SURVEY OF WEED CONTROL AND PRODUCTION PRACTICES ON SUGARBEET IN MINNESOTA AND EASTERN NORTH DAKOTA - 2008

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Other portions of the survey are published in the
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The fortieth annual weed control and production practices questionnaire was mailed in September, 2008 to sugarbeet growers producing sugarbeet for the American Crystal Sugar Company, the Minn-Dak Farmers Cooperative, and the Southern Minnesota Beet Sugar Cooperative. Growers were requested to evaluate weed control and sugarbeet injury from specific herbicides and herbicide combinations, and to list the most important weed and production problems. In addition, growers were requested to list insecticide use, fungicide use, total acreage, acres of hand-weeded sugarbeet, herbicide application methods, cost of hand thinning and hand weeding, number of row cultivations for conventional and glyphosate-resistant sugarbeet, whether conventional herbicide rates increased, if any glyphosate-resistant weeds were observed, and to list suspected glyphosate-resistant weed species. Insecticide use and fungicide use portions of the survey can be found in the Entomology and Plant Pathology sections.

Growers planted 637,564 acres of sugarbeet in the Red River Valley and West Central Minnesota in 2008. Two hundred thirty-nine sugarbeet growers responded to the survey, representing 111,609 acres (Table 1). This represents nearly 18 percent of the total sugarbeet acres planted for the area, a slight increase compared to 2007 (16%). Of the acres reported, 51% were conventional sugarbeet and 49% were Roundup Ready® sugarbeet. This was the first growing season that Roundup Ready sugarbeets were commercially planted in the Red River Valley and West Central Minnesota. The responses to the weed control portions of the survey are reported in Tables 1 to 32.

Table 1 provides a summary of total herbicide use and performance averaged over type of sugarbeet and counties. The number of growers reporting the use of an herbicide treatment is listed and the acres treated is expressed as a percentage of the total acreage reported on the survey. Multiple herbicide treatments are tabulated for each grower, thus the number of growers reporting in Table 1 exceeds the total number of survey responses. Also, multiple herbicide treatments on the same acreage are listed separately in the tables, thus acres treated exceeds 100%. Weed control and sugarbeet injury are presented as the percentage of growers evaluating weed control or sugarbeet injury according to the categories listed. Table 2 and 3 provides a summary of herbicide use and performance averaged over growers planting only conventional sugarbeet or only Roundup Ready sugarbeet, respectively. Data for individual counties for all herbicides are in Tables 5 through 20.

The herbicide trade names listed in the tables are the original trade names. The original trade names also represent the generic formulations of the same active ingredient. Thus Nortron also represents Etho SC and Ethotron; Betamix also represents D-P Mix and Phen-Des; Betanex also represents Des and Alphanex; Progress also represents Des-Phen-Etho and BNB Plus; Stinger also represents ClopyrAg; Select also represents Select Max, Prism, Arrow, Clethodim, Intensity, Intensity One, Section, and Shadow; and Assure II also represents Targa.

Total sugarbeet acreage, regardless of type, treated with all herbicides in 2008 was 308% (Tables 1 and 4) which compares to 383% in 2007, 386% in 2006, 378% in 2005, 427% in 2004, 437% in 2003, 428% in

2002 and 368% in 2001. The acres treated do not include "other weed control methods" which were non-herbicidal methods. Only conventional sugarbeet acreage treated with herbicides in 2008 was 407% (Tables 2 and 4), higher than the three previous years. Only Roundup Ready sugarbeet acreage treated with herbicides in 2008 was 225% (Tables 3 and 4). The reduction in herbicide use for all sugarbeet types is attributed to the introduction and utilization of Roundup Ready sugarbeets.

Nortron, Dual, and 'other' soil herbicides were reportedly used in 2008. Soil-applied herbicide use for all sugarbeet acreage was 47% in 1989, 32% in 1993, 11% in 1998, 4% in 2002, 29% in 2003, 31% in 2004, 24% in 2005, 23% in 2006, 25% in 2007, and 20% in 2008 (Table 1). Soil-applied herbicide use for only conventional sugarbeet was 35% in 2008 (Table 2), an increase in usage. No soil-applied herbicides were reportedly used by growers with only Roundup Ready sugarbeet in 2008 (Table 3). However, six growers planting both conventional and Roundup Ready sugarbeets did apply Nortron as a soil-applied herbicide to Roundup Ready sugarbeet (Table 1). The decline in usage of soil-applied herbicides for all sugarbeet acreage can be attributed to the introduction and utilization of Roundup Ready sugarbeets. At this time, it appears that growers planting only Roundup Ready sugarbeets will not be interested in applying soil-applied herbicides.

Postemergence herbicide use for all sugarbeets declined to 279% in 2008 (Table 1) compared to 340% in 2007, 335% in 2006, 336% in 2005, 379% in 2004, 380% in 2003, 388% in 2002 and 342% in 2001. However, postemergence herbicide use for only conventional sugarbeet acreage in 2008 increased slightly to 346% (Table 2). Postemergence herbicide use for all sugarbeets in 2008 was at the lowest level since 1991 when use was 279%. Postemergence herbicide use for only Roundup Ready sugarbeet acres in 2008 was 223% (Table 3). Therefore growers only planting Roundup Ready sugarbeets reduced the number of postemergence herbicide applications by 1.2 compared to conventional only sugarbeet growers. The reduction in postemergence herbicide use can be directly attributed to the introduction and utilization of Roundup Ready sugarbeet in 2008. Growers were asked if conventional herbicide rates in conventional sugarbeets were increased in 2008. Twenty-two percent of growers reportedly increased conventional herbicide rates in 2008. This increase may be caused by delaying postemergence herbicide applications early in the growing season due to weather conditions and/or a reduction in the sensitivity of weed populations to conventional herbicides.

