

Table 6. WHEAT: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	2157.4	26.3	98.3	1.7	.	.	.	90.2	9.8	2.9	97.1
2,4-D + Dicamba	59.0	0.7	100.0	.	.	.	.	80.8	19.2	.	100.0
Bromoxynil	52.3	0.6	100.0	.	.	.	.	86.4	13.6	.	100.0
Bromoxynil + 2,4-D	94.0	1.1	100.0	.	.	.	.	92.1	7.9	3.6	96.4
Bromoxynil + MCPA	2188.3	26.7	99.9	0.1	.	.	.	87.9	12.1	3.9	96.1
Bromoxynil + MCPA + Fenoxaprop	44.4	0.5	100.0	.	.	.	.	100.0	.	.	100.0
Carfentrazone	11.8	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Clodinafop	747.3	9.1	100.0	.	.	.	.	93.2	6.8	5.8	94.2
Clopyralid + 2,4-D	33.8	0.4	100.0	.	.	.	.	50.1	49.9	7.2	92.8
Clopyralid + Fluroxypyr	405.1	4.9	100.0	.	.	.	.	94.4	5.6	2.7	97.3
Clopyralid + MCPA	40.5	0.5	100.0	.	.	.	.	78.2	21.8	.	100.0
Dicamba	621.8	7.6	100.0	.	.	.	.	95.2	4.8	3.7	96.3
Fenoxaprop	3267.8	39.9	99.9	0.1	.	.	.	85.8	14.2	3.2	96.8
Fenoxaprop + 2,4-D + MCPA	10.9	0.1	100.0	.	.	.	.	88.5	11.5	.	100.0
Fenoxaprop + MCPA	43.9	0.5	100.0	.	.	.	.	84.6	15.4	.	100.0
Fenoxaprop + MCPA + Thifensulfuron + Tribenuron	17.8	0.2	100.0	.	.	.	.	31.9	68.1	4.8	95.2
Flucarbazone	608.4	7.4	100.0	.	.	.	.	88.6	11.4	2.6	97.4
Fluroxypyr	703.9	8.6	100.0	.	.	.	.	87.3	12.7	2.7	97.3
Fluroxypyr + 2,4-D	62.5	0.8	100.0	.	.	.	.	67.3	32.7	8.2	91.8
Fluroxypyr + MCPA	208.1	2.5	100.0	.	.	.	.	92.9	7.1	4.3	95.7
Glyphosate	809.7	9.9	98.4	1.6	.	.	.	79.2	20.8	4.4	95.6
MCPA	872.4	10.6	99.9	0.1	.	.	.	88.2	11.8	2.5	97.5
Mesosulfuron	13.5	0.2	100.0	.	.	.	.	32.8	67.2	.	100.0
Thifensulfuron	450.9	5.5	98.9	1.1	.	.	.	84.3	15.7	5.3	94.7
Thifensulfuron + Tribenuron	673.8	8.2	100.0	.	.	.	.	90.5	9.5	3.6	96.4
Tralkoxydim	12.3	0.2	100.0	.	.	.	.	100.0	.	.	100.0
Triallate	37.2	0.5	100.0	.	.	.	.	98.1	1.9	.	100.0
Tribenuron	296.9	3.6	96.6	3.4	.	.	.	87.1	12.9	3.1	96.9
Trifluralin	45.8	0.6	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Herbicide	787.6	9.6	100.0	0.0	.	.	.	66.3	33.7	2.6	97.4
TOTAL	15379.2	187.7	99.5	0.5	.	.	.	86.8	13.2	3.4	96.6
Insecticide											
Chlorpyrifos-ethyl	77.1	0.9	100.0	.	.	.	.	57.0	43.0	36.8	63.2
Cyhalothrin, lambda	26.9	0.3	80.2	19.8	.	.	.	100.0	.	.	100.0
Parathion, methyl	36.1	0.4	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Insecticide	78.8	1.0	100.0	.	.	.	.	89.2	10.8	8.4	91.6
TOTAL	218.9	2.7	97.6	2.4	.	.	.	81.0	19.0	16.0	84.0
Fungicide											
Azoxystrobin + Propiconazole	5.0	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Chlorothalonil	9.1	0.1	100.0	.	.	.	.	65.6	34.4	.	100.0
Propiconazole	378.8	4.6	99.8	0.2	.	.	.	81.3	18.7	3.3	96.7
Pyrachlostrobin	323.5	3.9	98.9	1.1	.	.	.	84.6	15.4	9.7	90.3
Tebuconazole	612.7	7.5	99.6	0.4	.	.	.	65.9	34.1	24.9	75.1
Trifloxystrobin + Propiconazole	105.4	1.3	100.0	.	.	.	.	95.2	4.8	.	100.0
Unknown or Other Fungicide	332.6	4.1	100.0	.	.	.	.	85.4	14.6	4.2	95.8
TOTAL	1767.1	21.6	99.6	0.4	.	.	.	78.1	21.9	11.9	88.1
Desiccant											
TOTAL	(D)	(D)	(D)	.	.	.	.	(D)	.	.	(D)

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 7. BARLEY: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
2,4-D	307.3	19.2	100.0	.	.	.	.	87.4	12.6	1.2	98.8
Bromoxynil	5.6	0.4	100.0	.	.	.	.	100.0	.	.	100.0
Bromoxynil + 2,4-D	57.7	3.6	100.0	.	.	.	.	94.8	5.2	4.7	95.3
Bromoxynil + MCPA	442.0	27.6	100.0	.	.	.	.	94.7	5.3	0.8	99.2
Bromoxynil + MCPA + Fenoxaprop	8.4	0.5	100.0	.	.	.	.	43.5	56.5	.	100.0
Clopyralid + 2,4-D	3.0	0.2	100.0	.	.	.	.	23.2	76.8	.	100.0
Clopyralid + Fluroxypyr	61.8	3.9	100.0	.	.	.	.	74.8	25.2	15.8	84.2
Dicamba	49.2	3.1	100.0	.	.	.	.	89.8	10.2	.	100.0
Fenoxaprop	701.7	43.9	100.0	.	.	.	.	88.0	12.0	6.4	93.6
Fluroxypyr	118.4	7.4	100.0	.	.	.	.	76.8	23.2	12.6	87.4
Fluroxypyr + MCPA	51.4	3.2	100.0	.	.	.	.	88.7	11.3	11.3	88.7
Glyphosate	22.0	1.4	77.2	22.8	.	.	.	64.4	35.6	.	100.0
Imazamethabenz	18.3	1.1	100.0	.	.	.	.	100.0	.	.	100.0
MCPA	216.4	13.5	100.0	.	.	.	.	86.8	13.2	10.0	90.0
Thifensulfuron	83.2	5.2	100.0	.	.	.	.	90.6	9.4	8.7	91.3
Thifensulfuron + Tribenuron	93.1	5.8	100.0	.	.	.	.	87.8	12.2	11.2	88.8
Tralkoxydim	37.4	2.3	100.0	.	.	.	.	66.0	34.0	5.8	94.2
Tribenuron	86.2	5.4	96.3	3.7	.	.	.	91.5	8.5	.	100.0
Unknown or Other Herbicide	140.5	8.8	100.0	.	.	.	.	72.5	27.5	3.9	96.1
TOTAL	2503.5	156.5	99.7	0.3	.	.	.	87.0	13.0	5.3	94.7
Insecticide											
TOTAL	14.8	0.9	100.0	.	.	.	.	100.0	.	.	100.0
Fungicide											
Propiconazole	20.0	1.3	100.0	.	.	.	.	62.6	37.4	17.3	82.7
Pyrachlostrobin	44.3	2.8	100.0	.	.	.	.	83.7	16.3	16.3	83.7
Tebuconazole	34.5	2.2	100.0	.	.	.	.	69.1	30.9	28.8	71.2
Unknown or Other Fungicide	44.1	2.8	100.0	.	.	.	.	85.4	14.6	14.6	85.4
TOTAL	142.9	8.9	100.0	.	.	.	.	77.8	22.2	18.9	81.1

