SURVEY OF INSECTICIDE USE IN SUGARBEET IN MINNESOTA AND EASTERN NORTH DAKOTA IN 2012

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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 2012 insecticide use in sugarbeet acreage by completing the annual pesticide use survey conducted by the NDSU Extension Service. This was the first year the survey was conducted exclusively online. This year's survey reports on insecticide usage patterns for 69,662 acres in Minnesota and eastern North Dakota (Tables 1, 2, and 3). Counter 15G, Counter 20G, Lorsban 15G, and Mustang are primarily used as planting-time treatments, whereas Lorsban 4E, Lorsban Advanced, and Asana are mostly applied postemergence. Poncho Beta, Cruiser, and NipsIt are used as seed treatments at planting. In 2012, Poncho Beta was used on 21% of reported acres compared to 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 2012 were 5 and 4% of the reported acres, respectively. Counter products (15G and 20G formulations) and Lorsban 15G were used on 23% and 2% of reported acres, respectively, in 2012, while Counter products and Lorsban 15G were applied to 29% and 4% of reported acreage, respectively, 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, and 9% in 2012 (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, and 21% in 2012. Averaged over all insecticides and counties, 86% of the respondents' acreage was treated in 2012 compared to 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 2012.

County	Respondent acres planted	Number of applications	NipsIt	Cruiser	Poncho Beta	Total Seed Treatments
			----------% of acres planted----------			
Cass	1,323	3	47	14	39	100
Chippewa[1]	1,973	4	0	0	0	0
Clay[2]	7,147	1	0	21	43	64
Grand Forks	2,446	1	0	0	4	4
Kittson	5,436	3	0	0	10	10
Marshall	5,200	3	2	0	25	27
Norman[3]	3,775	3	20	0	6	25
Pembina	5,153	8	6	14	62	83
Polk	16,660	15	7	1	27	35
Renville[4]	6,323	3	0	4	3	7
Richland	368	0	0	0	0	0
Traill	896	1	0	0	40	40
Traverse[5]	2,241	0	0	0	0	0
Walsh	2,602	3	3	11	3	17
Wilkin[6]	8,119	1	0	0	5	5
Total	69,662	49	4	5	21	30

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, McLeod, Redwood, Sibley, Stearns, and Yellow Medicine Counties
[5]Inclueds Big Stone, Grant, Pope, and Stevens Counties
[6]Includes Ottertail County

Table 2. Granular insecticide use by survey respondents in 2012.

County	Respondent acres planted	Number of applications	Not treated	Thimet	Counter 15G	Counter 20G	Lorsban 15G	Total Granular Insecticide
			----------% of acres planted----------					
Cass	1,323	0	100	0	0	0	0	0
Chippewa[1]	1,973	0	100	0	0	0	0	0
Clay[2]	7,147	4	64	0	0	36	0	36
Grand Forks	2,446	2	67	0	0	33	0	33
Kittson	5,436	1	88	0	0	12	0	12
Marshall	5,200	1	81	0	0	15	5	19
Norman[3]	3,775	0	100	0	0	0	0	0
Pembina	5,153	3	80	5	5	3	8	20
Polk	16,660	15	54	0	0	46	0	46
Renville[4]	6,323	0	100	0	0	0	0	0
Richland	368	1	0	0	0	100	0	100
Traill	896	2	48	0	0	52	0	52
Traverse[5]	2,241	0	100	0	0	0	0	0
Walsh	2,602	2	63	0	0	23	14	37
Wilkin[6]	8,119	4	81	0	0	17	2	19
Total	69,662	35	76	<1	<1	22	2	24

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, McLeod, Redwood, Sibley, Stearns, and Yellow Medicine Counties
[5]Inclueds Big Stone, Grant, Pope, and Stevens Counties
[6]Includes Ottertail County

Table 3. Liquid insecticide use by survey respondents in 2012.

County	Respondent acres planted	Number of applications	Not treated	Lorsban 4E	Lorsban Advanced	Mustang	Asana	Total Liquid Insecticide
			----------% of acres planted----------					
Cass	1,323	1	86	0	0	14	0	14
Chippewa[1]	1,973	1	96	0	0	0	4	4
Clay[2]	7,147	1	87	1	0	13	0	13
Grand Forks	2,446	2	97	0	0	3	0	3
Kittson	5,436	5	42	0	0	58	0	58
Marshall	5,200	2	81	7	0	12	0	19
Norman[3]	3,775	1	18	0	0	147	0	147
Pembina	5,153	6	23	88	8	7	0	103
Polk	16,660	4	86	0	0	14	0	14
Renville[4]	6,323	4	71	0	0	19	10	29
Richland	368	0	100	0	0	0	0	0
Traill	896	0	100	0	0	0	0	0
Traverse[5]	2,241	0	100	0	0	0	0	0
Walsh	2,602	3	45	55	0	0	0	55
Wilkin[6]	8,119	2	92	0	0	4	4	8
Total	69,662	32	73	9	1	21	1	32