The usage of postemergence grass herbicides was 104 % (Table 1) of all sugarbeet acreage in 2008 as compared to 189% in 2007, 215% in 2006, 203% in 2005, 226% in 2004, 214% in 2003, 209% in 2002 and 214% in 2001. The usage of postemergence grass herbicides was 220% of the only conventional sugarbeet acreage in 2008 (Table 2), an increase compared to the previous three years. Assure II was used on 13% of the total acreage in 2002, 15% in 2003, 9% in 2004, 12% in 2005, 6% in 2006, 13% in 2007, and 3% in 2008 (Table 1). Select was used on 190% of the total acreage in 2002, 180% in 2003, 198% in 2004, 165% in 2005, 199% in 2006, 167% in 2007, and 92% in 2008 (Table 1). Select was used on 206% of the only conventional sugarbeet acres in 2008, the highest amount since 2002 (Table 2). This increase may have been due to the poor environmental conditions during early June and an increase in wild oat resistant to low rates of Select. Poast was used on 17% of the acreage in 2002, 19% in 2003, 20% in 2004, 25% in 2005, 11% in 2006, 9% in 2007, and 8% in 2008 (Table 1). Most of the postemergence grass herbicides were applied in combination with the micro-rate or mid-rate which included an oil adjuvant. About 10% of the acres reported were treated with a postemergence grass herbicide used alone.

Betanex was applied to 107% of the total acreage in 2001, 112% in 2002, 100% in 2003, 71% in 2004, 51% in 2005, 62% in 2006, 67% in 2007, and 32% in 2008 (Table 1). Betanex was used on 90% of only conventional sugarbeet acres (Table 2) in 2008, the most since 2003. Betamix was applied to 116% of the total acreage in 2001, 139% in 2002, 115% in 2003, 125% in 2004, 95% in 2005, 93% in 2006, 122% in 2007, and 53% in 2008 (Table 1). Betamix was used on 68% of only conventional sugarbeet acreage in 2008 (Table2), the least since 2001. Progress was applied to 81% of the total acreage in 2001, 97% in 2002, 122% in 2003, 137% in 2004, 149% in 2005, 157% in 2006, 131% in 2007, and 75% in 2008 (Table 1). Progress was applied to 259% of the only conventional sugarbeet acreage in 2008 (Table 2),

nearly two times the amount in 2007. Various reasons can be attributed to this increase, such as the difficulty in making timely herbicide applications early in the 2008 growing season, a reduction in the supply of Betanex, and/or the difficulty in controlling kochia, lambsquarters, pigweed species, and other weeds in conventional sugarbeet. Based upon total sugarbeet acreage, the use of Betanex, Betamix, and Progress was cut in half from a combined total of 320% in 2007 to 160% in 2008. This reduction was caused by the introduction of Roundup Ready sugarbeet in 2008. The most common conventional herbicide treatment in 2008 was Progress + Stinger + UpBeet + Select + Oil adjuvant on 27% of the total acreage (Table 1). Combination treatments that included oil generally would be micro-rate or mid-rate treatments. Treatments including oil were applied to 128% of the acreage in 2008, 250% in 2007, 258% in 2006, 241% in 2005, 273% in 2004, 297% in 2003, 301% in 2002 and 265% in 2001.

The most common herbicide treatment in 2008 was glyphosate applied at one pound acid equivalent per acre (1.0 lb ae/A = 28 fl oz/A of Roundup PowerMAX/WeatherMAX) on 53% of the total acreage (Table 1). Glyphosate was used on 105% of the total sugarbeet acreage reported in 2008 (Table 1). Glyphosate was applied to 223% of the only Roundup Ready sugarbeet acreage reported in 2008 (Table 3). The average total amount of glyphosate applied to Roundup Ready sugarbeets in 2008 was 1.93 pounds acid equivalent per acre. The average amount of glyphosate applied per acre is calculated by multiplying the percentage of acres applied to a particular glyphosate rate by the total acres by that glyphosate rate. Repeat that procedure for each glyphosate rate, add the pounds applied for each rate, and then divide by the total acreage. Based upon postemergence herbicide applications, only Roundup Ready sugarbeet growers reported excellent weed control on 85% of the acres (Table 3) compared to 34% of only conventional sugarbeet growers (Table 2). This is the best rating of sugarbeet weed control in the history of this survey. Prior to 2008, the largest percentage of growers reporting excellent weed control with postemergence herbicides was 38% in 1989. Glyphosate provided superior weed control compared to conventional sugarbeet herbicides.

Outlook was the most frequently applied lay-by treatment in 2008. Outlook was applied as a lay-by treatment to 18.5% of the only conventional sugarbeet acreage in 2008 (Table 2). Outlook was applied as a lay-by treatment to 2% of the only Roundup Ready sugarbeet acreage in 2008 (Table 3).

The rotary hoe or harrow were used on 15% of the acres in 2008 (Table 1) compared to 25% in 2007, 41% in 2006, 56% in 2005, 64% in 2004, 65% in 2003, 42% in 2002, 63% in 2001 and 62% in 2000. The percentage of reported acres treated with a rotary hoe or harrow dropped dramatically in 2007 and again in 2008 compared to previous years. This most likely was due to an unusually wet spring in 2007 which prevented the use of these implements by growers and the adoption of glyphosate resistant sugarbeet in 2008. The electrical discharge system, weed pullers, mowing or swathing were used on 7.6% of the acreage in 1995, 1.6% in 1997, 2.4% in 2001, 3.1% in 2002, 2% in 2003, 0.5% in 2004, 1.9% in 2005, 1.7% in 2006, 2.6% in 2007, and 0.4% in 2008.

Sugarbeet acreage operated by respondents to the survey in 2008 varied from less than 50 acres to over 2,000 acres (Table 21) with the median sugarbeet acreage being 376 acres and the average being 467 acres. The most common acreage range was 400 to 599 acres for 21% of the respondents. Other common acreage ranges were 100 to 199 acres at 13%, 200 to 299 acres at 17%, 300 to 399 acres at 13%, and 600 to 799 acres at 14%. Seven percent of the respondents reported over 1,000 acres and 14% had over 800 acres.