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 8. OAT: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
2,4-D	86.4	17.6	100.0	.	.	.	.	82.7	17.3	.	100.0
Bromoxynil + MCPA	26.1	5.3	100.0	.	.	.	.	90.0	10.0	.	100.0
Dicamba	16.9	3.4	100.0	.	.	.	.	76.9	23.1	.	100.0
Fluroxypyr	3.5	0.7	100.0	.	.	.	.	79.4	20.6	.	100.0
Glyphosate	9.1	1.9	100.0	.	.	.	.	62.5	37.5	.	100.0
MCPA	48.5	9.9	100.0	.	.	.	.	89.9	10.1	.	100.0
Thifensulfuron	3.8	0.8	100.0	.	.	.	.	90.0	10.0	.	100.0
Thifensulfuron + Tribenuron	4.7	1.0	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Herbicide	25.0	5.1	100.0	.	.	.	.	64.1	35.9	.	100.0
TOTAL	224.0	45.7	100.0	.	.	.	.	82.2	17.8	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 9. CORN: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²		Applications					Operator/ Applicator		Method of application	
	1000	%	1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Acetochlor	56.3	3.1	100.0	.	.	.	.	88.0	12.0	.	100.0
Acetochlor + EPTC	27.8	1.5	100.0	.	.	.	.	86.8	13.2	.	100.0
Atrazine	185.5	10.3	98.6	1.4	.	.	.	89.9	10.1	1.7	98.3
Bromoxynil + Atrazine	16.6	0.9	100.0	.	.	.	.	100.0	.	.	100.0
Clopyralid + Fluroxypyr	4.8	0.3	100.0	.	.	.	.	89.5	10.5	.	100.0
Dicamba	258.1	14.3	79.1	19.4	1.5	.	.	73.5	26.5	1.7	98.3
Dicamba + Diflufenzopyr	183.4	10.2	98.6	1.4	.	.	.	91.6	8.4	3.8	96.2
Dicamba+Diflufenzopyr+Nicosulfuron	116.1	6.4	100.0	.	.	.	.	92.0	8.0	4.1	95.9
Fenoxaprop	28.2	1.6	100.0	.	.	.	.	92.4	7.6	2.0	98.0
Foramsulfuron	135.1	7.5	100.0	.	.	.	.	82.8	17.2	.	100.0
Glufosinate	56.8	3.2	67.7	32.3	.	.	.	88.0	12.0	.	100.0
Glyphosate	1512.7	84.0	41.7	56.7	1.6	.	.	82.3	17.7	1.6	98.4
Imazamox	2.6	0.1	100.0	.	.	.	.	83.4	16.6	.	100.0
Mesotrione	46.8	2.6	100.0	.	.	.	.	100.0	.	.	100.0
Nicosulfuron	62.2	3.5	94.8	5.2	.	.	.	100.0	.	.	100.0
Nicosulfuron + Rimsulfuron	169.5	9.4	100.0	.	.	.	.	86.6	13.4	.	100.0
Rimsulfuron + Thifensulfuron	9.2	0.5	100.0	.	.	.	.	71.8	28.2	.	100.0
Unknown or Other Herbicide	188.9	10.5	86.9	11.0	2.1	.	.	65.4	34.6	0.4	99.6
TOTAL	3060.7	170.0	67.7	31.2	1.0	.	.	83.2	16.8	1.5	98.5
Insecticide											
Bifenthrin	8.4	0.5	100.0	.	.	.	.	100.0	.	.	100.0
Tefluthrin	4.6	0.3	100.0	.	.	.	.	88.2	11.8	.	100.0
Unknown or Other Insecticide	32.1	1.8	100.0	.	.	.	.	82.9	17.1	6.3	93.7
TOTAL	45.0	2.5	100.0	.	.	.	.	86.6	13.4	4.5	95.5
Fungicide											
TOTAL	(D)	(D)	(D)	.	.	.	.	.	(D)	.	(D)

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 10. GENETICALLY MODIFIED CORN: Types and acres grown in North Dakota, 2004.¹

District	Corn acres	Bt-insect resistant		Glyphosate resistant		Liberty resistant		Clearfield resistant ²		Bt-herbicide resistant		Bt-rootworm resistant	
		Acres used	%	Acres used	%	Acres used	%	Acres used	%	Acres used	%	Acres used	%
Northwest	21	(D)	(D)	17.7	84.1	(D)	(D)	.	.	(D)	(D)	.	.
North Central	85	(D)	(D)	60.1	70.7	3.1	3.7	.	.	8.3	9.8	.	.
Northeast	155	3.6	2.3	95.8	61.8	(D)	(D)	.	.	11.3	7.3	(D)	(D)
West Central	55	3.3	5.9	34.9	63.5	.	.	.	.	1.9	3.5	3.5	6.3
Central	180	7.0	3.9	86.8	48.2	.	.	(D)	(D)	33.8	18.8	5.6	3.1
East Central	400	121.3	30.3	89.7	22.4	(D)	(D)	(D)	(D)	72.8	18.2	10.8	2.7
Southwest	54	1.4	2.5	28.8	53.3	.	.	.	.	(D)	(D)	(D)	(D)
South Central	130	(D)	(D)	100.5	77.3	.	.	(D)	(D)	10.9	8.4	3.7	2.9
Southeast	720	194.3	27.0	197.6	27.4	22.8	3.2	(D)	(D)	129.1	17.9	21.7	3.0
Total	1800	334.0	18.6	711.8	39.6	28.0	1.6	2.8	0.2	271.3	15.1	47.7	2.7

¹ . = zero, (D) = withheld to avoid disclosing data for individual farms.

² The Clearfield trait was developed using natural selection and traditional plant breeding, and is not genetically modified. (GMO).