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, McLeod, Redwood, Sibley, Stearns, and Yellow Medicine Counties
[5]Inclueds Big Stone, Grant, Pope, and Stevens Counties
[6]Includes Ottertail County

Grower evaluations of insect control by insecticide, averaged over all counties, are presented in Table 4. 2012 was the first 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, 95% evaluated sugarbeet root maggot control as good or excellent while 89% evaluated other insect control as good or excellent.

Table 4. Evaluation of root maggot and other insect control by survey respondents in 2012.

	Sugarbeet Root Maggot Control						Other Insect Control					
Insecticide	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	30	37	47	3	0	13	30	23	40	13	0	23
Cruiser	7	14	29	29	0	29	8	13	38	38	0	13
NipsIt	11	27	55	0	0	18	11	9	36	0	0	55
Seed Treatment Sub-Total	**48**	**31**	**46**	**6**	**0**	**17**	**49**	**18**	**39**	**14**	**0**	**29**
Counter 15G	1	100	0	0	0	0	1	100	0	0	0	0
Counter 20G	31	68	29	0	0	3	31	45	29	0	0	26
Lorsban 15G	3	67	0	0	0	33	3	0	67	0	0	33
Thimet 20G	1	100	0	0	0	0	1	0	100	0	0	0
Granular Sub-Total	**36**	**69**	**25**	**0**	**0**	**6**	**36**	**42**	**33**	**0**	**0**	**25**
Lorsban 4E	12	25	58	0	0	17	11	9	45	0	0	45
Lorsban Advan	1	100	0	0	0	0	1	0	0	0	0	100
Mustang	18	22	33	17	0	28	18	28	56	11	0	6
Asana	5	20	20	0	0	60	5	40	20	20	0	20
Liquid Sub-Total	**36**	**25**	**39**	**8**	**0**	**28**	**35**	**23**	**46**	**9**	**0**	**23**
Total	**120**	**41**	**38**	**5**	**0**	**17**	**120**	**27**	**39**	**8**	**0**	**26**

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

Cutworms, grasshoppers, lygus bugs, wireworms, springtails, and white grubs were identified as insect pests other than sugarbeet root maggot that were targeted for control in areas treated with insecticides and seed treatments in 2012 (Table 5). Respondents viewed cutworms 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 2012.

County	Number of Responses	Cutworm	Grasshopper	Lygus	Springtail	Wireworm	White Grub
		% of responses					
Cass	2	0	0	0	50	50	0
Chippewa[1]	2	0	50	50	0	0	0
Clay[2]	11	36	9	9	27	18	0
Grand Forks	4	50	0	0	25	25	0
Kittson	11	18	0	0	27	55	0
Marshall	10	40	0	0	20	40	0
Norman[3]	3	33	0	0	0	67	0
Pembina	33	27	24	9	9	21	9
Polk	37	38	0	0	24	35	3
Renville[4]	13	62	0	31	0	0	8
Richland	2	0	0	0	0	50	50
Traill	4	25	0	0	50	25	0
Traverse[5]	0	0	0	0	0	0	0
Walsh	5	20	20	20	40	0	0
Wilkin[6]	9	44	0	11	11	22	11
Total	146	34	8	8	18	27	5

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, McLeod, Redwood, Sibley, Stearns, and Yellow Medicine Counties
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Survey data on granule placement methods used by growers in 2012 is presented in Table 6. Modified in-furrow application was the most commonly used placement method, and band application was the second most common delivery method for all granular insecticides reported. One respondent 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 2012.

Insecticide	No. of Responses	Band	Spoon	Mod. In-Furrow
		% of responses		
Counter 15G	1	100	-	-
Counter 20G	31	32	23	45
Lorsban 15G	3	-	33	67
Thimet	1	100	-	-
Total	36	33	22	44

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 was the only insecticide reported as being applied at planting.

Table 7. Placement of liquid insecticides used in sugarbeet in 2012.

Insecticide	No. of Responses	Band at Plant	In-Furrow	POST Broadcast	POST Band
		% of responses			
Lorsban 4E	11	-	-	91	9
Lorsban Advanced	1	-	-	100	-
Mustang	21	14	48	29	10
Asana	5	-	-	100	-
Total	38	8	26	58	8