

Survey of Fungicide Use in Sugarbeet in Eastern North Dakota and Minnesota
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SURVEY OF FUNGICIDE USE IN SUGARBEET IN EASTERN NORTH DAKOTA AND MINNESOTA - 2002

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Other portions of the survey are published in the
Weed Control and Entomology sections.

Sugarbeet growers were asked to report the fungicide used and the number of applications to sugarbeet acreage as part of the annual survey of sugarbeet growers. Multiple applications of fungicides to the same acreage were counted as multiple acres treated; thus, acres treated may exceed 100% of acres planted. All fungicides in [Table 1](#) would be used primarily for control of *Cercospora*. Tachigaren in [Table 5](#) would be used for control of *Aphanomyces*.

Fungicide use in 2002, averaged over all counties, was 262% as compared to 248% in 2001, 304% in 2000, 350% in 1999 and 374% in 1998 ([Table 1](#)). Acres not treated with fungicide was less than 1% in 2001 and 2002, and was 1% in 1999 and 2000. Fungicide usage was highest in Chippewa County at 304%. Fungicide use was 852% in 1998, 599% in 1999, 409% in 2000 and 299% in 2001 in Chippewa County. Use was 702% in 1998, 625% in 1999, 430% in 2000, 308% in 2001 and 297% in 2002 in Renville County. Eminent was the most common fungicide and was used on 153% of the acres. Super Tin was used on 86% of the acres alone and on 9% of the acres in combination.

Eminent had a Section 18 label in 1999, 2000, 2001 and 2002 and was used on 165% of the acreage in 1999, 170% in 2000, 144% in 2001 and 153% in 2002. The Eminent use apparently had a large impact on *Cercospora* control. The percentage of respondents who named *Cercospora* as their worst production problem dropped from 36% in 1998 to 6% in 1999, 3% in 2000, 1% in 2001 and <1% in 2002.

Eminent is an excellent fungicide but it should be rotated with other fungicides to reduce the risk of *Cercospora* developing resistance. Fourteen of the 390 survey respondents used only Eminent for *Cercospora* but only one of these growers applied Eminent more than once. Eminent should never be used as the only fungicide for *Cercospora* unless the field is only treated once.

The number of fungicide applications varied from zero to five times per acre ([Table 2](#)). Eighty-two percent of the respondents applied fungicides two or three times per acre. The average number of applications was 2.8 in 2002, 2.5 in 2001 and 3.1 in 2000.

Averaged over fungicides and counties, 67% of the fungicides were applied with a ground sprayer and 33% with aerial application ([Table 3](#)). The usage of ground sprayers varied from 30% in Kittson County to 94% in Renville County. The overall usage of ground sprayers was 47% in 1998, 58% in 1999, 63% in 2000, 60% in 2001 and 67% in 2002.

The date of the first *Cercospora* spraying was spread from June 20 to after July 20 ([Table 4](#)). The southern areas generally were sprayed earlier than more northern areas in 2002. In general, spraying started earlier in 2002 than in 2001 with 29% of the respondents starting treatments prior to July 10 in 2002 and 22% starting prior to July 10 in 2001.

Tachigaren was used on 74% and 82% of the acreage in Chippewa and Renville Counties respectively ([Table 5](#)). Usage was much less in other counties and overall, 23% of the acreage was treated with Tachigaren. Overall Tachigaren usage increased from 16% in 2001 to 23% in 2002.

Cercospora leaf spot control was evaluated as excellent or good by 90% of the survey respondents averaged over all fungicides (Table 6). Comparisons among all fungicides are of questionable value since the number of responses varies so greatly from one fungicide to another. However, a large number of responses were received for Eminent and Super Tin/Agri Tin. Excellent or good valuations were received from 94% of the respondents for Eminent and 86% for Super Tin/Agri Tin.

The Cercospora Infection Value was used to determine the date of fungicide application by 55% of the respondents to the survey (Table 7). Usage was highest in Kittson County and lowest in Norman County.

Table 1. Fungicide use by survey respondents in 2002.

County	Fungicide treated acres											Total acres treated
	Acres not treated	Super/Agri tin	Tin+ Topsin	Topsin/Benlate	Coppers	Mancozebs	Topsin+ Mancozeb	Tin+ Mancozeb	Eminent	GEM	Other	
	-----% of acres planted-----											
Cass	0	89	4	0	0	0	0	0	158	0	0	251
Chippewa ¹	0	118	5	0	0	0	0	0	178	0	3	304
Clay ²	3	85	2	0	0	0	0	2	136	3	0	231
Grand Forks	0	78	5	0	0	12	1	0	146	9	0	251
Kittson	0	127	0	0	0	0	0	0	137	10	0	274
Marshall	0	83	4	0	2	0	6	0	104	0	0	199
Norman ³	3	45	4	0	0	26	4	0	120	2	0	204
Pembina	0	92	4	0	7	0	0	0	125	21	0	249
Polk	0	51	26	3	0	1	12	20	137	3	3	256
Renville ⁴	0	109	0	0	0	0	0	0	185	3	0	297
Richland	0	84	14	0	0	0	0	0	182	11	0	291
Traill	0	100	0	0	0	0	0	2	161	0	0	263
Traverse ⁵	0	87	0	0	0	0	0	0	180	18	0	285
Walsh	4	99	1	0	0	0	0	0	145	32	0	281
Wilkin ⁶	0	60	<1	1	0	0	0	0	183	42	0	287
Other ⁷	0	106	0	0	0	0	0	0	136	23	0	265
Total	<1	86	6	<1	<1	2	2	3	153	9	<1	262

Table 2. Number of fungicide applications by survey respondents in 2002.