Table 11. SOYBEAN: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²		Applications					Operator/ Applicator		Method of application	
	1000	%	1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Acifluorfen	1.9	0.1	100.0	.	.	.	.	53.7	46.3	.	100.0
Bentazon	49.0	1.3	100.0	.	.	.	.	97.1	2.9	.	100.0
Bentazon + Sethoxydim	162.6	4.3	81.2	18.8	.	.	.	89.4	10.6	.	100.0
Clethodim	35.7	1.0	90.2	9.8	.	.	.	39.2	60.8	9.8	90.2
Cloransulam	57.0	1.5	100.0	.	.	.	.	90.0	10.0	.	100.0
Ethalfuralin	30.5	0.8	100.0	.	.	.	.	73.9	26.1	.	100.0
Fomesafen	47.5	1.3	100.0	.	.	.	.	73.2	26.8	.	100.0
Glyphosate	5127.9	136.7	38.6	60.3	1.1	.	.	85.8	14.2	2.0	98.0
Imazamox	236.6	6.3	89.9	10.1	.	.	.	90.2	9.8	.	100.0
Imazethapyr	44.9	1.2	100.0	.	.	.	.	97.2	2.8	.	100.0
Imazethapyr + Glyphosate	58.7	1.6	100.0	.	.	.	90.8	9.2	2.6	97.4	.
Pendimethalin	85.2	2.3	100.0	.	.	.	.	85.8	14.2	.	100.0
Quizalofop	16.1	0.4	100.0	.	.	.	.	100.0	.	.	100.0
Sethoxydim	5.4	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Sulfentrazone	33.5	0.9	100.0	.	.	.	.	71.8	28.2	.	100.0
Thifensulfuron	19.7	0.5	100.0	.	.	.	.	36.8	63.2	.	100.0
Trifluralin	60.8	1.6	87.3	12.7	.	.	.	95.9	4.1	.	100.0
Unknown or Other Herbicide	112.0	3.0	71.4	28.6	.	.	.	72.6	27.4	2.6	97.4
TOTAL	6185.0	164.9	47.5	51.6	0.9	.	.	85.6	14.4	1.8	98.2
Insecticide											
Cyhalothrin, lambda	6.7	0.2	100.0	.	.	.	.	100.0	.	.	100.0
Esfenvalerate	19.3	0.5	100.0	.	.	.	.	77.3	22.7	15.1	84.9
Unknown or Other Insecticide	14.0	0.4	100.0	.	.	.	.	68.7	31.3	31.3	68.7
TOTAL	40.0	1.1	100.0	.	.	.	.	78.1	21.9	18.3	81.7
Fungicide											
TOTAL	12.5	0.3	100.0	.	.	.	.	27.0	73.0	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 12. GENETICALLY MODIFIED SOYBEAN: Types and acres grown in North Dakota, 2004.¹

District	Soybean	Glyphosate resistant	
	acres	Acres used	
	1000	1000	%
Northwest	38.5	38.5	100.0
North Central	126.0	105.9	84.0
Northeast	660.0	521.1	79.0
West Central	11.5	6.3	54.7
Central	560.0	443.3	79.2
East Central	1270.0	1065.0	83.9
Southwest	0.5	.	.
South Central	28.5	28.5	100.0
Southeast	1055.0	945.6	89.6
Total	3750.0	3154.2	84.1

¹ . = zero.

Table 13. DRY BEAN: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
	1000	%	%	%	%	%	%	%	%	%	%
Herbicide											
Bentazon	96.1	17.2	77.6	22.4	.	.	.	92.2	7.8	1.7	98.3
Bentazon + Sethoxydim	330.0	58.9	68.9	31.1	.	.	.	96.2	3.8	.	100.0
Clethodim	44.4	7.9	100.0	.	.	.	.	94.6	5.4	.	100.0
Dicamba + Imazethapyr	20.3	3.6	44.3	55.7	.	.	.	100.0	.	.	100.0
Dimethenamid	17.1	3.0	100.0	.	.	.	.	18.7	81.3	.	100.0
Ethalfuralin	111.0	19.8	100.0	.	.	.	.	83.2	16.8	3.7	96.3
Fomesafen	15.3	2.7	100.0	.	.	.	.	81.2	18.8	.	100.0
Glyphosate	5.0	0.9	100.0	.	.	.	.	43.4	56.6	.	100.0
Imazamox	192.2	34.3	98.4	1.6	.	.	.	88.9	11.1	.	100.0
Imazethapyr	40.2	7.2	100.0	.	.	.	.	92.6	7.4	.	100.0
Pendimethalin	95.5	17.1	46.3	.	53.7	.	.	96.5	3.5	.	100.0
Sethoxydim	29.3	5.2	26.5	73.5	.	.	.	100.0	.	.	100.0
Trifluralin	54.9	9.8	100.0	.	.	.	.	98.5	1.5	.	100.0
Unknown or Other Herbicide	63.6	11.4	98.2	1.8	.	.	.	75.6	24.4	9.3	90.7
TOTAL	1114.9	199.1	81.0	14.4	4.6	.	.	90.6	9.4	1.0	99.0
Insecticide											
Esfenvalerate	19.3	3.4	100.0	.	.	.	.	100.0	.	.	100.0
TOTAL	19.3	3.4	100.0	.	.	.	.	100.0	.	.	100.0
Fungicide											
Pyrachlostrobin	9.9	1.8	100.0	.	.	.	.	100.0	.	.	100.0
Thiophanate	64.3	11.5	100.0	.	.	.	.	88.3	11.7	.	100.0
Unknown or Other Fungicide	40.8	7.3	89.6	10.4	.	.	.	96.9	3.1	.	100.0
TOTAL	114.9	20.5	96.3	3.7	.	.	.	92.4	7.6	.	100.0
Desiccant											
TOTAL	37.7	6.7	100.0	.	.	.	.	14.1	85.9	72.7	27.3

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 14. DRY PEA: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
Bentazon	28.7	9.1	100.0	.	.	.	.	89.5	10.5	.	100.0
Bentazon + Sethoxydim	51.7	16.4	100.0	.	.	.	.	92.5	7.5	.	100.0
Clethodim	46.8	14.9	100.0	.	.	.	.	97.6	2.4	.	100.0
Ethalfuralin	14.8	4.7	100.0	.	.	.	.	100.0	.	.	100.0
Glyphosate	46.6	14.8	100.0	.	.	.	.	67.6	32.4	.	100.0
Imazamox	31.5	10.0	100.0	.	.	.	.	79.3	20.7	.	100.0
Imazethapyr	12.1	3.8	100.0	.	.	.	.	100.0	.	.	100.0
Quizalofop	88.3	28.0	100.0	.	.	.	.	98.4	1.6	.	100.0
Sethoxydim	15.8	5.0	100.0	.	.	.	.	61.9	38.1	.	100.0
Sulfentrazone	77.8	24.7	100.0	.	.	.	.	77.8	22.2	.	100.0
Unknown or Other Herbicide	50.5	16.0	87.5	12.5	.	.	.	82.9	17.1	1.8	98.2
TOTAL	464.5	147.3	98.6	1.4	.	.	.	86.4	13.6	0.2	99.8
Fungicide											
TOTAL	(D)	(D)	(D)	.	.	.	.	(D)	.	.	(D)
Desiccant											
Paraquat	55.4	17.6	100.0	.	.	.	.	53.4	46.6	.	100.0
Unknown or Other Desiccant	10.2	3.2	100.0	.	.	.	.	27.2	72.8	23.9	76.1
TOTAL	65.5	20.8	100.0	.	.	.	.	49.3	50.7	3.7	96.3

