

SURVEY OF INSECTICIDE USE IN SUGARBEET IN MINNESOTA AND EASTERN NORTH DAKOTA IN 2013

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Other portions of the survey are published in the Weed Control and Plant Pathology sections of this publication.

Sugarbeet growers reported on their 2013 insecticide use in sugarbeet acreage by completing the annual pesticide use survey conducted by the NDSU Extension Service. This was the second year the survey was conducted exclusively online. This year's survey reports on insecticide usage patterns for 88,310 acres in Minnesota and eastern North Dakota (Tables 1, 2, and 3). Counter, Lorsban 15G, and Mustang are primarily used as planting-time treatments, whereas Lorsban 4E, Lorsban Advanced, and Asana are mostly applied postemergence. Poncho Beta (clothianidin + beta-cyfluthrin), Cruiser (thiamethoxam), and NipsIt (clothianidin) are used as seed treatments at planting. In 2013, Poncho Beta was used on 29% of reported acres compared to 21% in 2012, 25% in 2011, 36% in 2010, and 29% in 2009, the first year Poncho Beta was commercially available (Table 1). Respective use rates of Cruiser and NipsIt in 2013 were 8 and 9% of reported acres, respectively. Counter products (15G, 20G, and 20CR formulations) and Lorsban 15G were used on 26% and 2% of reported acres, respectively, in 2013, while Counter products and Lorsban 15G were applied to 23% and 2% of reported acreage, respectively, in 2012, 29% and 4% in 2011, 19% and 2% in 2010, and 19 and 6% in 2009 (Table 2). Lorsban 4E was applied to 4% of sugarbeet acres in 2005, 5% in 2006, 4% in 2007, 2% in 2008, 4% in 2009, 10% in 2010, 7% in 2011, 9% in 2012, and 8% in 2013 (Table 3). Mustang was used on 21% of the acreage in 2005, 28% in 2006, 23% in 2007, 31% in 2008, 10% in 2009, 14% in 2010, 18% in 2011, 21% in 2012, and 11% in 2013. Averaged over all insecticides and counties, 98% of the respondents' acreage was treated in 2013 compared to 86% in 2012, 89% in 2011, 90% in 2010, 71% in 2009, 92% in 2008, 80% in 2007, 83% in 2006, and 79% in 2005.

Table 1. Seed treatment use by survey respondents in 2013.

County	Respondent acres planted	Number of applications	% of acres planted			Total Seed Treatments
			NipsIt	Cruiser	Poncho Beta	
Cass	1,307	2	0	27	47	75
Chippewa ¹	3,344	0	0	0	0	0
Clay	8,324	11	14	26	33	74
Grand Forks	6,238	10	8	37	14	59
Kittson	1,580	2	0	5	22	26
Marshall	4,307	5	16	0	43	59
Norman	6,242	5	2	0	38	39
Pembina	5,633	7	4	0	66	70
Polk	21,326	36	12	3	34	48
Renville ²	6,570	2	0	2	0	2
Richland ³	3,728	2	0	16	16	32
Trail	3,118	6	40	0	49	89
Traverse ⁴	3,291	1	9	0	0	9
Walsh	6,126	16	24	13	56	92
Wilkin	7,176	0	0	0	0	0
Total	88,310	105	9	8	29	46

¹Includes Kandiyohi and Swift Counties

²Includes Redwood County

³Includes Ransom County

⁴Includes Big Stone, Grant, and Stevens Counties

Table 2. Granular insecticide use by survey respondents in 2013.

County	Respondent acres planted	Number of applications	Not treated	Counter 20CR	% of acres planted			Lorsban 15G	Total Granular Insecticide
					Counter 15G	Counter 20G			
Cass	1,307	0	100	0	0	0	0	0	
Chippewa ¹	3,344	0	100	0	0	0	0	0	
Clay	8,324	6	72	0	0	19	9	28	
Grand Forks	6,238	2	79	0	0	21	0	21	
Kittson	1,580	1	87	0	0	13	0	13	
Marshall	4,307	3	59	0	0	41	0	41	
Norman	6,242	3	89	0	0	9	2	11	
Pembina	5,633	3	68	0	0	27	5	32	
Polk	21,326	24	47	<1	0	53	0	53	
Renville ²	6,570	0	100	0	0	0	0	0	
Richland ³	3,728	2	82	0	8	10	0	18	
Trails	3,118	1	93	0	0	7	0	7	
Traverse ⁴	3,291	0	100	0	0	0	0	0	
Walsh	6,126	6	75	0	0	12	13	25	
Wilkin	7,176	7	65	0	0	32	3	35	
Total	88,310	58	72	<1	<1	25	2	28	

¹Includes Kandiyohi and Swift Counties²Includes Redwood County³Includes Ransom County⁴Includes Big Stone, Grant, and Stevens Counties**Table 3. Liquid insecticide use by survey respondents in 2013.**

County	Respondent acres planted	Number of applications	Not treated	Lorsban				Total Liquid Insecticide
				Lorsban 4E	Advanced	Mustang	Asana	
Cass	1,307	0	100	0	0	0	0	0
Chippewa ¹	3,344	0	100	0	0	0	0	0
Clay	8,324	0	100	0	0	0	0	0
Grand Forks	6,238	4	60	18	8	13	0	40
Kittson	1,580	3	48	0	0	52	0	52
Marshall	4,307	1	93	7	0	0	0	7
Norman	6,242	5	19	0	22	59	0	81
Pembina	5,633	5	39	56	0	5	0	61
Polk	21,326	5	91	0	0	9	0	9
Renville ²	6,570	4	83	0	0	0	17	17
Richland ³	3,728	3	77	3	0	19	0	23
Trails	3,118	0	100	0	0	0	0	0
Traverse ⁴	3,291	1	93	0	0	0	7	7
Walsh	6,126	12	42	44	13	0	0	58
Wilkin	7,176	4	78	0	0	22	0	22
Total	88,310	47	76	8	3	11	2	24

