

TURNING POINT® SURVEY OF SUGARBEET INSECT PEST PROBLEMS AND MANAGEMENT PRACTICES IN MINNESOTA AND EASTERN NORTH DAKOTA IN 2016

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Attendees of the 2017 Sugarbeet Winter Grower Seminars answered survey questions about their 2016 insect pest management issues and associated production practices in a live polling questionnaire that was conducted using Turning Point® interactive personal response technology. Initial questioning identified the county in which the majority of each respondent’s sugarbeet crop was produced (Tables 1, 2, and 3).

Table 1. 2017 Fargo Grower Seminar – number of survey respondents by county growing sugarbeet in 2016.

County	Number of Responses	Percent of Responses
Barnes	3	9
Cass	7	21
Clay	11	32
Norman ¹	8	24
Richland	1	3
Traill	3	9
Wilkin ²	1	3
Total	34	100

¹Includes Mahnomon County

²Includes Otter Tail County

Table 2. 2017 Grafton Grower Seminar – number of survey respondents by county growing sugarbeet in 2016.

County	Number of Responses	Percent of Responses
Grand Forks	1	2
Kittson	4	7
Marshall	5	9
Pembina	19	35
Polk	1	2
Walsh	23	43
Other	1	2
Total	54	100

Table 3. 2017 Wahpeton Grower Seminar – number of survey respondents by county growing sugarbeet in 2016.

County	Number of Responses	Percent of Responses
Cass	2	4
Clay	3	7
Grant	5	11
Otter Tail	1	2
Richland	7	16
Stevens	1	2
Traverse	5	11
Wilkin	21	47
Total	45	100

NOTE: acreage estimates provided in this report do not include data from the Willmar Seminar location because that survey did not include questions involving insect pest incidence or insect pest management practices. An estimated 99,491 acres were reported on by a total of 128 respondents at the Fargo, Grafton, and Wahpeton Winter Grower seminars (Table 4). The majority (35%) of respondents reported growing sugarbeet on between 300 and 599 acres in the 2016 production season. An additional 18% produced sugarbeet on 100 to 299 acres and another 32% grew the crop on a reported range of between 600 and 1,499 acres in 2016.

Table 4. Ranges of sugarbeet acreage operated by respondents in 2016.

Location	Number of Responses	Acres of sugarbeet									
		<99	100-199	200-299	300-399	400-599	600-799	800-999	1000-1499	1500-1999	2000+
-----% of responses-----											
Fargo	33	3	0	15	18	18	6	9	12	6	12
Grafton	53	6	15	11	9	17	9	11	9	2	9
Wahpeton	42	2	7	2	10	33	17	12	10	5	2
Total	128	4	9	9	12	23	11	11	10	4	8

From a total of 127 respondents in the Fargo, Grafton, and Wahpeton Grower seminars, 26% reported that the sugarbeet root maggot was their worst insect pest problem during the 2016 growing season (Table 5). The root maggot was reported as the worst insect pest problem by respondents at both the Fargo (21%) and Grafton (47%) locations. Other significant insect pest problems reported included cutworms (6 and 7% of respondents at Fargo and Wahpeton, respectively), wireworms (6 and 5% of respondents at Fargo and Wahpeton, resp.), and white grubs (5% of respondents at the Wahpeton seminar).

Table 5. Worst insect pest problem in sugarbeet in 2016.

Location	Number of Responses	Springtails	Cutworms	Lygus bugs	Wireworms	Root maggot	White grubs	None
Fargo	33	3	6	3	6	21	0	61
Grafton	51	0	0	0	0	47	2	51
Wahpeton	43	2	7	0	5	5	5	77
Total	127	2	4	1	3	26	2	62

The majority (47%) of respondents that attended the Fargo, Grafton, and Wahpeton Winter Grower Seminars indicated that they used seed treated with Poncho Beta insecticidal seed treatment, whereas Cruiser and NipsIt Inside seed treatment insecticides were only reported as being used by 5 and 3% of respondents, respectively (Table 6). A relatively large number (45%) of respondents at these events reported that they did not use any insecticidal seed treatment in 2016. Most of the use of seed treatment insecticides was reported by attendees of the Fargo and Grafton Grower Seminars.

Table 6. Seed treatment insecticide use for sugarbeet insect pest management in 2016.

Location	Number of Responses	Poncho Beta	Cruiser	NipsIt Inside	None
Fargo	30	57	3	3	37
Grafton	49	67	8	6	18
Wahpeton	40	15	3	0	82
Total	119	47	5	3	45

Planting-time granular insecticides were used by a combined average of 29% of grower attendees of the Fargo, Grafton, and Wahpeton seminars (Table 7). An overall average of 24% of growers at these meetings reported using Counter 20G at planting time, whereas only 5% of attendees reported applying Lorsban 15G for planting-time protection of their sugarbeet crop from insect pests. Thirty-one percent of Fargo seminar respondents reported using Counter 20G at planting time, whereas 21 and 22% of respondents at the Grafton and Wahpeton seminars,

respectively, reported applying Counter 20G at planting to protect their sugarbeet crop. Overall, 66% of respondents across all three grower seminars reported that they did not use a granular insecticide product at planting in 2016.

Table 7. Planting-time granular insecticide use for sugarbeet insect pest management in 2016.