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 15. LENTIL: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
Glyphosate	8.4	8.5	100.0	.	.	.	.	70.4	29.6	.	100.0
Imazethapyr	11.8	12.0	100.0	.	.	.	.	100.0	.	.	100.0
Pendimethalin	19.1	19.3	100.0	.	.	.	.	90.4	9.6	.	100.0
Quizalofop	59.0	59.8	100.0	.	.	.	.	100.0	.	.	100.0
Trifluralin	4.5	4.5	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Herbicide	26.2	26.6	100.0	.	.	.	.	97.9	2.1	.	100.0
TOTAL	128.9	130.8	100.0	.	.	.	.	96.2	3.8	.	100.0
Desiccant											
Paraquat	21.5	21.8	100.0	.	.	.	.	50.9	49.1	.	100.0
Unknown or Other Desiccant	20.0	20.3	100.0	.	.	.	.	97.3	2.7	.	100.0
TOTAL	41.6	42.2	100.0	.	.	.	.	73.3	26.7	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 16. SUNFLOWER: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
Clethodim	322.7	36.7	96.0	4.0	.	.	.	85.2	14.8	1.1	98.9
Ethalfuralin	148.4	16.9	100.0	.	.	.	.	86.5	13.5	4.8	95.2
Glyphosate	149.6	17.0	82.9	17.1	.	.	.	67.6	32.4	.	100.0
Imazamethabenz	107.7	12.2	100.0	.	.	.	.	96.2	3.8	0.4	99.6
Imazamox	27.5	3.1	100.0	.	.	.	.	87.5	12.5	.	100.0
Pendimethalin	20.1	2.3	100.0	.	.	.	.	100.0	.	.	100.0
Quizalofop	53.4	6.1	100.0	.	.	.	.	89.0	11.0	.	100.0
Sethoxydim	44.7	5.1	100.0	.	.	.	.	72.9	27.1	.	100.0
Sulfentrazone	297.3	33.8	95.7	4.3	.	.	.	74.6	25.4	2.5	97.5
Trifluralin	67.9	7.7	100.0	.	.	.	.	88.1	11.9	.	100.0
Unknown or Other Herbicide	75.2	8.5	100.0	.	.	.	.	60.6	39.4	1.3	98.7
TOTAL	1314.6	149.4	96.1	3.9	.	.	.	80.6	19.4	1.5	98.5
Insecticide											
Cyhalothrin, lambda	34.3	3.9	100.0	.	.	.	.	16.1	83.9	57.1	42.9
Esfenvalerate	212.8	24.2	84.3	13.2	2.5	.	.	62.1	37.9	31.4	68.6
Unknown or Other Insecticide	75.3	8.6	93.7	6.3	.	.	.	44.0	56.0	34.9	65.1
TOTAL	322.4	36.6	88.2	10.2	1.6	.	.	53.0	47.0	35.0	65.0
Desiccant											
TOTAL	6.4	0.7	100.0	.	.	.	.	.	100.0	100.0	.

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 17. SAFFLOWER: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide	1000	%	%	%	%	%	%	%	%	%	%
Ethalfuralin	4.0	14.0	100.0	.	.	.	.	100.0	.	.	100.0
Trifluralin	12.5	43.4	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Herbicide	13.5	47.0	80.2	19.8	.	.	.	80.2	19.8	.	100.0
TOTAL	30.0	104.5	91.1	8.9	.	.	.	91.1	8.9	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 18. FLAX: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
	1000	%	%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	23.9	4.9	100.0	.	.	.	.	79.1	20.9	.	100.0
Bromoxynil + 2,4-D	26.4	5.4	100.0	.	.	.	.	95.9	4.1	.	100.0
Bromoxynil + MCPA	227.4	46.4	96.0	4.0	.	.	.	92.7	7.3	.	100.0
Clethodim	200.8	41.0	100.0	.	.	.	.	86.2	13.8	1.5	98.5
Clopyralid + 2,4-D	6.1	1.2	100.0	.	.	.	.	83.3	16.7	20.0	80.0
Clopyralid + MCPA	14.8	3.0	100.0	.	.	.	.	91.5	8.5	.	100.0
Fenoxaprop	4.9	1.0	100.0	.	.	.	.	83.6	16.4	16.4	83.6
Glyphosate	109.5	22.3	95.0	5.0	.	.	.	54.8	45.2	4.9	95.1
MCPA	29.0	5.9	100.0	.	.	.	.	73.8	26.2	.	100.0
Quizalofop	31.7	6.5	71.5	28.5	.	.	.	93.9	6.1	.	100.0
Sethoxydim	69.0	14.1	100.0	.	.	.	.	98.4	1.6	.	100.0
Sulfentrazone	21.7	4.4	100.0	.	.	.	.	85.7	14.3	.	100.0
Unknown or Other Herbicide	85.5	17.4	100.0	.	.	.	.	76.0	24.0	.	100.0
TOTAL	850.7	173.6	97.2	2.8	.	.	.	83.9	16.1	1.2	98.8
Insecticide											
Cypermethrin, zeta	2.3	0.5	76.4	23.6	.	.	.	36.9	63.1	.	100.0
Unknown or Other Insecticide	7.8	1.6	100.0	.	.	.	.	41.1	58.9	8.8	91.2
TOTAL	10.1	2.1	94.6	5.4	.	.	.	40.1	59.9	6.8	93.2

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 19. CANOLA: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Clethodim	15.3	2.0	100.0	.	.	.	.	88.8	11.2	.	100.0
Ethalfuralin	13.1	1.7	100.0	.	.	.	.	100.0	.	.	100.0
Glufosinate	149.8	19.2	100.0	.	.	.	.	94.9	5.1	.	100.0
Glyphosate	742.2	95.1	60.5	39.5	.	.	.	86.3	13.7	2.3	97.7
Imazamox	18.5	2.4	100.0	.	.	.	.	100.0	.	.	100.0
Quizalofop	33.1	4.2	100.0	.	.	.	.	96.0	4.0	.	100.0
Unknown or Other Herbicide	18.5	2.4	100.0	.	.	.	.	100.0	.	.	100.0
TOTAL	990.5	127.0	70.4	29.6	.	.	.	88.7	11.3	1.7	98.3
Insecticide											
Bifenthrin	6.2	0.8	100.0	.	.	.	.	40.8	59.2	59.2	40.8
Unknown or Other Insecticide	37.9	4.9	100.0	.	.	.	.	71.6	28.4	3.0	97.0
TOTAL	44.1	5.7	100.0	.	.	.	.	67.3	32.7	11.0	89.0
Fungicide											
Vinclozolin	18.5	2.4	100.0	.	.	.	.	55.3	44.7	44.7	55.3
Unknown or Other Fungicide	17.0	2.2	100.0	.	.	.	.	90.9	9.1	.	100.0
TOTAL	35.5	4.6	100.0	.	.	.	.	72.4	27.6	23.2	76.8