¹Includes Kandiyohi and Swift Counties²Includes Redwood County³Includes Ransom County⁴Includes Big Stone, Grant, and Stevens Counties

Grower evaluations of insect control by insecticide, averaged over all counties, are presented in Table 4. 2013 was the second year that an “unsure” or “not applicable” category was included for this question. A surprisingly large percentage of responses came back in this category. However, of those growers who did evaluate insect control, 89% evaluated sugarbeet root maggot control as good or excellent while 88% evaluated other insect control as good or excellent.

Table 4. Evaluation of root maggot and other insect control by survey respondents in 2013.

Insecticide	Sugarbeet Root Maggot Control						Other Insect Control					
	No. of Responses	Exc	Good	Fair	Poor	Unsure or NA ¹	No. of Responses	Exc	Good	Fair	Poor	Unsure or NA
	-----% of responses-----						-----% of responses-----					
Poncho Beta	59	32	44	8	3	12	59	24	46	10	3	17
Cruiser	14	7	57	7	0	29	14	14	57	0	7	21
NipsIt	32	22	53	16	0	9	32	19	50	6	0	25
Seed Treatment												
Sub-Total	105	26	49	10	2	13	105	21	49	8	3	20
Counter 15G	2	50	50	0	0	0	2	0	100	0	0	0
Counter 20G	47	62	32	2	0	4	47	49	43	0	0	9
Counter 20CR	1	100	0	0	0	0	1	100	0	0	0	0
Lorsban 15G	6	67	0	17	0	17	6	0	17	17	0	67
Granular												
Sub-Total	56	63	29	4	0	5	56	43	41	2	0	14
Lorsban 4E	19	11	53	16	0	21	19	16	32	0	0	53
Lorsban Advan	4	25	50	0	0	25	4	0	50	0	0	50
Mustang	18	17	33	6	0	44	18	28	39	22	0	11
Asana	5	40	20	0	0	40	5	40	20	20	0	20
Liquid												
Sub-Total	46	17	41	9	0	33	46	22	35	11	0	33
Total	207	34	42	8	1	15	207	27	43	7	1	21

¹NA=Not applicable. Grower did not have the insect and therefore could not evaluate control.

Cutworms, grasshoppers, lygus bugs, springtails, wireworms, white grubs, and root aphids were identified as insect pests other than sugarbeet root maggot that were targeted for control in areas treated with insecticides and seed treatments in 2013 (Table 5). Respondents viewed wireworms as the most common non-maggot insect pest problem in sugarbeet.

Table 5. Insects other than root maggot that were targeted for control by survey respondents in 2013.

County	Number of Responses	Cutworm	Grasshopper	Lygus	Springtail	Wireworm	White Grub	Root Aphid
Cass	3	-	-	-	67	33	-	-
Chippewa ¹	0	-	-	-	-	-	-	-
Clay	35	31	-	-	34	29	6	-
Grand Forks	19	16	-	-	42	42	-	-
Kittson	8	25	-	-	25	50	-	-
Marshall	18	33	-	11	17	33	6	-
Norman	14	29	-	14	14	36	-	7
Pembina	8	38	-	-	-	63	-	-
Polk	109	28	3	3	31	32	4	-
Renville ²	6	17	-	17	17	33	17	-
Richland ³	6	33	17	-	17	17	17	-
Trails	13	15	8	8	31	31	8	-
Traverse ⁴	2	50	-	-	-	-	50	-
Walsh	8	13	-	-	13	75	-	-
Wilkin	18	28	-	-	33	28	11	-
Total	267	27	2	3	28	34	5	<1

¹Includes Kandiyohi and Swift Counties

²Includes Redwood County

³Includes Ransom County

⁴Includes Big Stone, Grant, and Stevens Counties

Survey data on granule placement methods used by growers in 2013 is presented in Table 6. Modified in-furrow and band application were evenly split as the most commonly used placement method for all granular insecticides reported. Three respondents reported using modified in-furrow (MIF) placement for Lorsban 15G applications. This is concerning because MIF placement increases the likelihood of Lorsban 15G causing seedling injury, stunting, and yield loss. As such, MIF placement is not recommended by NDSU Extension for applying Lorsban 15G.

Table 6. Placement of granular insecticides used in sugarbeet in 2013.

Insecticide	No. of Responses	Band	Spoon	Mod. In-Furrow	Broadcast
-----% of responses-----					
Counter 15G	2	50	0	50	0
Counter 20G	46	35	35	30	
Counter 20CR	1			100	
Lorsban 15G	6	33		50	17
Total	55	35	29	35	2

Survey data on liquid insecticide placement methods by growers is listed in Table 7. Postemergence (POST) broadcast applications were the most common spray placement method when averaged across all liquid insecticides reported. Mustang and Lorsban 4E were reported as being applied at planting.

Table 7. Placement of liquid insecticides used in sugarbeet in 2013.

Insecticide	No. of Responses	Band at Plant	In-Furrow	POST Broadcast	POST Band
-----% of responses-----					
Lorsban 4E	19		5	79	16
Lorsban Advanced	5			100	
Mustang	18	22	72	6	
Asana	5			80	20
Total	47	9	30	53	9