

SURVEY OF FUNGICIDE USE IN SUGARBEET IN WESTERN NORTH DAKOTA AND EASTERN MONTANA IN 2011

Aaron L. Carlson¹, Mohamed F.R. Khan¹, Jeff M. Stachler¹, and Mark A. Boetel²

¹Sugarbeet Research Technician, Extension Sugarbeet Specialist, and Extension Sugarbeet Specialist
North Dakota State University - University of Minnesota, Fargo, ND
and

²Associate Professor, Dept. of Entomology, North Dakota State University

Other portions of this survey can be found in the Weed Control and Entomology sections.

Sugarbeet growers were asked to report fungicide usage and to indicate the number of applications per acre as a part of the biennial survey of sugarbeet growers in western North Dakota and eastern Montana. Foliar fungicide was applied to 115% of sugarbeet acreage in 2011 (Table 1). This compares to 60% in 2009, 78% in 2007, 1% in 2005, 180% in 2003, and 191% in 2001. Headline and Eminent were the two fungicides applied by respondents in 2011.

Fungicides were applied at a rate of 1.5 applications per respondent as calculated from Table 2. A summary of fungicide applications from 1991 to 2007 is shown in Table 2. Of the sugarbeet acres treated with fungicide, 86% received aerial fungicide applications and 14% received fungicide applications by a ground sprayer (data not shown).

Cercospora leaf spot control was rated excellent or good by 88% of respondents in 2011 (Table 3). This compares to 86% in 2009, 79% in 2007, 100% in 2005 and 94% in 2003. Most growers started applying fungicides to control Cercospora in mid to late-July and finished in mid to late-August (Table 4).

The root diseases Fusarium and Rhizoctonia root and crown rot were each reported as damaging over 20% of respondents acres in 2011 (Table 5). Three respondents made in-furrow applications of either Headline (2) or Quadris (1) to control Rhizoctonia root rot. The two growers applying Headline in-furrow also reported making a foliar application of Quadris to control Rhizoctonia (data not shown).

Table 1. A summary of the fungicide use by survey respondents to control cercospora from 1991 to 2011.

Year	Acres Reported	Fungicide applied										Total
		Super/Agri Tin	Eminent	Headline	Gem	Tin + Topsin	Mancozebs	Topsin/ Benlate	Mancozebs + Topsin	Coppers	Other ¹	
-----% of acres reported-----												
2011	6,134	-	74	41	-	-	-	-	-	-	-	115
2009	3,441	-	-	60	-	-	-	-	-	-	-	60
2007	8,346	-	35	36	-	-	-	-	-	-	7	78
2005	7,733	-	-	1	-	-	-	-	-	-	-	1
2003	11,732	16	61	78	18	-	7	1	-	-	-	180
2001	22,125	64	50	-	-	2	<1	75	-	-	-	191
1999	12,296	113	7	-	-	3	2	93	10	-	-	228
1997	11,059	77	-	-	-	-	-	19	-	6	-	101
1995	12,338	260	-	-	-	-	51	18	-	3	7	336
1993	9,242	38	-	-	-	-	-	-	-	3	2	43
1992	12,791	23	-	-	-	-	-	-	-	-	2	25
1991	15,784	41	-	-	-	-	-	-	-	7	9	57

¹Other includes 2007: Quadris; 1995: Du-Ter, AgscoTN, and sulfur; 1992: unknown; 1991: Du-Ter and AgscoTN

Table 2. The number of fungicide applications to control cercospora per respondent from 1991 to 2011.

Year	Number of respondents	Fungicide applications					
		0	1	2	3	4	5
-----% of respondents-----							
2011	20	15	25	60	-	-	-
2009	15	53	47	-	-	-	-
2007	21	33	53	14	-	-	-
2005	24	96	4	-	-	-	-
2003	38	16	26	50	8	-	-
2001	65	2	14	57	28	-	-
1999	45	4	2	55	36	-	2
1997	43	28	42	28	2	-	-
1995	63	5	38	54	3	-	-
1993	66	81	14	5	-	-	-
1992	70	87	7	6	-	-	-
1991	84	50	27	17	6	-	-

Table 3. Cercospora control rating by fungicide in 2011.

Fungicide	Responses	Cercospora control rating			
		Excellent	Good	Fair	Poor
-----% of responses-----					
Eminent	13	15	69	15	0
Headline	12	33	58	8	0
Total	25	24	64	12	0

Table 4. Timing of foliar fungicide applications in sugarbeet from 2009 to 2011.

Year	Resp	First Application						Last Application						
		June 20-30	July 1-10	July 11-20	July 21-31	Aug 1-10	After Aug 10	Before Aug 1	Aug 1-10	Aug 11-20	Aug 21-31	Sept 1-10	After Sept 10	
		No.	-----% of respondents-----					No.	-----% of respondents-----					
2011	17	5	5	12	65	5	5	16	19	6	19	31	25	-
2009	6	-	-	-	-	33	67	6	-	-	17	50	33	-

Table 5. Sugarbeet root diseases as a percent of planted acres from 2003 to 2011.

Year	Respondent acres planted	Seeded to Rhizomania resistant variety	Affected by Rhizomania	Affected by Aphanomyces	Affected by Rhizoctonia	Affected by Fusarium
2011	6,134	NA ¹	0	0.3	21.0	20.8
2009	3,441	NA	NA	3.5	6.3	4.4
2007	8,346	14.9	0.2	3.4	6.9	3.5
2005	7,733	4.6	1.9	NA	NA	NA
2003	11,732	NA	2.8	NA	NA	NA

¹NA = Question not asked on that year's survey