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 20. GENETICALLY MODIFIED CANOLA: Types and acres grown in North Dakota, 2004.¹

District	Canola acres	Glyphosate resistant		Liberty resistant		Clearfield resistant ²	
		Acres used		Acres used		Acres used	
		1000	%	1000	%	1000	%
Northwest	174.0	145.7	83.8	15.0	8.6	(D)	(D)
North Central	171.0	112.8	66.0	33.4	19.5	(D)	(D)
Northeast	243.0	126.2	52.0	87.6	36.1	(D)	(D)
West Central	85.5	62.9	73.6	(D)	(D)	.	.
Central	41.0	34.7	84.7	(D)	(D)	.	.
East Central	7.0	(D)	(D)	.	.	.	.
Southwest	41.0	31.9	77.7	.	.	.	.
South Central	16.0	16.0	100.0	.	.	.	.
Southeast	1.5	(D)	(D)	.	.	.	.
Total	780.0	538.8	69.1	150.3	19.3	18.5	2.4

¹ . = zero, (D) = withheld to avoid disclosing data for individual farms.

² The Clearfield trait was developed using natural selection and traditional plant breeding, and is not genetically modified. (GMO).

Table 21. MUSTARD: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Clethodim	26.6	60.3	100.0	.	.	.	.	92.0	8.0	.	100.0
Trifluralin	5.8	13.1	100.0	.	.	.	.	62.8	37.2	.	100.0
Unknown or Other Herbicide	2.8	6.3	100.0	100.0	.	.	100.0
TOTAL	35.1	79.7	100.0	87.8	12.2	.	100.0

Insecticide

TOTAL	(D)	(D)	(D)	(D)	.	.	(D)
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¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 22. SUGARBEET: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Clethodim	450.0	175.8	9.6	11.9	47.2	29.4	2.0	96.7	3.3	1.1	98.9
Clopyralid	559.8	218.7	4.5	5.9	45.8	43.9	.	90.9	9.1	7.7	92.3
Desmedipham	63.9	25.0	13.3	27.1	14.9	44.6	.	59.3	40.7	36.2	63.8
Desmedipham + Phenmedipham	392.9	153.5	7.8	17.2	38.4	36.7	.	95.7	4.3	1.8	98.2
Desmedipham + Phenmedipham + Ethofumesate	172.0	67.2	1.7	1.5	59.5	32.2	5.1	94.2	5.8	.	100.0
Ethofumesate	220.0	85.9	21.8	11.1	48.3	18.8	.	90.2	9.8	8.8	91.2
Glyphosate	11.8	4.6	100.0	.	.	.	.	100.0	.	.	100.0
Metolachlor	9.1	3.5	100.0	.	.	.	.	100.0	.	.	100.0
Triflusulfuron	551.6	215.5	4.3	5.9	55.7	34.1	.	93.9	6.1	3.5	96.5
Unknown or Other Herbicide	29.6	11.6	.	.	100.0	.	.	100.0	.	.	100.0
TOTAL	2460.6	961.2	8.2	9.4	47.7	34.0	0.7	92.9	7.1	4.7	95.3

Insecticide

Chlorpyrifos-ethyl	14.0	5.5	100.0	.	.	.	.	90.4	9.6	9.6	90.4
Cypermethrin, zeta	29.7	11.6	62.4	26.3	.	11.3	.	100.0	.	.	100.0
Phorate	19.6	7.6	100.0	.	.	.	.	100.0	.	.	100.0
Terbufos	139.2	54.4	97.2	2.8	.	.	.	94.9	5.1	2.7	97.3
Unknown or Other Insecticide	26.8	10.5	100.0	.	.	.	.	76.2	23.8	23.8	76.2
TOTAL	229.3	89.6	93.4	5.1	.	1.5	.	93.5	6.5	5.0	95.0

Fungicide

Azoxystrobin	36.9	14.4	.	.	100.0	.	.	100.0	.	.	100.0
Pyraclostrobin	160.0	62.5	67.6	32.4	.	.	.	86.4	13.6	10.1	89.9
Tetraconazole	199.7	78.0	82.3	14.3	3.4	.	.	80.7	19.3	12.4	87.6
Trifloxystrobin	15.5	6.0	100.0	.	.	.	.	36.0	64.0	41.3	58.7
Triphenyltin	72.7	28.4	79.3	10.4	10.3	.	.	74.5	25.5	17.8	82.2
Unknown or Other Fungicide	38.2	14.9	100.0	.	.	.	.	94.0	6.0	.	100.0
TOTAL	523.0	204.3	73.4	16.8	9.8	.	.	82.6	17.4	11.5	88.5

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 23. POTATO: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
Rimsulfuron	31.2	29.7	100.0	.	.	.	.	65.4	34.6	.	100.0
Unknown or Other Herbicide	36.8	35.1	100.0	.	.	.	.	38.6	61.4	.	100.0
TOTAL	68.0	64.7	100.0	.	.	.	.	50.9	49.1	.	100.0
Insecticide											
Imidacloprid + Cyfluthrin	30.9	29.4	37.8	62.2	.	.	.	100.0	.	.	100.0
Unknown or Other Insecticide	63.6	60.5	54.7	45.3	.	.	.	79.7	20.3	22.6	77.4
TOTAL	94.4	89.9	49.2	50.8	.	.	.	86.3	13.7	15.2	84.8
Fungicide											
Chlorothalonil	367.3	349.8	1.8	.	14.7	.	83.5	100.0	.	.	100.0
Mancozeb	56.8	54.1	11.4	38.0	.	.	50.6	100.0	.	.	100.0
Unknown or Other Fungicide	89.0	84.7	67.7	8.1	24.2	.	.	54.3	45.7	.	100.0
TOTAL	513.1	488.6	14.3	5.6	14.7	.	65.4	92.1	7.9	.	100.0
Desiccant											
Paraquat	100.4	95.6	11.6	88.4	.	.	.	100.0	.	.	100.0
TOTAL	100.4	95.6	11.6	88.4	.	.	.	100.0	.	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 24. ALFALFA: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	0.8	0.1	77.1	22.9	.	.	.	100.0	.	.	100.0
Bromoxynil	2.8	0.2	100.0	.	.	.	.	35.4	64.6	.	100.0
Clethodim	3.1	0.2	100.0	.	.	.	.	7.7	92.3	.	100.0
Glyphosate	4.2	0.3	100.0	.	.	.	.	82.8	17.2	.	100.0
Imazethapyr	5.0	0.4	100.0	.	.	.	.	79.0	21.0	.	100.0
Picloram	0.2	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Unknown or Other Herbicide	8.3	0.6	100.0	.	.	.	.	81.3	18.7	.	100.0
TOTAL	24.3	1.9	99.2	0.8	.	.	.	67.3	32.7	.	100.0
Insecticide											
TOTAL	4.8	0.4	100.0	.	.	.	.	70.5	29.5	.	100.0