Pigweed was named most often by all respondents as the “worst weed” problem in sugarbeet in 2008 (Table 22). The percentage of respondents indicating pigweed species as their “worst weed” problem was 43% in 2001, 44% in 2002, 25% in 2003, 21% in 2004, 42% in 2005, 35% in 2006, 34% in 2007, and 27% in 2008 (Table 22). Kochia was named the “worst weed” problem by 25% of all survey respondents in 2008 (Table 22), 41% in 2007 and 2006, 29% in 2005, 41% in 2004, 46% in 2003, 26% in 2002, 32% in 2001, 43% in 2000, 33% in 1999 and 13% in 1998. The widespread occurrence of kochia that is resistant to UpBeet helps explain the prevelance of kochia being named as one of the top two “worst weed” problems in sugarbeet over the past 10 years. Common lambsquarters was named the “worst

weed" problem in sugarbeet by 19% of all respondents in 2008 (Table 22), 16% in 2007, 18% in 2006, 15% in 2005, 25% in 2004 and 18% in 2003. None was named the "worst weed" problem by 54% of respondents planting only Roundup Ready sugarbeet in 2008 (Table 24). Pigweed was named the "worst weed" problem by 16% of survey respondents planting only Roundup Ready sugarbeet in 2008 (Table 24). Wild buckwheat was named the "worst weed" problem by 5% respondents planting Roundup Ready sugarbeet in 2008 (Table 24), the highest response since 1997 (6%) (Table 22). Other weed species reported as "worst weed" problems by respondents planting only Roundup Ready sugarbeet included Roundup Ready soybean, Roundup Ready canola, and tansy mustard, most likely mis-identified as Roundup Ready canola (Table 24).

Weeds were named as the most serious production problem by 30% of all survey respondents in 2008 compared to 46% in 2007, 57% in 2006, 36% in 2005, 47% in 2004, 61% in 2003, 53% in 2002 and 52% in 2001 (Table 25). 2008 was the first year since 1998 that weeds were named as the most serious production problem by less than one-third of all respondents. However, weeds were named as the most serious production problem by 46% of respondents planting only conventional sugarbeets in 2008 (Table 26), similar to previous years (Table 25). Weeds were named as the most serious production problem by only 2% of respondents planting only Roundup Ready sugarbeets in 2008 (Table 26). No problem and rhizoctonia/aphanomyces were named most often as the most serious production problems by respondents planting only Roundup Ready sugarbeet in 2008 (Table 26). With the use of Roundup Ready sugarbeet, weed control has become less of a problem for many growers while root diseases are a greater concern. The percentage of all respondents who named emergence and stand as their most serious problem was 5% in 2001, 19% in 2002, 1% in 2003, 21% in 2004, 3% in 2005, 9% in 2006, 18% in 2007, and 21% in 2008. Emergence and stand was a greater problem this year due to the cold and dry conditions at planting. Rhizoctonia/aphanomyces was named as most serious problem by 18% of all respondents in 2000, 16% in 2001, 9% in 2002, 11% in 2003, 8% in 2004, 22% in 2005, 13% in 2006, 18% in 2007, and 24% in 2008. Soil moisture and soil temperature have a very large influence on sugarbeet injury caused by rhizoctonia and aphanomyces.

Rhizomania was listed as a "most serious production problem" choice for the first time in 1997 (Table 25). Rhizomania caused identifiable yield loss only in the Southern Minnesota Beet Sugar Cooperative in 1998 but it was identified in the Red River Valley in 1999. Rhizomania was named as worst problem by 3% of the respondents in 1998, 2% in 1999 and 2000, by 3% in 2001 and 2002, 2% in 2003, 1% in 2004, 11% in 2005, 3% in 2006, and 2% in 2007 and 2008. Rhizomania resistant varieties continue to be the primary means of control against this pathogen.

The percentage of acreage hand weeded was 62% in 1996, 45% in 1997, 28% in 1998, 25% in 2000, 23% in 2001, 32% in 2002, 30% in 2003, 28% in 2004, 23% in 2005, 28% in 2006 and 2007, and 20% in 2008 (Table 28). Hand-weeded acres are expected to continue decreasing with the use of Roundup Ready sugarbeet.

Averaged over all herbicides, herbicides were band applied to 18%, broadcast applied with a ground sprayer to 76% and broadcast applied by air to 6% of the sugarbeet acreage in 2007 (Table 29). In 1998 40% of the acreage was band treated, 37% was band treated in 2000, and 38% in 2002. Herbicides were applied by air to 17% of the acreage in 1998, 9% in 2000, and 14% in 2002. Nortron was broadcast applied to 22% of conventional sugarbeet acreage and 31% of Roundup Ready sugarbeet acreage in 2008 (Table 29) compared to 18% in 2007, 6% in 2006, 10% in 2005, 16% in 2004, and 9% in 2003. The increase in broadcast applications of Nortron is likely due to a decline in the price of Nortron and the ease of broadcast applications.

The cost of hand weeding and hand thinning varied from zero to greater than $80/Acre in 2008 (Table 30). The most common cost was zero dollars for 62% of the respondents. Zero cost responses were 56% in 2000, 57% in 2001, 48% in 2002, 41% in 2003, 47% in 2004, 57% in 2005, 45% in 2006, and 48% in 2008. When averaged over all survey respondents, the average cost of hand weeding as calculated from Table 24 was $11.32/A in 2008 as compared to $15.50/A in 2007, $14.37/A in 2006, $10.78/A in 2005,

$12.61/A in 2004, $13.75/A in 2003, $15.95/A in 2002, $11.15/A in 2001 and $34/A in 1995. When averaged over growers who reported hand-weeded acres, the average cost of hand weeding in 2008 was $27.41/A. The percentage of respondents who paid nothing for hand labor varied by county from 20% in Richland County to 92% in Norman and Mahnomen Counties.

Row crop cultivation for weed control was used by 95% of the respondents in conventional sugarbeet (Table 31). Only 32% of respondents used cultivation for weed control in Roundup Ready sugarbeet. The average number of cultivations per only conventional sugarbeet field was 1.4 times in 2008 (Table 32), 1.7 times in 2007 and 2006, 1.9 in 2005, 2.0 in 2000, 2.4 in 1998, 3.2 in 1992 and 3.4 in 1987. Row crop cultivation has been reduced by greater than 50% since 1987. The average number of cultivations per only Roundup Ready sugarbeet field was only 0.1 times in 2008 (Table 32). Growers who planted conventational sugarbeets and Roundup Ready sugarbeets in 2008 cultivated the Roundup Ready sugarbeet more often than growers who planted only Roundup Ready sugarbeet.

