Mowed/etc.	27	48	57	29	44	47
Water Management Practices		1	28		1	23
AVOIDANCE PRACTICES						
Adjust Planting/Harvesting Dates	5	10	7	10	8	5
Rotate Crops to Control Pests	87	80	93	86	74	96
Planting Locations Planned to Avoid Pests	16	29	42	22	21	40
Grow Trap Crop to Control Insects		24	8		18	22
Seed Variety Chosen for Pest Resistance	15	56	4	14	49	5
MONITORING PRACTICES						
Scouting by General Observation	52	28	4	48	39	9
Deliberate Scouting Activities	45	68	94	44	54	91
Field Was Not Scouted	3	5	2	8	7	1
Scouting Due to Pest Advisory Warning	2	4	23	2	3	19
Scouting Due to Pest Development Model	2	3	17	1	1	11
Scouted for Weeds	97	95	96	92	93	97
Scouted for Insects and Mites	59	69	98	58	55	99
Scouted for Diseases	64	68	98	59	55	99
Records Kept to Track Pests	18	35	75	19	28	85
Field Mapping of Weed Problem	8	12	6	7	7	7
Soil/Plant Tissue Analysis to Detect Pests	2	9	46	1	5	37
Weather Monitoring	55	73	76	45	66	84
SUPPRESSION PRACTICES						
Biological Pesticides		9	1		6	1
Beneficial Organisms			8			3
Scouting Used to Make Decisions	13	30	56	11	21	70
Maintain Ground Cover or Physical Barriers	29	31	22	30	25	39
Adjust Planting Methods		21	16		17	12
Alternate Pesticides with Different MOA	30	27	66	29	26	78

Source: Agricultural Chemical Usage, USDA-NASS and ERS.

NOTES