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 25. OTHER HAY: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²		Applications					Operator/ Applicator		Method of application	
	1000	%	1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	11.9	0.8	100.0	.	.	.	.	72.8	27.2	7.1	92.9
Glyphosate	2.3	0.2	100.0	.	.	.	.	6.4	93.6	.	100.0
MCPA	2.7	0.2	100.0	.	.	.	.	64.3	35.7	.	100.0
Picloram	2.4	0.2	88.4	11.6	.	.	.	64.7	35.3	34.7	65.3
Unknown or Other Herbicide	2.6	0.2	100.0	70.1	29.9	12.5	87.5
TOTAL	21.9	1.5	98.7	1.3	.	.	.	63.6	36.4	9.1	90.9

Insecticide

TOTAL	(D)	(D)	(D)	(D)	.	.	(D)
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¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 26. CRP: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²		Applications					Operator/ Applicator		Method of application	
	1000	%	1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	164.4	4.9	97.7	2.2	0.1	.	.	60.7	39.3	16.2	83.8
2,4-D + Dicamba	5.5	0.2	100.0	.	.	.	.	100.0	.	.	100.0
Bromoxynil + MCPA	2.1	0.1	56.0	44.0	.	.	.	78.6	21.4	19.0	81.0
Clopyralid + 2,4-D	33.7	1.0	99.3	0.7	.	.	.	86.3	13.7	4.6	95.4
Clopyralid + MCPA	9.3	0.3	95.2	4.8	.	.	.	71.8	28.2	28.2	71.8
Dicamba	20.5	0.6	95.4	4.6	.	.	.	48.4	51.6	14.7	85.3
Glyphosate	4.2	0.1	98.5	.	1.5	.	.	49.7	50.3	.	100.0
MCPA	12.6	0.4	76.2	23.8	.	.	.	94.6	5.4	5.4	94.6
Metsulfuron	2.7	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Metsulfuron + 2,4-D + Dicamba	6.6	0.2	100.0	.	.	.	.	53.4	46.6	23.9	76.1
Picloram	74.2	2.2	94.0	6.0	.	.	.	60.3	39.7	9.1	90.9
Unknown or Other Herbicide	73.4	2.2	98.1	1.9	.	.	.	48.4	51.6	17.4	82.6
TOTAL	409.1	12.3	96.3	3.7	0.1	.	.	61.8	38.2	13.7	86.3

Insecticide

TOTAL	(D)	(D)	(D)	(D)	.	.	(D)
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¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 27. PASTURE: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
	1000	%	%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	70.8	0.6	97.7	2.3	.	.	.	64.9	35.1	33.6	66.4
Clopyralid + 2,4-D	4.9	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Dicamba	1.4	0.0	100.0	.	.	.	.	86.7	13.3	13.3	86.7
Glyphosate	7.8	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Imazapic	7.0	0.1	100.0	.	.	.	.	91.3	8.7	8.7	91.3
Metsulfuron	4.9	0.0	100.0	.	.	.	.	56.8	43.2	.	100.0
Picloram	56.8	0.5	98.9	0.7	.	.	0.4	78.7	21.3	17.8	82.2
Unknown or Other Herbicide	26.0	0.2	93.0	7.0	.	.	.	86.0	14.0	12.3	87.7
TOTAL	179.6	1.4	97.7	2.1	.	.	0.1	75.8	24.2	21.1	78.9
Insecticide											
TOTAL	7.7	0.1	100.0	.	.	.	.	12.7	87.3	87.3	12.7

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 28. FALLOW: Herbicide, Insecticide, and Fungicide usage and application method, North Dakota, 2004.¹

	Acres treated ²	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
	1000	%	%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	83.3	4.6	75.2	24.8	.	.	.	95.7	4.3	.	100.0
2,4-D + Dicamba	27.7	1.5	66.7	.	33.3	.	.	66.7	33.3	.	100.0
Dicamba	122.5	6.8	56.8	20.3	22.8	.	.	82.2	17.8	.	100.0
Glyphosate	991.0	55.1	54.6	39.2	6.2	.	.	82.1	17.9	1.7	98.3
Glyphosate + Dicamba	26.8	1.5	43.4	56.6	.	.	.	95.9	4.1	.	100.0
Unknown or Other Herbicide	72.6	4.0	91.5	8.5	.	.	.	59.6	40.4	1.5	98.5
TOTAL	1323.8	73.5	58.1	34.4	7.5	.	.	81.7	18.3	1.3	98.7

¹Pesticides applied as a tank-mixture were considered separately unless a commercial premix was used, . = zero, (D) = withheld to avoid disclosing data for individual farms.

²Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.

Table 29. HERBICIDE usage in North Dakota, 2004.

