SURVEY OF FUNGICIDE USE IN SUGARBEET IN WESTERN NORTH DAKOTA AND EASTERN MONTANA IN 2015

Peter C. Hakk[1], Andrew B. Lueck[1], Thomas J. Peters[2], Mohamed F.R. Khan[2], and Mark A. Boetel[3]

[1]Sugarbeet Research Specialists and [2]Extension Sugarbeet Specialists
North Dakota State University - University of Minnesota, Fargo, ND
and
[3]Professor, Dept. of Entomology, North Dakota State University

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

Sugarbeet growers were asked to report fungicide useage 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 128% of sugarbeet acreage in 2015 (Table 1). Proline, Headline and Inspire XT were the top three fungicides applied by respondents in 2015. One percent of reported acres were not treated with any fungicide for Cercospora leaf spot control.

Table 1. A summary of fungicide use by survey respondents to control cercospora from 1991 to 2015.

			Fungicide applied											
Year	Acres Reported	Super/ Agri Tin	Eminent	Headline	Gem	Tin + Topsin	Mancozebs	Topsin/ Benlate	Priaxor	Inspire XT	Proline	Coppers	Other[1]	Total
			% of acres planted											
2015	5,420	12	1	29	9	-	-	-	14	16	30	-	18	128
2014	7,556	-	42	21	9	-	-	-	5	5	24	-	5	111
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

[1] Other includes 2015: Quadris and unknown; 2014: unknown; 2007: Quadris; 1999: Mancozeb+Topsin; 1995; Du-Ter, AgscoTN and sulfur; 1992: unknown; 1991: Du-Ter and AgscoTN

Cercospora leaf spot control was rated excellent or good by 60% of respondents in 2015 (Table 2). This compares to 82% in 2014, 88% in 2011, 86% in 2009, 79% in 2007 and 100% in 2005. Most growers started applying fungicides to control Cercospora in late July to early August and finished in early August (Table 3).

Table 2. Cercospora control rating by fungicide in 2015.

		Cercospora control ratings				
Fungicide	Responses	Excellent	Good	Fair	Poor	No Response
		% of responses				
Super/Agri Tin	1	100	-	-	-	-
Eminent	1	-	100	-	-	-
Headline	6	17	50	17	-	17
Gem	1	100	-	-	-	-
Priaxor	4	-	-	50	-	50
Inspire XT	2	50	50	-	-	-
Proline	8	13	63	13	-	13
Other[1]	2	-	-	-	-	100
Total	25	20	40	16	-	24

[1] Other includes Quadris and unknown

Table 3. Timing of foliar fungicide applications for Cercosporacontrol in sugarbeet from 2009 to 2015.

	First Application							Last Application					
Year	Resp	June 20-30	July 1-10	July 11-20	July 21-31	Aug 1-10	After 10-Aug	Resp	Before 1-Aug	Aug 1-10	Aug 11-20	Aug 21-31	Sept 1-10	After 10-Sep
	No.	----------% of respondents----------						No.	----------% of respondents----------					
2015	21	5	-	-	24	38	33	9	11	22	11	56	-	-
2014	21	-	-	10	43	29	19	20	30	30	5	25	10	-
2011	17	5	5	12	65	5	5	16	19	6	19	31	25	-
2009	6	-	-	-	-	33	67	6	-	-	17	50	33	-

Fungicides were applied at a rate of 1.2 applications per respondent in 2015 as calculated from Table 4. A summary of fungicides from 1991 to 2015 is shown in Table 4. Of the sugarbeet acres treated with fungicide in 2015, 74% received aerial fungicide applications and 26% received fungicide applications by a ground sprayer (data not shown).

Table 4. The number of fungicide applications to control cercospora per respondent from 1991 to 2015.

		Fungicide applications					
Year	Number of respondents	0	1	2	3	4	5
			----------% of respondents----------				
2015	22	5	77	14	5	-	-
2014	23	4	65	26	4	-	-
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	-	-

One respondent made an in-furrow application of Quadris in 2015 to control Rhizoctonia root rot (data not shown). The respondent who made an in-furrow application also reported making a foliar application of Quadris to control Rhizoctonia. Eleven additional respondents reported making a foliar application of Quadris or Priaxor for Rhizoctonia control. Therefore a total of 57% of respondents made a POST fungicide application to control Rhizoctonia.