Seven percent (14 growers) of survey respondents who planted Roundup Ready sugarbeet observed the presence of glyphosate-resistant weeds in Roundup Ready sugarbeet in 2008. Those respondents observing glyphosate resistance listed the following suspected glyphosate-resistant weed species: wild buckwheat (29% of respondents reporting resistance); Roundup Ready canola (29%); lambsquarters (12%); waterhemp (12%); Roundup Ready soybean (6%); ragweed (6%); and barnyardgrass (6%). Common ragweed in North Dakota and common and giant ragweed and waterhemp in Minnesota have been confirmed glyphosate resistant in Roundup Ready soybean and/or corn fields. These glyphosate-resistant species can be found in the central part of the Red River Valley in Traill County, ND and continues south through the valley and into the entire growing region of the Southern Minnesota Beet Sugar Cooperative. Proper management of glyphosate in all Roundup Ready crops will be necessary to maintain long-term effective weed control with glyphosate in Roundup Ready sugarbeet.

TABLE 1. SUMMARY OF ALL HERBICIDES USED IN **ALL SUGARBEET TYPES** REPORTED IN 2008. **239** GROWERS REPORTED ON **111,609** ACRES.

HERBICIDES (IN ORDER OF ACRES TREATED)	NUMBER GROWERS RPTG.	ACRES TREATED % OF TOTAL	Avg no. of appl	% GROWERS REPORTING WEED CONTROL NR*	EXC	GD	FR	PR	% GROWERS REPORTING CROP INJURY NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:													
NORT(PRE/PPI)CONV	71	16.7	1.0	3	32	46	17	1	3	75	23	0	0
DUAL(PRE/PPI)	5	1.5	1.0	0	0	60	40	0	0	20	40	20	20
NORT(PRE/PPI)RR	6	0.9	1.0	0	17	83	0	0	0	83	17	0	0
OTHER SOIL HERB	3	0.5	1.0	0	33	67	0	0	0	67	0	33	0
TOTAL-PPI&PRE	85	19.5	1.0	2	29	51	16	1	2	72	22	2	1
B. POSTEMERGENCE HERBICIDES:													
GLYPHOSATE 1.0 LB	108	52.6	2.0	9	82	8	0	0	9	87	4	0	0
GLYPHOSATE 0.75 LB	55	28.7	2.0	13	82	2	4	0	13	87	0	0	0
PROG+STING+UPB+SLT+OIL	37	27.2	2.2	5	14	62	16	3	5	22	65	8	0
BMIX+STING+UPB+SLT+OIL	30	18.2	2.1	10	10	60	20	0	13	20	57	10	0
GLYPHOSATE 1.12 LB	36	18.0	1.8	6	89	6	0	0	6	92	3	0	0
BNEX+STING+UPB+SLT+OIL	19	13.9	1.7	5	26	58	11	0	5	37	53	5	0
PROG+STING+UPBEET+OIL	28	13.7	1.9	0	11	64	25	0	0	29	61	11	0
BMIX+STNG+UPB+SL+NRT+OIL	19	12.2	1.9	5	21	47	21	5	5	16	68	11	0
PROGRESS+STINGER	19	10.5	2.1	0	11	32	53	5	0	16	74	11	0
SELECT	36	9.5	1.1	6	72	19	3	0	8	89	3	0	0
PROGRESS+STINGER+UPBEET	14	6.5	1.7	0	21	43	29	7	0	36	43	21	0
PROG+ST+UP+SLECT+NRT+OIL	15	6.0	1.8	0	13	53	33	0	0	20	73	7	0
BMIX+STNGER+UPBEET+OIL	17	6.0	1.9	0	6	59	29	6	0	24	76	0	0
GLYPHOSATE OTHER RATE	13	4.8	2.1	0	92	0	0	8	0	100	0	0	0
OTHER COMBINATIONS	6	4.6	1.7	0	33	33	33	0	17	50	33	0	0
BMIX+STNG+UPB+NORT+OIL	9	4.5	2.0	0	11	78	11	0	0	11	78	11	0
PROGRESS	19	4.4	1.2	0	5	53	42	0	0	11	89	0	0
BNEX+STNG+UPB+NORT+OIL	12	4.2	1.5	0	25	58	17	0	0	58	33	8	0
BNX+ST+UPB+SLCT+NORT+OIL	11	4.0	1.5	0	36	55	9	0	0	45	45	9	0
BMIX+STNG+UPB+POAST+OIL	4	3.7	2.8	0	25	50	25	0	0	75	25	0	0
BETANEX+STING+UPBEET+OIL	10	3.6	2.0	0	10	50	40	0	0	40	40	20	0
PROG+STING+UPB+POAST+OIL	6	2.9	2.5	0	17	50	33	0	0	33	67	0	0
PROG+STNG+UPB+NORT+OIL	7	2.7	2.4	0	0	100	0	0	0	43	57	0	0
BMIX+STNG+UPB+ASURE+OIL	1	2.2	4.0	0	0	100	0	0	0	0	100	0	0
BETAMIX+UPBEET	2	2.0	2.0	0	0	50	50	0	0	0	50	50	0
BETANEX+STINGER	2	1.7	2.0	0	50	0	50	0	0	50	0	50	0
BETAMIX+STINGER+UPBEET	5	1.5	1.8	20	0	60	20	0	20	40	40	0	0
BNEX+STING+UPB+POAST+OIL	3	1.4	1.7	0	0	33	67	0	0	67	0	33	0
GLYPHOSATE+STINGER	6	1.2	1.2	17	50	33	0	0	17	83	0	0	0
BETAMIX	4	1.0	1.8	25	25	50	0	0	25	25	50	0	0
BETANEX+UPBEET	5	0.9	1.0	0	40	40	0	20	0	20	80	0	0
BETANEX	3	0.8	1.3	0	33	33	33	0	0	33	67	0	0
BETANEX+STINGER+UPBEET	6	0.7	1.3	0	17	67	17	0	17	17	67	0	0
BMIX+UPBEET+SELECT+OIL	1	0.7	3.0	0	100	0	0	0	0	0	100	0	0
BETAMIX+STINGER	3	0.6	1.7	0	33	33	33	0	0	33	67	0	0
PROGRESS+UPBEET	2	0.5	1.5	0	0	0	100	0	0	0	50	0	50
PROG+STING+UPB+ASUR+OIL	1	0.5	4.0	0	0	100	0	0	0	0	100	0	0
BETANEX+UPBEET+SELECT+OIL	3	0.5	1.0	0	0	67	33	0	0	0	100	0	0
BNEX+STNG+UPB+ASSURE+OIL	1	0.3	1.0	0	0	100	0	0	0	0	100	0	0
ASSURE II	2	0.2	1.0	0	50	0	50	0	0	100	0	0	0
POAST	1	0.1	2.0	0	0	0	100	0	0	0	0	100	0
TOTAL-POST	581	278.9	1.9	5	44	34	15	1	6	54	35	5	0
C. PREEMERGE & LAY-BY HERBICIDES:													
OUTLOOK (LAY-BY)	32	6.6	1.0	0	13	53	25	9	3	63	31	3	0
ROUNDUP (PRE)	9	2.2	1.0	0	100	0	0	0	0	100	0	0	0
DUAL (LAY-BY)	4	0.3	1.0	0	25	0	75	0	0	25	75	0	0
TREFLAN (LAY-BY)	1	0.2	1.0	0	0	100	0	0	0	0	100	0	0
TOTAL-PRE&LAY-BY	46	9.3	1.0	0	30	39	24	7	2	65	30	2	0
D. OTHER WEED CONTROL METHODS:													
ROTARY HOE	35	14.9	1.2	29	14	20	29	9	23	29	49	0	0
WEED PULLER	5	0.3	1.0	60	20	0	20	0	60	20	0	20	0
HARROW	1	0.1	1.0	0	0	0	100	0	100	0	0	0	0
SWATH/FLAIL/MOW	2	0.1	1.0	0	100	0	0	0	0	50	50	0	0
TOTAL-OTHER	43	15.4	1.1	30	19	16	28	7	28	28	42	2	0
TOTAL TREATMTS	755	323.1	1.7	6	40	35	16	2	7	55	34	4	0

