

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

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## PESTICIDE USE FOR SUNFLOWER

Oilseed and confectionary sunflower are both grown in North Dakota. Sunflower acreage has fluctuated (Table 16) in recent years in response to oilseed markets. Confectionary sunflowers account for 20 to 25% of the acres annually.

Ethalfuralin, at 37.5% of the acres, was the most frequently applied herbicide to sunflower (Table 17). The second most often used herbicide was trifluralin at 23.9% of the acres. These two products have been the most frequently used herbicides for grass and broadleaf control over the past 10 years (Figure 6). Sethoxydim was used for post emergent grass control on 14.2% of the sunflower acres and its use has increased during the past 10 years. The newest herbicide mentioned was sulfentrazone at

8.5%. This product was registered as a Section 18 Emergency Exemption for managing difficult to control broadleaf weeds. Over 85% of the herbicides were applied by the farm operator and over 95% by ground equipment.

Six different insecticides were applied to 10.6% of the sunflower acres. Multiple applications occurred on 17.8% of the treated acres. Esfenvalerate and lambda cyhalothrin were the most common insecticides at 8.3% and 1.6% of the treated acres, respectively. Other insecticides mentioned were carbofuran, cyfluthrin, and ethyl parathion. Many of the acres were treated for seed feeding insects that can severely impact confectionary sunflower processing quality.

TABLE 16 Production summary for ALL SUNFLOWER, North Dakota, 1996-2000 (NDASS, 2001)

Year	Acres		Yield		Marketing Year Avg. Price	Value of Production	Value per harvested Acre	U.S. Production	
	Planted	Harvested	Per Acre	Production				(%)	(Rank)
	(000 Acres)		(Lbs.)	(000 Lbs.)	(\$/Cwt.)	(000 Dols.)	(Dols.)		
1996	1,180	1,165	1,488	1,733,750	12.10	206,524	177.27	48	1
1997	1,470	1,410	1,321	1,862,900	11.80	219,979	156.01	50	1
1998	1,990	1,960	1,517	2,972,800	10.90	307,016	156.64	57	1
1999	1,700	1,645	1,134	1,866,250	8.18	154,576	93.97	43	1
2000	1,340	1,280	1,375	1,759,800	7.46	125,169	98.95	49	1

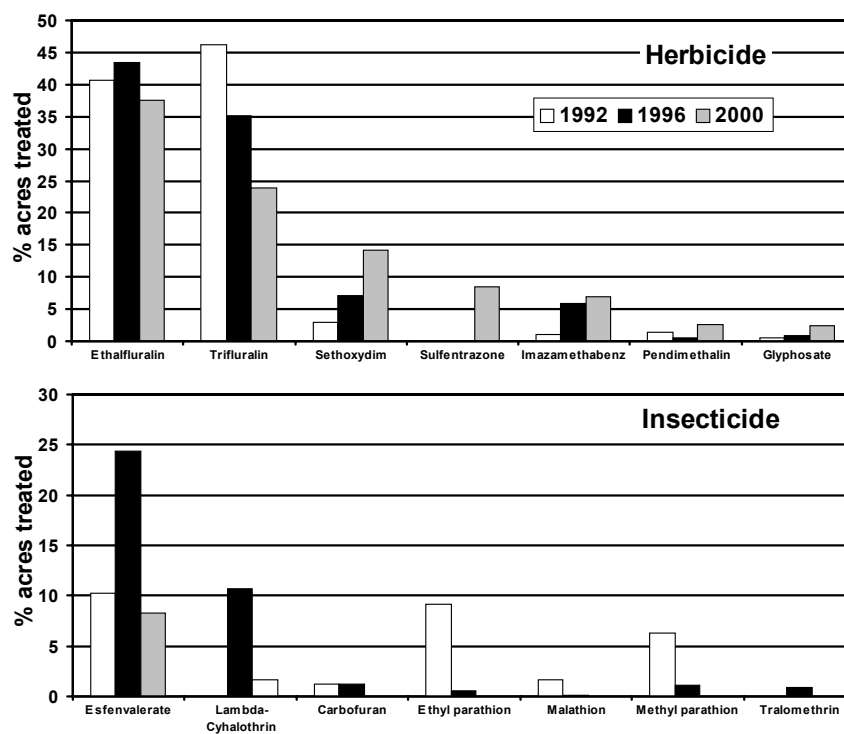
TABLE 17 . SUNFLOWER: Herbicide, Insecticide, Fungicide, and Desiccant usage and application method. North Dakota, 2000