County	Number of applications					
	0	1	2	3	4	5
	-----% of respondents-----					
Cass	0	6	22	61	11	0
Chippewa ¹	0	0	15	64	21	0
Clay ²	7	11	29	50	4	0
Grand Forks	0	13	30	52	4	0
Kittson	0	0	53	26	16	5
Marshall	0	5	64	32	0	0
Norman ³	6	6	47	41	0	0
Pembina	0	0	35	59	6	0
Polk	0	5	34	53	8	0
Renville ⁴	0	2	9	75	13	2
Richland	0	4	18	61	14	4
Traill	0	0	31	62	8	0
Traverse ⁵	0	13	19	50	19	0
Walsh	6	0	18	53	18	6
Wilkin ⁶	0	0	12	68	20	0
Other ⁷	0	0	33	50	17	0
Total	1	4	26	56	12	1

¹Includes Swift and Kandiyohi Counties.²Includes Becker County.³Includes Mahnomon County.⁴Includes Redwood, Faribault, Yellow Medicine, Lac Qui Parle, and Sibley Counties.⁵Includes Grant, Stevens, and Big Stone Counties.⁶Includes Ottertail County.⁷Includes Stearns and non-specified Counties.**Table 3. Ground and aerial application of fungicides, 2002.**

County	Ground	Aerial
	-----% of treated acres-----	
Cass	72	28
Chippewa ¹	89	11
Clay ²	76	24
Grand Forks	60	40
Kittson	30	70
Marshall	59	41
Norman ³	41	59
Pembina	46	54
Polk	47	53
Renville ⁴	94	6
Richland	88	12
Traill	33	66
Traverse ⁵	48	52
Walsh	38	62
Wilkin ⁶	72	28
Other ⁷	90	10

Table 4. Date of first fungicide application, 2002.

County	June 20-30	July 1-10	July 11-20	After July 20
-----% of respondents-----				
Cass	0	31	50	19
Chippewa ¹	2	51	37	9
Clay ²	0	9	45	45
Grand Forks	0	14	43	43
Kittson	7	0	21	71
Marshall	0	11	11	79
Norman ³	0	8	42	50
Pembina	0	0	33	67
Polk	3	16	22	59
Renville ⁴	2	37	61	0
Richland	0	46	42	12
Traill	0	10	50	40
Traverse ⁵	0	46	23	31
Walsh	0	21	36	43
Wilkin ⁶	5	29	62	5
Other ⁷	20	20	60	0
Total	2	27	41	31

¹Includes Swift and Kandiyohi Counties.²Includes Becker County.³Includes Mahnomon County.⁴Includes Redwood, Faribault, Yellow Medicine, Lac Qui Parle and Sibley Counties.⁵Includes Grant, Stevens and Big Stone Counties.⁶Includes Ottertail County.⁷Includes Stearns and non-specified Counties.**Table 5. Use of tachigaren-treated sugarbeet seed, 2002.**

County	Respondents	Respondent's Acres	Respondents Planting Tachigaren - treated seed	Acres planted to tachigaren - treated seed
-----%-----				
Cass	18	8,670	28	14
Chippewa ¹	47	18,228	87	74
Clay ²	28	15,996	14	14
Grand Forks	23	12,952	9	12
Kittson	19	8,928	11	3
Marshall	22	15,818	0	0
Norman ³	17	8,050	24	7
Pembina	17	7,290	12	1
Polk	38	22,071	8	3
Renville ⁴	56	20,273	91	82
Richland	28	14,669	32	20
Traill	13	6,653	31	13
Traverse ⁵	16	5,979	13	12
Walsh	17	6,412	12	5
Wilkin ⁶	25	11,834	28	15
Other ⁷	6	1,833	17	6
Total	390	185,656	36	23

¹Includes Swift and Kandiyohi Counties.²Includes Becker County.³Includes Mahnomon County.

⁴Includes Redwood, Faribault, Yellow Medicine, Lac Qui Parle and Sibley Counties.

⁵Includes Grant, Stevens and Big Stone Counties.

⁶Includes Ottertail County.

⁷Includes Stearns and non-specified Counties.

Table 6. Fungicide control of cercospora leafspot in 2002.

Fungicide	Number of Responses	Cercospora leafspot control rating			
		Excellent	Good	Fair	Poor
-----% of respondents-----					
Super Tin/Agri Tin	271	48	38	14	0
Coppers	2	100	0	0	0
Mancozebs	2	50	50	0	0
Topsin/Benlate	1	100	0	0	0
Tin + Topsin	15	40	47	13	0
Tin + Mancozeb	6	33	33	33	0
Topsin + Mancozeb	6	17	83	0	0
Eminent	325	73	21	6	0
GEM	35	49	31	20	0
Other	2	100	0	0	0
Total	665	60	30	10	0

Table 7. Respondents use of Cercospora infection values to determine date of fungicide application for Cercospora leafspot, 2002.

County	Cercospora infection values to determine date of fungicide application	
	Did use CIV	Did not use CIV
-----% of respondents-----		
Cass	60	40
Chippewa ¹	59	41
Clay ²	54	46
Grand Forks	38	62
Kittson	82	18
Marshall	39	61
Norman ³	14	86
Pembina	75	25
Polk	58	42
Renville ⁴	60	40
Richland	69	31
Trails	44	56
Traverse ⁵	33	67
Walsh	50	50
Wilkin ⁶	65	35
Other ⁷	40	60
Total	55	45

¹Includes Swift and Kandiyohi Counties.

²Includes Becker County.

³Includes Mahnomen County.

⁴Includes Redwood, Faribault, Yellow Medicine, Lac Qui Parle and Sibley Counties.

⁵Includes Grant, Stevens and Big Stone Counties.

⁶Includes Ottertail County.

⁷Includes Stearns and non-specified Counties.