

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

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P. Glogoza, M. McMullen, R. Zollinger, A. Thostenson,
T. DeJong, W. Meyer, N. Schauer, J. Olson

North Dakota State University
NDSU Extension Service

PESTICIDE USE FOR FLAX

Two types of flax are grown, seed flax, for the oil in its seed, and fiber flax, for the fiber in its stem. Today producers in the Upper Midwest and the Prairie Provinces of Canada primarily grow seed flax. Flax seed is crushed to produce linseed oil and linseed meal. Human consumption of flax seed is increasing rapidly for its high dietary fiber, its omega 3 oils, and the anticarcinogenic lignans. Flax seed oil is used as a vegetable oil by some consumers.

Eighty-six percent of the North Dakota flax acres were treated with at least one type of herbicide (Table 1). Due to multiple herbicide applications to the same acres, the equivalent of 138% of the flax acres were treated with herbicides (Table 13). The most frequently used herbicide was MCPA, applied to 53.7% of the flax acres, alone or as a premix; second was sethoxydim, applied to 46.8% of the

flax acreage (Table 13). These two herbicide actives have increased in usage over the past 10 years while trifluralin and picloram have declined (Figure 4). Herbicide applications were made about 85% of the time by the farm operator with ground equipment.

The survey reported no insecticide or fungicide usage on flax. However, localized outbreaks of grasshopper have plagued flax growers, particularly in the southwest part of the state. Outbreaks have often been dealt with through the issuance of Section 18 Crisis Exemptions due to lack of effective, registered insecticides.

No insecticide or fungicide usage on oat was reported by the survey respondents.

TABLE 12. Production summary for FLAX, 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)		(Bu.)	(000 Bu.)	(\$/Bu.)	(000 Dols.)	(Dols.)		
1996	80	77	18.0	1,386	6.38	8,843	114.84	87	1
1997	125	121	16.5	1,997	5.81	11,603	95.89	81	1
1998	280	277	21.0	5,817	5.05	29,376	106.05	87	1
1999	330	327	21.0	6,867	3.79	26,026	79.59	87	1
2000	490	475	21.0	9,975	3.31	33,017	69.51	93	1

TABLE 13 . FLAX: Herbicide, Insecticide, and Fungicide usage and application method. North Dakota, 2000

	Acres Treated ²	Acres Treated	Applications			Applicator		Method of Application	
			1 X	2 X	3 X	Farm Operator	Custom	Aerial	Ground
	(1000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Herbicide¹									
2,4-D	34.6	7.1	100.0	---	---	76.6	23.4	7.2	92.8
Bentazon	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromoxynil	6.7	1.4	100.0	---	---	100.0	---	---	100.0
Bromoxynil + MCPA	152.4	31.1	97.1	2.9	---	91.5	8.5	4.8	95.2
Clopyralid + 2,4-D	14.3	2.9	100.0	---	---	83.1	16.9	---	100.0

Table 13. Continued

	Acres Treated ²	Acres Treated	Applications			Applicator		Method of Application	
			1 X	2 X	3 X	Farm Operator	Custom	Aerial	Ground
	(1000)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Clopyralid + MCPA	21.0	4.3	100.0	---	---	97.9	2.1	---	100.0
Dicamba	5.1	1.0	100.0	---	---	63.5	36.5	---	100.0
Ethalfuralin	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fenoxaprop-p + Safener	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluroxypyr	NS	NS	NS	NS	NS	NS	NS	NS	NS
Glyphosate	66.3	13.5	100.0	---	---	50.2	49.8	16.7	83.3
Imazamethabenz	NS	NS	NS	NS	NS	NS	NS	NS	NS
Imazethapyr	NS	NS	NS	NS	NS	NS	NS	NS	NS
MCPA	89.5	18.3	100.0	---	---	90.5	9.5	4.9	95.1
Picloram	NS	NS	NS	NS	NS	NS	NS	NS	NS
Quizalofop-P	23.2	4.7	100.0	---	---	94.0	6.0	---	100.0
Sethoxydim	229.1	46.8	95.2	4.8	---	90.6	9.4	4.4	95.6
Thifensulfuron	NS	NS	NS	NS	NS	NS	NS	NS	NS
Trifluralin	20.1	4.1	100.0	---	---	59.6	40.4	---	100.0
All Herbicides	676.9	138.1	97.7	2.3	---	84.8	15.2	5.4	94.6

¹ Herbicides applied as a tank mixture were considered separately unless a commercial premix was used.

² 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.

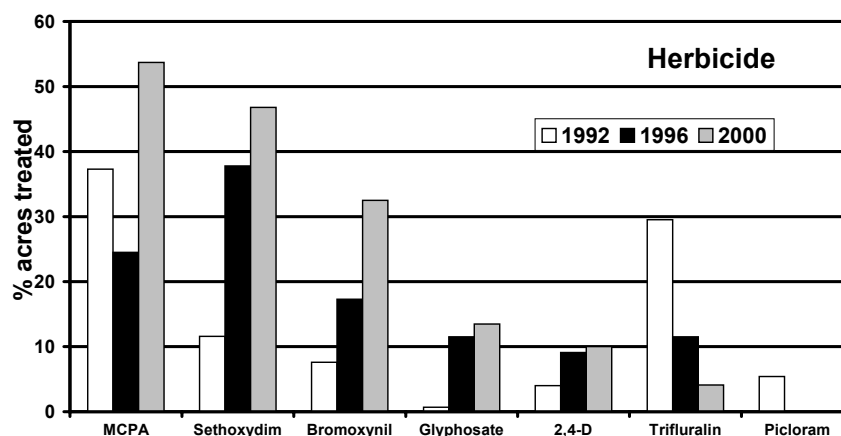


Figure 4. Percent of North Dakota flax acres treated with the top five active ingredients from the herbicide pesticide group reported in the 1992, 1996, and 2000 statewide pesticide use surveys.