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 2. SUMMARY OF ALL HERBICIDES USED BY RESPONDENTS GROWING **ONLY CONVENTIONAL SUGARBEET** IN 2008. **43** GROWERS REPORTED ON **11,472** ACRES.

HERBICIDES (IN ORDER OF ACRES TREATED)	NUMBER GROWERS RPTG.	ACRES TREATED % OF TOTAL	Avg no. of appl	% GROWERS REPORTING WEED CONTROL					% GROWERS REPORTING CROP INJURY				
				NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:													
NORT(PRE/PPI)CONV	17	32.7	1.1	6	24	53	18	0	6	71	24	0	0
DUAL(PRE/PPI)	1	2.5	1.0	0	0	100	0	0	0	100	0	0	0
TOTAL-PPI&PRE	18	35.3	1.1	6	22	56	17	0	6	72	22	0	0
B. POSTEMERGENCE HERBICIDES:													
PRG+STG+UP+SLT+O	9	57.8	1.9	0	44	44	11	0	0	33	67	0	0
BMX+STG+UP+SLT+O	5	34.4	2.2	20	0	60	20	0	20	0	80	0	0
BNX+STG+UP+SLT+O	6	31.9	1.7	17	33	33	17	0	17	0	83	0	0
PROGRESS+STINGER	10	30.1	2.1	0	0	20	80	0	0	10	90	0	0
PR+ST+UP+SL+NR+O	3	26.9	2.0	0	0	33	67	0	0	33	67	0	0
PROGRESS	11	21.1	1.3	0	9	36	55	0	0	0	100	0	0
MX+ST+UP+SL+NR+O	2	20.7	2.5	0	100	0	0	0	0	50	50	0	0
PRG+STNG+UPB+OIL	7	18.6	1.7	0	14	29	57	0	0	29	71	0	0
SELECT	13	17.2	1.1	0	85	15	0	0	0	100	0	0	0
BETANEX+STINGER	2	16.1	2.0	0	50	0	50	0	0	50	0	50	0
BNX+STG+UP+PST+O	2	12.3	2.0	0	0	50	50	0	0	50	0	50	0
PROG+STING+UPBET	5	11.6	1.2	0	40	60	0	0	0	60	40	0	0
BNX+ST+UP+NRT+OL	5	9.9	1.4	0	20	40	40	0	0	40	60	0	0
NX+ST+UP+SL+NR+O	3	8.5	1.3	0	100	0	0	0	0	67	33	0	0
BMX+UP+SELCT+OIL	1	6.5	3.0	0	100	0	0	0	0	0	100	0	0
BETANEX	2	5.5	1.5	0	50	50	0	0	0	50	50	0	0
BETAMIX+UPBEET	1	5.2	1.0	0	0	100	0	0	0	0	100	0	0
BNX+UP+SELCT+OIL	2	2.4	1.0	0	0	50	50	0	0	0	100	0	0
ASSURE II	2	1.9	1.0	0	50	0	50	0	0	100	0	0	0
BNX+STNG+UPB+OIL	1	1.9	1.0	0	0	0	100	0	0	0	100	0	0
PRG+ST+UP+NRT+OL	1	1.9	1.0	0	0	100	0	0	0	100	0	0	0
BNEX+STING+UPBET	2	1.4	1.0	0	50	50	0	0	50	50	0	0	0
PROGRESS+UPBEET	1	1.0	1.0	0	0	0	100	0	0	0	100	0	0
BMX+STNG+UPB+OIL	1	0.5	1.0	0	0	100	0	0	0	0	100	0	0
BETAMIX+STINGER	1	0.5	2.0	0	100	0	0	0	0	100	0	0	0
TOTAL-POST	98	345.9	1.6	2	34	33	32	0	3	37	58	2	0
C. PREEMERGE & LAY-BY HERBICIDES:													
OUTLOOK (LAY-BY)	10	18.5	1.0	0	30	50	20	0	10	40	50	0	0
ROUNDUP (PRE)	2	2.6	1.0	0	100	0	0	0	0	100	0	0	0
DUAL (LAY-BY)	3	2.3	1.0	0	33	0	67	0	0	33	67	0	0
TREFLAN (LAY-BY)	1	2.2	1.0	0	0	100	0	0	0	0	100	0	0
TOTAL-PRE&LAY-BY	16	25.6	1.0	0	38	38	25	0	6	44	50	0	0
D. OTHER WEED CONTROL METHODS:													
ROTARY HOE	8	25.7	1.1	13	38	13	38	0	0	63	38	0	0
WEED PULLER	2	1.3	1.0	50	50	0	0	0	50	50	0	0	0
TOTAL-OTHER	10	27.0	1.1	20	40	10	30	0	10	60	30	0	0
TOTAL TREATMTS	**142**	**433.7**	**1.4**	**4**	**33**	**35**	**29**	**0**	**4**	**44**	**51**	**1**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 3. SUMMARY OF ALL HERBICIDES USED BY RESPONDENTS GROWING **ONLY ROUNDUP READY SUGARBEET** IN 2008. **62** GROWERS REPORTED ON **22,498** ACRES.