	Acres treated ¹	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Herbicide											
2,4-D	2911.0	7.4	97.7	2.3	0.0	.	.	87.4	12.6	4.0	96.0
2,4-D + Dicamba	94.9	0.2	90.3	.	9.7	.	.	77.2	22.8	.	100.0
Acetochlor	56.3	0.1	100.0	.	.	.	.	88.0	12.0	.	100.0
Acetochlor + EPTC	27.8	0.1	100.0	.	.	.	.	86.8	13.2	.	100.0
Acifluorfen	22.7	0.1	8.3	91.7	.	.	.	4.5	95.5	.	100.0
Alachlor + Glyphosate	23.6	0.1	83.5	.	16.5	.	.	53.0	47.0	23.3	76.7
Atrazine	185.5	0.5	98.6	1.4	.	.	.	89.9	10.1	1.7	98.3
Bentazon	175.0	0.4	87.7	12.3	.	.	.	92.5	7.5	0.9	99.1
Bentazon + Sethoxydim	544.3	1.4	75.5	24.5	.	.	.	93.8	6.2	.	100.0
Bromoxynil	70.7	0.2	100.0	.	.	.	.	86.3	13.7	.	100.0
Bromoxynil + 2,4-D	178.2	0.5	100.0	.	.	.	.	93.5	6.5	3.4	96.6
Bromoxynil + Atrazine	22.3	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Bromoxynil + MCPA	2924.6	7.4	99.1	0.9	.	.	.	88.8	11.2	3.0	97.0
Bromoxynil + MCPA + Fenoxaprop	65.7	0.2	100.0	.	.	.	.	92.8	7.2	.	100.0
Carfentrazone	16.2	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Clethodim	1163.9	3.0	63.6	6.0	18.3	11.4	0.8	89.5	10.5	1.3	98.7
Clodinafop	747.3	1.9	100.0	.	.	.	.	93.2	6.8	5.8	94.2
Clopyralid	569.2	1.4	6.0	5.8	45.0	43.2	.	91.1	8.9	7.6	92.4
Clopyralid + 2,4-D	89.0	0.2	99.7	0.3	.	.	.	66.2	33.8	5.9	94.1
Clopyralid + Fluroxypyr	472.8	1.2	100.0	.	.	.	.	91.8	8.2	4.4	95.6
Clopyralid + MCPA	66.9	0.2	99.3	0.7	.	.	.	81.0	19.0	3.9	96.1
Cloransulam	57.0	0.1	100.0	.	.	.	.	90.0	10.0	.	100.0
Desmedipham	63.9	0.2	13.3	27.1	14.9	44.6	.	59.3	40.7	36.2	63.8
Desmedipham + Phenmedipham	392.9	1.0	7.8	17.2	38.4	36.7	.	95.7	4.3	1.8	98.2
Desmedipham + Phenmedipham + Ethofumesate	172.0	0.4	1.7	1.5	59.5	32.2	5.1	94.2	5.8	.	100.0
Dicamba	1100.8	2.8	90.2	6.9	2.9	.	.	86.8	13.2	2.8	97.2
Dicamba + Diflufenzopyr	185.6	0.5	98.6	1.4	.	.	.	91.3	8.7	4.1	95.9
Dicamba+Diflufenzopyr+Nicosulfuron	116.1	0.3	100.0	.	.	.	.	92.0	8.0	4.1	95.9
Dicamba + Imazethapyr	30.7	0.1	42.8	57.2	.	.	.	86.4	13.6	.	100.0
Diclofop	2.0	0.0	100.0	.	.	.	.	83.1	16.9	.	100.0
Dimethenamid	20.5	0.1	100.0	.	.	.	.	24.2	75.8	4.1	95.9
Ethalfuralin	326.6	0.8	100.0	.	.	.	.	85.7	14.3	3.5	96.5
Ethofumesate	220.0	0.6	21.8	11.1	48.3	18.8	.	90.2	9.8	8.8	91.2
Fenoxaprop	4007.0	10.2	99.9	0.1	.	.	.	86.3	13.7	3.7	96.3
Fenoxaprop + 2,4-D + MCPA	11.5	0.0	100.0	.	.	.	.	89.1	10.9	.	100.0
Fenoxaprop + MCPA	43.9	0.1	100.0	.	.	.	.	84.6	15.4	.	100.0
Fenoxaprop + MCPA + Thifensulfuron + Tribenuron	17.8	0.0	100.0	.	.	.	.	31.9	68.1	4.8	95.2
Flucarbazone	611.3	1.6	100.0	.	.	.	.	88.6	11.4	2.6	97.4
Flumetsulam + Clopyralid	10.7	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Fluroxypyr	825.8	2.1	100.0	.	.	.	.	85.7	14.3	4.1	95.9
Fluroxypyr + 2,4-D	78.0	0.2	100.0	.	.	.	.	73.9	26.1	6.6	93.4
Fluroxypyr + MCPA	262.9	0.7	100.0	.	.	.	.	92.2	7.8	5.6	94.4
Fomesafen	62.7	0.2	100.0	.	.	.	.	75.1	24.9	.	100.0
Foramsulfuron	135.1	0.3	100.0	.	.	.	.	82.8	17.2	.	100.0
Glufosinate	208.3	0.5	91.2	8.8	.	.	.	93.0	7.0	.	100.0
Glyphosate	9569.1	24.3	49.6	48.9	1.5	.	.	83.5	16.5	2.1	97.9
Glyphosate + Dicamba	30.0	0.1	49.5	50.5	.	.	.	85.6	14.4	.	100.0
Imazamethabenz	148.4	0.4	100.0	.	.	.	.	97.3	2.7	0.3	99.7
Imazamox	508.8	1.3	94.7	5.3	.	.	.	89.2	10.8	.	100.0
Imazapic	21.2	0.1	100.0	.	.	.	.	97.1	2.9	2.9	97.1
Imazethapyr	114.0	0.3	100.0	.	.	.	.	95.4	4.6	.	100.0
Imazethapyr + Glyphosate	58.7	0.1	100.0	.	.	.	90.8	9.2	2.6	97.4	
MCPA	1188.4	3.0	99.7	0.3	.	.	.	87.7	12.3	3.9	96.1

Table 29. HERBICIDE usage in North Dakota, 2004 (Continued).

	Acres treated ¹	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Mesosulfuron	13.5	0.0	100.0	.	.	.	.	32.8	67.2	.	100.0
Mesotrione	46.8	0.1	100.0	.	.	.	.	100.0	.	.	100.0
Metolachlor	55.5	0.1	100.0	.	.	.	.	95.5	4.5	.	100.0
Metribuzin	19.5	0.0	100.0	.	.	.	.	44.8	55.2	.	100.0
Metsulfuron	7.6	0.0	100.0	.	.	.	.	71.9	28.1	.	100.0
Metsulfuron + 2,4-D + Dicamba	6.6	0.0	100.0	.	.	.	.	53.4	46.6	23.9	76.1
Nicosulfuron	67.5	0.2	95.2	4.8	.	.	.	100.0	.	.	100.0
Nicosulfuron + Rimsulfuron	173.1	0.4	100.0	.	.	.	.	86.9	13.1	.	100.0
Paraquat	9.3	0.0	100.0	.	.	.	.	20.8	79.2	84.4	15.6
Pendimethalin	250.1	0.6	79.5	.	20.5	.	.	92.4	7.6	.	100.0
Picloram	145.9	0.4	94.1	5.7	.	.	0.2	65.4	34.6	12.2	87.8
Quizalofop	299.4	0.8	97.0	3.0	.	.	.	96.0	4.0	.	100.0
Rimsulfuron	31.2	0.1	100.0	.	.	.	.	65.4	34.6	.	100.0
Rimsulfuron + Thifensulfuron	9.2	0.0	100.0	.	.	.	.	71.8	28.2	.	100.0
Sethoxydim	203.3	0.5	78.3	10.6	11.1	.	.	90.2	9.8	.	100.0
Sulfentrazone	456.7	1.2	97.2	2.8	.	.	.	76.2	23.8	1.6	98.4
Thifensulfuron	558.2	1.4	99.1	0.9	.	.	.	83.6	16.4	5.6	94.4
Thifensulfuron + Tribenuron	774.8	2.0	100.0	.	.	.	.	90.2	9.8	4.5	95.5
Tralkoxydim	49.8	0.1	100.0	.	.	.	.	74.5	25.5	4.4	95.6
Triallate	37.2	0.1	100.0	.	.	.	.	98.1	1.9	.	100.0
Triallate + Trifluralin	70.6	0.2	100.0	.	.	.	.	96.0	4.0	.	100.0
Tribenuron	392.2	1.0	96.6	3.4	.	.	.	88.4	11.6	2.3	97.7
Trifluralin	279.2	0.7	97.2	2.8	.	.	.	94.1	5.9	0.3	99.7
Triflusulfuron	551.6	1.4	4.3	5.9	55.7	34.1	.	93.9	6.1	3.5	96.5
Unknown or Other Herbicide	1229.8	3.1	97.5	1.9	0.6	.	.	62.3	37.7	3.1	96.9
TOTAL	36768.7	93.3	79.0	14.9	3.8	2.3	0.0	86.0	14.0	3.0	97.0

¹Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres, . = zero.