Herbicide <sup>1</sup>	Applications					Applicator		Method of Application	
	Acres Treated <sup>2</sup>	Acres Treated	1 X	2 X	3 X	Farm		Aerial	Ground
						Operator	Custom		
	(1000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
2,4-D	NS	NS	NS	NS	NS	NS	NS	NS	NS
Atrazine	NS	NS	NS	NS	NS	NS	NS	NS	NS
Clethodim	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dicamba	NS	NS	NS	NS	NS	NS	NS	NS	NS
EPTC	3.3	0.2	100.0	---	---	100.0	---	---	100.0

Table 17. Continued

	Acres Treated <sup>2</sup>	Acres Treated	Applications			Applicator		Method of Application	
			1 X	2 X	3 X	Farm Operator	Custom	Aerial	Ground
	(1000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Ethalfluralin	501.9	37.5	100.0	---	---	84.4	15.6	0.6	99.4
Fenoxaprop+MCPA+ Thifensulfuron+Tribenuron	NS	NS	NS	NS	NS	NS	NS	NS	NS
Glyphosate	31.7	2.4	100.0	---	---	96.4	3.6	1.5	98.5
Imazamethabenz	91.8	6.9	100.0	---	---	83.7	16.3	6.5	93.5
Nicosulfuron	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pendimethalin	35.1	2.6	100.0	---	---	91.7	8.3	---	100.0
Pyrazon	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyridate	NS	NS	NS	NS	NS	NS	NS	NS	NS
Quizalofop-P	45.2	3.4	100.0	---	---	94.1	5.9	4.8	95.2
Sethoxydim	189.7	14.2	100.0	---	---	85.1	14.9	4.6	95.4
Sulfentrazone	114.5	8.5	97.4	2.6	---	93.1	6.9	7.3	92.7
Tralkoxydim	NS	NS	NS	NS	NS	NS	NS	NS	NS
Triallate	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trifluralin	320.0	23.9	100.0	---	---	82.4	17.6	8.1	91.9
All Herbicides	1352.8	101.0	99.8	0.2	---	85.1	14.9	4.2	95.8
<b>Insecticide</b>									
Carbofuran	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chlorpyrifos	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyfluthrin	NS	NS	NS	NS	NS	NS	NS	NS	NS
Esfenvalerate	111.4	8.3	100.0	---	---	61.0	39.0	41.1	58.9
Ethyl Parathion	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lambda-cyhalothrin	21.0	1.6	82.2	17.8	---	43.3	56.7	56.7	43.3
All Insecticides	142.2	10.6	97.4	2.6	---	59.0	41.0	43.0	57.0
<b>Desiccant</b>									
Paraquat	NS	NS	NS	NS	NS	NS	NS	NS	NS
All Desiccants	NS	NS	NS	NS	NS	NS	NS	NS	NS

<sup>1</sup> Herbicides applied as a tank mixture were considered separately unless a commercial premix was used.<sup>2</sup> Multiple applications to the same acre were reported as separate values. Acres treated can exceed 100% of the planted acres.  
NS - not sufficient to estimate district or state projections.



**Figure 6.** Percent of North Dakota sunflower acres treated with the top five active ingredients from the herbicide and insecticide pesticide groups reported in the 1992, 1996, and 2000 statewide pesticide use surveys.