HERBICIDES (IN ORDER OF ACRES TREATED)	NUMBER GROWERS RPTG.	ACRES TREATED % OF TOTAL	Avg no. of appl	% GROWERS REPORTING WEED CONTROL					% GROWERS REPORTING CROP INJURY				
				NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:													
GLYP 1.0 LB	31	92.5	2.2	6	81	13	0	0	6	87	6	0	0
GLYP 0.75 LB	22	89.1	2.0	14	86	0	0	0	14	86	0	0	0
GLYP 1.12 LB	13	35.3	1.6	0	92	8	0	0	0	100	0	0	0
GLYP+STINGER	4	4.1	1.0	25	75	0	0	0	25	75	0	0	0
GLYP OTHER LB	1	2.0	2.0	0	100	0	0	0	0	100	0	0	0
TOTAL-POST	71	223.0	1.9	8	85	7	0	0	8	89	3	0	0
C. PREEMERGE & LAY-BY HERBICIDES:													
OUTLOOK (LAY-BY)	2	1.9	1.0	0	0	50	50	0	0	100	0	0	0
TOTAL-PRE&LAY-BY	2	1.9	1.0	0	0	50	50	0	0	100	0	0	0
D. OTHER WEED CONTROL METHODS:													
ROTARY HOE	2	4.0	1.0	50	0	0	50	0	0	0	100	0	0
TOTAL-OTHER	2	4.0	1.0	50	0	0	50	0	0	0	100	0	0
TOTAL TREATMTS	**75**	**228.9**	**1.9**	**9**	**80**	**8**	**3**	**0**	**8**	**87**	**5**	**0**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

Table 4. Acres of sugarbeet and percent of sugarbeet acres treated with herbicide by grower groups in 2008.

Respondents with…[1]	Respondents	Acres	% of Acres treated with herbicide
All Roundup Ready Sugarbeet	196	54,998	216
All Conventional Sugarbeet	177	56,611	394
Only Roundup Ready Sugarbeet	62	22,498	225
Only Conventional Sugarbeet	43	11,472	407
All Sugarbeet	239	111,609	308

[1]Growers with Roundup Ready sugarbeet may or may not have grown conventional sugarbeet. Likewise, growers with conventional sugarbeet may or may not have grown Roundup Ready sugarbeet. Growers with both Roundup Ready and conventional sugarbeet grew at least one acre of each type of sugarbeet.