Location	Number of Responses	Counter 20G	Lorsban 15G	Thimet 20G	Other	None
Fargo	29	31	3	0	0	66
Grafton	47	21	2	9	2	66
Wahpeton	40	22	10	0	3	65
Total	116	24	5	3	2	66

Overall results from this survey across all three seminar locations indicated that 22% of all respondents used low to moderate rates (5.25 to 7.5 lb product/ac) of Counter 20G, while only 6% used the high rate of this material (Table 8). At the Fargo seminar, the majority of respondents that reported using Counter 20G indicated that they applied it at the 7.5-lb rate, whereas, at the Grafton seminar, the majority reported using Counter at its high (9 lb product/ac) rate in 2016. The majority of grower respondents at the Fargo seminar location that reported using Lorsban 15G at planting time indicated that they applied it at the low labeled rate of 6.7 lb product/ac. Attendees of the Grafton seminar that reported using Lorsban 15G were split evenly between using it at its high (13.4 lb/ac) and low (6.7 lb) application rates. At the Wahpeton location, 100% of attendees that reported using Lorsban 15G indicated that they applied it at a moderate rate of 10 lb of product per acre.

Table 8. Application rates of planting-time granular insecticides used for sugarbeet insect pest management in 2016.

Location	Number of Responses	Counter 20G			Lorsban 15G			Other	None
		9 lb	7.5 lb	5.25 lb	13.4 lb	10 lb	6.7 lb		
-----% of responses-----									
Fargo	31	0	23	16	0	0	3	6	52
Grafton	49	14	4	8	2	0	2	0	69
Wahpeton	42	0	12	12	0	7	0	5	64
Total	122	6	11	11	1	2	2	3	63

Most of the postemergence insecticide use for sugarbeet root maggot management was reported by growers that attended the Grafton Growers Seminar (Table 9). At that location, the majority (44%) of respondents indicated that they used either Lorsban Advanced or Lorsban 4E (or a generic equivalent material), and an additional 13% reported using Thimet 20G. Similarly, the majority of respondents at the Fargo seminar that reported using a postemergence insecticide for root maggot control indicated that they used either Lorsban Advanced or Lorsban 4E (or a generic equivalent material). An average of 60% of the respondents across all locations indicated that they did not apply a postemergence insecticide to manage the sugarbeet root maggot. The majority of those respondents were attendees of the Fargo and Wahpeton locations, where a respective 82 and 73% of the respondents reported no use of a postemergence insecticide for root maggot control.

Table 9. Postemergence insecticide use for sugarbeet root maggot management in 2016.

Location	Number of Responses	Lorsban 4E	Lorsban Advanced	Mustang	Asana	Other liquid	Counter 20G	Lorsban 15G	Thimet 20G	None
Fargo	34	9	6	3	0	0	0	0	0	82
Grafton	45	40	4	4	0	0	0	2	13	36
Wahpeton	40	8	0	12	0	0	2	2	2	73
Total	122	20	3	7	0	0	1	2	6	60

Overall satisfaction with insecticide applications made for root maggot management was rated as good to excellent by 78% of respondents when averaged across the Fargo, Grafton, and Wahpeton seminar locations (Table 10). At the Fargo location, 82% of respondents rated their satisfaction with root maggot management efforts as

being good to excellent. Similarly, 91% of respondents at the Grafton location rated their satisfaction with root maggot management practices as being good to excellent. The percentages of respondents that indicated good to excellent satisfaction with performance of root maggot management practices were lower at the Wahpeton location; however, that is likely a product of a large portion (55%) of those respondents responding with an answer of “unsure”.

Table 10. Satisfaction with insecticide treatments for sugarbeet root maggot management in 2016.

Location	Number of Responses	-----% of responses-----				
		Excellent	Good	Fair	Poor	Unsure
Fargo	16	44	38	0	0	19
Grafton	32	19	72	6	0	3
Wahpeton	11	27	9	0	9	55
Total	59	27	51	3	2	17

At the Fargo Growers Seminar, 16% of respondents indicated that their insecticide use in sugarbeet had decreased in comparison to the previous five years, and 74% of respondents at that location reported no change in insecticide use (Table 11). However, 33% of grower attendees at the Grafton location indicated that their insecticide use had increased when compared to the previous five years. This finding is probably due to recent increases in root maggot populations that reached extremely high levels in 2015 and continued into the 2016 growing season. At the Wahpeton seminar location, 49% of attendees indicated that their insecticide use either did not change or had decreased in comparison to the previous five years. Attendees at that location also had the highest percentage (44%) of no reported insecticide use in 2016.

Table 11. Insecticide use in sugarbeet during 2016 compared to the previous 5 years.

Location	Number of Responses	-----% of responses-----			
		Increased	Decreased	No Change	No Insecticide Use
Fargo	31	3	16	74	6
Grafton	49	33	6	57	4
Wahpeton	41	7	15	34	44
Total	121	16	12	54	18

At the Fargo Sugarbeet Growers Seminar, 47% of attendees indicated using an online decision-making tool for sugarbeet insect pest management in 2016 (Table 12). Similarly, 66% of the attendees at the Grafton location indicated that they used some form of online information or tool for assistance or guidance with their insect management decision-making procedures. Conversely, only 12% of the attendees at the Wahpeton seminar location indicated use of an online decision-making tool. The majority of respondents at the Grafton location that indicated use of an online insect management tool responded that they used NDSU’s online posting of root maggot fly counts for guidance with management decisions. An additional 19% of the Grafton attendees reported using the NDSU root maggot model application on the North Dakota Agricultural Weather Network (NDAWN) website.

Table 12. Use of online decision-making tools for sugarbeet insect management in 2016.

Location	Number of Responses	-----% of responses-----					
		NDSU Crop & Pest Report	NDAWN Root Maggot Model	Root Maggot Fly Counts (online)	Root Maggot Mobile App	Other	None
Fargo	38	10	10	3	0	24	53
Grafton	62	5	19	31	3	8	34
Wahpeton	41	2	2	2	0	5	88
Total	141	6	12	15	1	11	55