## Pesticide Use and Pest Management Practices for Major Crops in North Dakota - 2000

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## STATEWIDE USAGE IN NORTH DAKOTA

The reported pesticide treated acres in Tables 1, 2, and 3 indicate acres that received one or more applications of a pesticide. The treated acres in pesticide usage Tables 4 through 40 include multiple applications to the same acreage as separate values in the total, and pesticides applied as a tank mixture were totaled separately unless a commercial premix was used. Thus, acres treated in pesticide Tables 4 through 40 can exceed 100% of the planted acres. See list of tables.

Herbicides, insecticides, and fungicides were applied one or more times to 18.1, 0.3, and 0.7 million acres, respectively, in 2000 (Table 1), compared to 18.7, 1.3, and 0.6 million acres, respectively in 1996 <sup>5</sup>; 17.6, 0.9, and 0.6 million acres, respectively, in 1992 <sup>4</sup>; 17.4, 1.8, and 0.4 million acres, respectively, in 1989 <sup>3</sup>; and 17.5, 2.5, and 0.5 million acres, respectively, in 1984 <sup>2</sup>. In 2000, herbicides were applied to approximately 47.3% of all crop, pasture, hay, CRP, and summer fallow land, insecticides to 0.8%, and fungicides to 1.9%. In 1996, herbicides were applied to approximately 47.3% of all crop, pasture, hay, CRP, and summer fallow land, insecticides to 3.2%, and fungicides to 1.6%. In 1992, herbicides were applied to approximately 43.1% of all crop, pasture, hay, CRP, and summer fallow land, insecticides to 2.1%, and fungicides to 1.4%.

Of surveyed crops, acres planted to treated seed totaled 7.8 million, 63.2% of dry bean, 73.4% of corn, 78.9% of sunflower, 81.6% of canola, 39.6% of barley, 33.5% of wheat, and 17.9% of soybean acreage planted with treated seed (Table 1). These values compare to seed treated acres of 9.8 million, 84.3%, 79.4%, 76.5%, 76.2%, 50.9%, 45.3%, and 9.5%, respectively, for 1996<sup>5</sup>. Acres planted to on-farm treated seed totaled 3.9 million in 2000 (Table 1), indicating that a slight majority of treated seed planted is treated on the farm. On-farm treatment is most common for seed of wheat and barley. Seed of corn, sunflower, canola, and dry bean is generally purchased already treated (Table 1).

Total acres of surveyed crops treated at least once with herbicides was 18,076,000 in 2000 (Table 1), compared to 18,765,000 in 1996, 17,573,200 in 1992, 17,368,600 in 1989, and 17,539,800 in 1984. If estimated treated acres for potato (NASS 1999) and sugarbeet (NASS 2000) are added to the 2000 figure, total herbicide treated acres would be 18,434,430, a total similar to 1996. When multiple herbicide applications were totaled as multiple acres, herbicide treated acres were 30,112,300 in 2000 (Table 37) compared to 24,819,300 in 1984, 27,674,700 in 1989, 28,777,400 in 1992, and 33,691,700 in 1996. Herbicide treated acres increase to 31,480,330 if estimated acres for potato (NASS 1999) and sugarbeet (NASS 2000) are included.

The percentage of acres treated at least once with herbicides in 2000 was over 90% for wheat, barley, and soybean; acres treated at least once was over 80% for flax, corn, sunflower, lentils, dry bean, and canola (Table 1). Acres treated were less than 2% for alfalfa hay, other hay, and pasture. CRP herbicide treated acres were 7.9%. Nineteen percent of summer fallow acres were treated. Crops with increases in herbicide treated acres were flax (86.2% vs 68.8% in 1996) and canola (88.8% vs 75.8% in 1996).

Insecticides were used on 0.28 million acres of the surveyed crops. If potato (NASS 1999) and sugarbeet (NASS 2000) are added, the estimated acres treated with insecticides increases to 0.6 million. This is significantly less than the 1.26 million acres treated in 1996 <sup>5</sup>. Most of the reduction was due to reduced treating of wheat for managing the wheat midge. Only 0.8% of the surveyed crop acres were treated with an insecticide. Sunflower was the most frequently treated survey crop with 10.2% of the acres receiving at least one insecticide treatment. Potato and sugarbeet were frequently treated with insecticides and NASS summaries indicate 95% and 81% of these acres were treated with insecticides, respectively. Though frequently treated with insecticides, these crops represent only 0.9% of North Dakota agricultural acres.

Total acreage treated with fungicide, exclusive of seed treatment, remained relatively constant with 1.9% of the surveyed acres treated, compared to 1.6% in 1996 and 1.4% in 1992 of total cropland treated at least once. The most frequently treated surveyed crop was wheat with 6.2% of the acres, or 0.6 million acres receiving at least one treatment. Potato and sugarbeet are frequently treated with fungicides. The NASS surveys estimate the crop acres treated were 99% in 1999 and 96% in 2000, respectively.

Сгор		Pesticide Treated Acres <sup>2</sup>												
	Acres Planted <sup>1</sup>	Total Treated Seed		On-farm Treated Seed		Herbicide		Insecticide		Fungicide		Desiccants		
	(1000)	(1000)	(%)	(1000)	(%)	(1000)	(%)	(1000)	(%)	(1000)	(%)	(1000)	(%)	
Wheat	10170.0	3409.7	33.5	3065.7	30.1	9496.6	93.4	93.0	0.9	633.5	6.2			
Barley	1900.0	751.7	39.6	682.2	35.9	1726.6	90.9	1.0	0.1	33.0	1.7			
Oats	600.0	15.9	2.6	9.9	1.7	227.8	38.0							
Flax	490.0	13.1	2.7	5.0	1.0	422.6	86.2							
Corn	1080.0	793.1	73.4	23.7	2.2	933.4	86.4	21.0	1.9	2.3	0.2			
Sunflower	1340.0	1057.6	78.9	56.3	4.2	1105.6	82.5	136.3	10.2			1.1	0.1	
Soybean	1900.0	340.9	17.9	81.3	4.3	1791.3	94.3	2.4	0.1	1.9	0.1	0.6	0.0	
Field Pea	67.1	6.3	9.4			47.1	70.2					1.0	1.5	
Lentils	44.4	4.0	8.9			38.8	87.2					0.9	2.0	
Beans	610.0	385.2	63.2	31.3	5.1	537.5	88.1	1.7	0.3	23.5	3.9	8.3	1.4	
Canola	1270.0	1036.3	81.6	3.2	0.3	1127.3	88.8	29.5	2.3	18.1	1.4			
Alfalfa	1350.0	2.8	0.2			12.2	0.9	2.9	0.2					
Other Hay	1100.0	0.5	0.0			16.9	1.5							
CRP <sup>3</sup>	3174.7	0.8	0.0			251.3	7.9							
Fallow	1165.0					225.8	19.4							
Pasture	11947.2					115.6	1.0							
Total	38208.4	7817.8	20.5	3958.7	10.4	18076.3	47.3	287.7	0.8	712.2	1.9	12.0	0.0	

TABLE 1.	Acreage planted, acreage treated and percentage of planted acreage treated with pesticides in surveyed crops,
	North Dakota, 2000

1

Preliminary estimates by the North Dakota Agricultural Statistics Service. Multiple applications to the same acreage were totaled as one application within a pesticide group. CRP represents acres in the Conservation Reserve Program. 2 3