TABLE 5. TOTAL HERBICIDE USAGE FOR **CASS COUNTY: 11** GROWERS REPORTED ON **4,952** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	1	388	7.8	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PPI&PRE	1	388	7.8	1.0	0	1	0	0	0	0	1	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	5	4381	88.5	1.8	1	4	0	0	0	1	4	0	0	0
GLYPHOSATE 0.75 LB	5	2627	53.0	1.8	2	3	0	0	0	2	3	0	0	0
BMIX+STING+UPB+SLT+OIL	4	2508	50.6	2.3	0	1	3	0	0	1	0	2	1	0
BMIX+STNG+UPB+NORT+OIL	2	275	5.6	1.0	0	1	1	0	0	0	1	1	0	0
BETAMIX	1	266	5.4	2.0	0	0	1	0	0	0	1	0	0	0
GLYPHOSATE 1.12 LB	1	200	4.0	2.0	0	1	0	0	0	0	1	0	0	0
BMIX+STNG+UPB+SL+NRT+OIL	1	142	2.9	1.0	0	1	0	0	0	0	0	1	0	0
GLYPHOSATE+STINGER	1	132	2.7	1.0	0	0	1	0	0	0	1	0	0	0
SELECT	1	100	2.0	1.0	0	0	0	1	0	0	1	0	0	0
TOTAL-POST	21	10631	214.7	1.7	3	11	6	1	0	4	12	4	1	0
C. PREEMERGE & LAY-BY HERBICIDES:														
ROUNDUP (PRE)	1	142	2.9	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	142	2.9	1.0	0	1	0	0	0	0	1	0	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	1	560	11.3	1.0	0	0	0	1	0	0	0	1	0	0
TOTAL-OTHER	1	560	11.3	1.0	0	0	0	1	0	0	0	1	0	0
TOTAL TREATMENTS	**24**	**11721**	**236.7**	**1.6**	**3**	**13**	**6**	**2**	**0**	**4**	**14**	**5**	**1**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 6. TOTAL HERBICIDE USAGE FOR **CHIPPEWA, KANDIYOHI, AND SWIFT COUNTIES: 20** GROWERS REPORTED ON **8,304** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	14	3925	47.3	1.0	1	5	5	3	0	1	9	4	0	0
DUAL(PRE/PPI)	2	990	11.9	1.0	0	0	1	1	0	0	0	1	1	0
NORT(PRE/PPI)RR	2	379	4.6	1.0	0	0	2	0	0	0	2	0	0	0
OTHER SOIL HERB	2	310	3.7	1.0	0	1	1	0	0	0	1	0	1	0
TOTAL-PPI&PRE	20	5604	67.5	1.0	1	6	9	4	0	1	12	5	2	0
B. POSTEMERGENCE HERBICIDES:														
PROGRESS+STINGER	9	8381	100.9	2.4	0	1	4	3	1	0	1	7	1	0
SELECT	9	4819	58.0	1.2	0	6	3	0	0	1	8	0	0	0
PROG+STING+UPBEET+OIL	4	3530	42.5	2.8	0	1	2	1	0	0	1	2	1	0
BETANEX+STINGER	1	1800	21.7	2.0	0	0	0	1	0	0	0	0	1	0
PROGRESS+STINGER+UPBEET	2	1745	21.0	2.0	0	0	1	1	0	0	1	0	1	0
BNEX+STING+UPB+POAST+OIL	1	1350	16.3	3.0	0	0	0	1	0	0	0	0	1	0
PROG+STING+UPB+POAST+OIL	1	1230	14.8	3.0	0	0	1	0	0	0	0	1	0	0
GLYPHOSATE 0.75 LB	6	1159	14.0	2.3	0	6	0	0	0	0	6	0	0	0
PROGRESS	3	1072	12.9	1.3	0	0	2	1	0	0	0	3	0	0
BMIX+STNGER+UPBEET+OIL	1	930	11.2	3.0	0	0	0	1	0	0	0	1	0	0
GLYPHOSATE 1.0 LB	5	761	9.2	1.8	2	3	0	0	0	2	3	0	0	0
OTHER COMBINATIONS	1	750	9.0	2.0	0	0	0	1	0	0	0	1	0	0
PROG+STNG+UPB+NORT+OIL	1	510	6.1	2.0	0	0	1	0	0	0	1	0	0	0
GLYPHOSATE 1.12 LB	1	240	2.9	2.0	0	1	0	0	0	0	1	0	0	0
GLYPHOSATE OTHER RATE	1	160	1.9	4.0	0	1	0	0	0	0	1	0	0	0
BETANEX+STING+UPBEET+OIL	1	150	1.8	2.0	0	0	0	1	0	0	0	1	0	0
ASSURE II	1	80	1.0	1.0	0	1	0	0	0	0	1	0	0	0
BETANEX+STINGER+UPBEET	1	71	0.9	1.0	0	1	0	0	0	1	0	0	0	0
TOTAL-POST	49	28738	346.1	2.0	2	21	14	11	1	4	24	16	5	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	4	1538	18.5	1.0	0	0	2	1	1	0	3	1	0	0
TOTAL-PRE&LAY-BY	4	1538	18.5	1.0	0	0	2	1	1	0	3	1	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	3	1208	14.5	1.0	1	0	0	2	0	1	1	1	0	0
HARROW	1	130	1.6	1.0	0	0	0	1	0	1	0	0	0	0
TOTAL-OTHER	4	1338	16.1	1.0	1	0	0	3	0	2	1	1	0	0
TOTAL TREATMENTS	**77**	**37218**	**448.2**	**1.7**	**4**	**27**	**25**	**19**	**2**	**7**	**40**	**23**	**7**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 7. TOTAL HERBICIDE USAGE FOR **CLAY AND BECKER COUNTIES: 23** GROWERS REPORTED ON **12,852** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	3	570	4.4	1.3	0	3	0	0	0	0	1	2	0	0
TOTAL-PPI&PRE	3	570	4.4	1.3	0	3	0	0	0	0	1	2	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 0.75 LB	6	8124	63.2	2.0	0	5	0	1	0	0	6	0	0	0
GLYPHOSATE 1.0 LB	12	6027	46.9	2.0	2	9	1	0	0	2	9	1	0	0
BMIX+STING+UPB+SLT+OIL	6	3159	24.6	2.3	1	2	3	0	0	1	3	2	0	0
BNEX+STNG+UPB+NORT+OIL	4	3080	24.0	2.0	0	1	3	0	0	0	2	2	0	0
GLYPHOSATE 1.12 LB	1	2600	20.2	2.0	0	1	0	0	0	0	1	0	0	0
BETANEX+STING+UPBEET+OIL	2	2000	15.6	3.0	0	1	1	0	0	0	1	0	1	0
BMIX+STNGER+UPBEET+OIL	7	1394	10.8	1.6	0	1	3	2	1	0	3	4	0	0
GLYPHOSATE OTHER RATE	3	1076	8.4	2.0	0	3	0	0	0	0	3	0	0	0
OTHER COMBINATIONS	1	1000	7.8	2.0	0	0	1	0	0	0	0	1	0	0
PROG+STING+UPBEET+OIL	1	900	7.0	3.0	0	0	1	0	0	0	0	1	0	0
BMIX+STNG+UPB+SL+NRT+OIL	2	605	4.7	1.5	0	0	2	0	0	0	1	1	0	0
BNX+ST+UPB+SLCT+NORT+OIL	2	505	3.9	1.0	0	0	2	0	0	0	1	1	0	0
PROG+STING+UPB+SLT+OIL	2	444	3.5	2.0	0	0	1	0	1	0	0	1	1	0
PROG+STING+UPB+POAST+OIL	1	420	3.3	3.0	0	0	0	1	0	0	1	0	0	0
SELECT	1	300	2.3	1.0	0	1	0	0	0	0	1	0	0	0
GLYPHOSATE+STINGER	1	285	2.2	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	52	31919	248.4	2.0	3	25	18	4	2	3	33	14	2	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	3	280	2.2	1.0	0	1	2	0	0	0	3	0	0	0
ROUNDUP (PRE)	2	200	1.6	1.0	0	2	0	0	0	0	2	0	0	0
TOTAL-PRE&LAY-BY	5	480	3.7	1.0	0	3	2	0	0	0	5	0	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	4	1509	11.7	1.3	1	1	1	1	0	1	1	2	0	0