Table 30. INSECTICIDE usage in North Dakota, 2004.

Insecticide	Acres treated ¹	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Bifenthrin	14.6	0.0	100.0	.	.	.	.	74.7	25.3	25.3	74.7
Carbaryl	9.9	0.0	100.0	.	.	.	.	83.9	16.1	16.1	83.9
Chlorpyrifos-ethyl	94.3	0.2	100.0	.	.	.	.	63.4	36.6	31.6	68.4
Cyhalothrin, lambda	79.5	0.2	93.3	6.7	.	.	.	57.8	42.2	27.2	72.8
Cypermethrin, zeta	34.3	0.1	65.8	24.4	.	9.8	.	95.8	4.2	.	100.0
Esfenvalerate	257.1	0.7	87.0	10.9	2.0	.	.	66.9	33.1	27.1	72.9
Imidacloprid	27.1	0.1	47.0	53.0	.	.	.	100.0	.	.	100.0
Imidacloprid + Cyfluthrin	30.9	0.1	37.8	62.2	.	.	.	100.0	.	.	100.0
Parathion, methyl	41.3	0.1	100.0	.	.	.	.	99.1	0.9	.	100.0
Phorate	19.6	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Tefluthrin	4.6	0.0	100.0	.	.	.	.	88.2	11.8	.	100.0
Terbufos	147.0	0.4	97.3	2.7	.	.	.	95.2	4.8	2.6	97.4
Unknown or Other Insecticide	295.4	0.7	93.5	6.5	.	.	.	67.3	32.7	22.0	78.0
TOTAL	1055.5	2.7	89.9	9.3	0.5	0.3	.	74.9	25.1	18.5	81.5

¹Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres, . = zero.

Table 31. FUNGICIDE usage in North Dakota, 2004.

	Acres treated ¹	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Fungicide	1000	%	%	%	%	%	%	%	%	%	%
Azoxystrobin	53.0	0.1	30.4	.	69.6	.	.	100.0	.	.	100.0
Azoxystrobin + Propiconazole	5.0	0.0	100.0	.	.	.	.	100.0	.	.	100.0
Chlorothalonil	394.3	1.0	8.5	.	13.7	.	77.8	99.2	0.8	.	100.0
Mancozeb	62.5	0.2	19.5	34.5	.	.	46.0	100.0	.	.	100.0
Mancozeb + Zoxamide	17.1	0.0	58.0	42.0	.	.	.	66.8	33.2	.	100.0
Propiconazole	401.0	1.0	99.9	0.1	.	.	.	80.0	20.0	4.0	96.0
Pyrachlostrobin	540.8	1.4	89.7	10.3	.	.	.	84.9	15.1	10.1	89.9
Tebuconazole	655.3	1.7	99.6	0.4	.	.	.	65.2	34.8	24.7	75.3
Tetraconazole	221.3	0.6	74.3	12.9	12.9	.	.	82.6	17.4	11.2	88.8
Thiophanate	74.1	0.2	100.0	.	.	.	.	86.8	13.2	.	100.0
Trifloxystrobin	15.5	0.0	100.0	.	.	.	.	36.0	64.0	41.3	58.7
Trifloxystrobin + Propiconazole	113.4	0.3	100.0	.	.	.	.	95.5	4.5	.	100.0
Triphenyltin	84.5	0.2	82.2	8.9	8.9	.	.	64.1	35.9	15.3	84.7
Vinclozolin	18.5	0.0	100.0	.	.	.	.	55.3	44.7	44.7	55.3
Unknown or Other Fungicide	456.2	1.2	99.1	0.9	.	.	.	82.5	17.5	4.5	95.5
TOTAL	3112.5	7.9	81.0	4.1	4.1	.	10.8	81.3	18.7	9.8	90.2

¹Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres, . = zero.

Table 32. DESICCANT usage in North Dakota, 2004.

	Acres treated ¹	Acres treated	Applications					Operator/ Applicator		Method of application	
			1x	2x	3x	4x	5x	Farm	Custom	Aerial	Grnd
			%	%	%	%	%	%	%	%	%
Desiccant	1000	%	%	%	%	%	%	%	%	%	%
Paraquat	208.1	0.5	57.4	42.6	.	.	.	75.4	24.6	7.1	92.9
Unknown or Other Desiccant	57.2	0.1	100.0	.	.	.	.	44.1	55.9	37.5	62.5
TOTAL	265.3	0.7	66.6	33.4	.	.	.	68.7	31.3	13.6	86.4

¹Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres, . = zero.

Table 33. Percent of respondents answering “Yes” to pest management decisions and practices in North Dakota, 2004.

Do you. . .	Northwest	North Central	Northeast	West Central	Central	East Central	Southwest	South Central	Southeast	State Totals
Scout field regularly for pests	73.0	69.7	74.1 0	68.2	65.3	71.2	64.9	65.4	72.0	69.8
Make routine treatments for pests experienced the previous year?	39.5	36.4	43.3	36.4	36.1	43.4	35.1	36.7	37.6	38.4
Make treatments based on identity, density, or population size?	58.1	57.7	62.1	56.8	56.1	64.4	53.2	55.2	60.0	58.5
Use University recommendations in making treatment decisions?	51.1	43.7	50.4	47.1	44.9	56.9	37.9	38.5	47.2	46.8
Use tilling, chopping, mowing, burning of field edges, lanes, ditches, roadways, or fence lines to manage pests in your fields?	44.6	50.1	56.9	40.3	52.0	62.3 2	35.1	37.4	52.8	48.6
Consider pest resistance when selecting varieties?	45.1	39.5	45.9	38.6	36.4	52.7	29.4	35.0	44.3	41.4
Alternate pesticides to delay pest resistance?	47.0	42.3	47.5	38.0	36.4	49.1	35.5	31.5	44.3	41.9
Rotate crops to manage pests?	60.5	47.3	54.4	60.4	46.9	60.9	41.1	48.6	53.0	52.9
Use disease, insect or seed forecasting information available on the internet or via toll-free phone lines?	16.8	16.5	21.9	14.3	11.9	24.9	7.3	12.6	17.6	16.4
Use internet for pest management decisions?	19.7	17.1	23.1	17.2	15.0	27.0	11.3	18.9	16.1	18.6
Employ a crop consultant to help manage pests?	26.8	18.5	27.5	23.4	24.5	32.4	19.0	23.4	34.2	25.9
Increase acres of genetically modified crops for pest management	5.1	8.4	10.4	6.8	9.2	13.2	4.4	7.7	8.2	8.2
Decrease acres of genetically modified crops for pest management	3.0	3.1	7.3	2.6	6.8	7.1	2.4	2.1	4.8	4.5

APPENDIX B.

North Dakota Agricultural Statistics Districts