TOTAL-OTHER	4	1509	11.7	1.3	1	1	1	1	0	1	1	2	0	0
TOTAL TREATMENTS	**64**	**34478**	**268.3**	**1.8**	**4**	**32**	**21**	**5**	**2**	**4**	**40**	**18**	**2**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 8. TOTAL HERBICIDE USAGE FOR **GRAND FORKS COUNTY: 12** GROWERS REPORTED ON **5,106** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	3	410	8.0	1.0	0	0	2	1	0	0	3	0	0	0
TOTAL-PPI&PRE	3	410	8.0	1.0	0	0	2	1	0	0	3	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	6	3021	59.2	2.2	0	5	1	0	0	0	5	1	0	0
BMIX+STING+UPB+SLT+OIL	2	2985	58.5	3.5	0	0	2	0	0	0	1	1	0	0
BMIX+STNG+UPB+SL+NRT+OIL	1	1950	38.2	3.0	0	0	1	0	0	0	1	0	0	0
PROG+STING+UPBEET+OIL	3	1735	34.0	2.0	0	0	1	2	0	0	0	3	0	0
GLYPHOSATE 0.75 LB	3	1623	31.8	2.3	0	3	0	0	0	0	3	0	0	0
GLYPHOSATE 1.12 LB	2	956	18.7	2.0	0	2	0	0	0	0	2	0	0	0
SELECT	1	900	17.6	2.0	0	1	0	0	0	0	1	0	0	0
PROG+STING+UPB+SLT+OIL	1	900	17.6	3.0	0	0	0	1	0	0	0	1	0	0
BNEX+STNG+UPB+NORT+OIL	2	385	7.5	1.5	0	0	0	2	0	0	0	2	0	0
PROG+ST+UP+SLECT+NRT+OIL	1	168	3.3	4.0	0	0	0	1	0	0	0	1	0	0
TOTAL-POST	22	14623	286.4	2.4	0	11	5	6	0	0	13	9	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
ROUNDUP (PRE)	2	1100	21.5	1.0	0	2	0	0	0	0	2	0	0	0
OUTLOOK (LAY-BY)	1	430	8.4	1.0	0	0	0	0	1	0	0	1	0	0
TOTAL-PRE&LAY-BY	3	1530	30.0	1.0	0	2	0	0	1	0	2	1	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	2	1560	30.6	1.0	1	0	0	1	0	1	1	0	0	0
WEED PULLER	1	2	0.0	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	3	1562	30.6	1.0	2	0	0	1	0	2	1	0	0	0
TOTAL TREATMENTS	**31**	**18125**	**355.0**	**2.0**	**2**	**13**	**7**	**8**	**1**	**2**	**19**	**10**	**0**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 9. TOTAL HERBICIDE USAGE FOR **KITTSON COUNTY: 11** GROWERS REPORTED ON **5,910** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	1	350	5.9	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-PPI&PRE	1	350	5.9	1.0	0	0	1	0	0	0	1	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 0.75 LB	5	7034	119.0	2.0	1	4	0	0	0	1	4	0	0	0
PROG+STING+UPB+SLT+OIL	4	2005	33.9	2.0	1	1	2	0	0	1	1	2	0	0
GLYPHOSATE 1.12 LB	2	1400	23.7	2.0	1	1	0	0	0	1	1	0	0	0
GLYPHOSATE 1.0 LB	2	720	12.2	2.0	0	2	0	0	0	0	2	0	0	0
PROG+STING+UPBEET+OIL	1	700	11.8	1.0	0	0	1	0	0	0	0	1	0	0
BNEX+STING+UPB+SLT+OIL	1	700	11.8	1.0	0	0	1	0	0	0	0	1	0	0
BMIX+STNG+UPB+SL+NRT+OIL	1	240	4.1	1.0	1	0	0	0	0	1	0	0	0	0
GLYPHOSATE+STINGER	1	232	3.9	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-POST	17	13031	220.5	1.8	5	8	4	0	0	5	8	4	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	1	625	10.6	1.0	1	0	0	0	0	0	0	1	0	0
TOTAL-OTHER	1	625	10.6	1.0	1	0	0	0	0	0	0	1	0	0
TOTAL TREATMENTS	**19**	**14006**	**237.0**	**1.7**	**6**	**8**	**5**	**0**	**0**	**5**	**9**	**5**	**0**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 10. TOTAL HERBICIDE USAGE FOR **MARSHALL COUNTY: 10** GROWERS REPORTED ON **8,877** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	2	740	8.3	1.0	0	1	0	1	0	0	1	1	0	0
TOTAL-PPI&PRE	2	740	8.3	1.0	0	1	0	1	0	0	1	1	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	6	8104	91.3	2.2	0	6	0	0	0	0	6	0	0	0
PROG+STING+UPB+SLT+OIL	4	7534	84.9	2.5	0	0	2	2	0	0	1	3	0	0
OTHER COMBINATIONS	1	2400	27.0	2.0	0	0	0	1	0	0	1	0	0	0
BMIX+STING+UPB+SLT+OIL	2	2175	24.5	2.0	0	0	0	2	0	0	0	2	0	0
GLYPHOSATE OTHER RATE	1	870	9.8	3.0	0	1	0	0	0	0	1	0	0	0
GLYPHOSATE 0.75 LB	1	500	5.6	2.0	1	0	0	0	0	1	0	0	0	0
PROGRESS+UPBEET	1	480	5.4	2.0	0	0	0	1	0	0	0	0	0	1
PROG+ST+UP+SLECT+NRT+OIL	1	450	5.1	3.0	0	0	1	0	0	0	0	1	0	0
BNEX+STING+UPB+SLT+OIL	1	400	4.5	1.0	0	0	1	0	0	0	1	0	0	0
PROGRESS+STINGER+UPBEET	2	360	4.1	2.0	0	0	1	1	0	0	1	0	1	0
PROG+STING+UPBEET+OIL	1	265	3.0	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+UPBEET+SELECT+OIL	1	265	3.0	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+UPBEET	1	158	1.8	1.0	0	0	0	0	1	0	0	1	0	0
SELECT	1	140	1.6	1.0	0	1	0	0	0	0	1	0	0	0
BETANEX+STINGER+UPBEET	1	90	1.0	1.0	0	0	1	0	0	0	1	0	0	0
POAST	1	80	0.9	2.0	0	0	0	1	0	0	0	0	1	0
TOTAL-POST	26	24271	273.4	2.0	1	8	8	8	1	1	13	9	2	1
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	4	1850	20.8	1.3	1	0	1	2	0	0	0	4	0	0
SWATH/FLAIL/MOW	1	30	0.3	1.0	0	1	0	0	0	0	0	1	0	0
TOTAL-OTHER	5	1880	21.2	1.2	1	1	1	2	0	0	0	5	0	0
TOTAL TREATMENTS	**33**	**26891**	**302.9**	**1.8**	**2**	**10**	**9**	**11**	**1**	**1**	**14**	**15**	**2**	**1**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 11. TOTAL HERBICIDE USAGE FOR **NORMAN AND MAHNOMEN COUNTIES: 13** GROWERS REPORTED ON **6,294** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	4	1548	24.6	1.0	0	0	3	1	0	0	4	0	0	0
TOTAL-PPI&PRE	4	1548	24.6	1.0	0	0	3	1	0	0	4	0	0	0
B. POSTEMERGENCE HERBICIDES:														
BNEX+STING+UPB+SLT+OIL	3	7000	111.2	2.0	0	2	1	0	0	0	2	1	0	0
BMIX+STING+UPB+SLT+OIL	3	2887	45.9	1.3	0	0	3	0	0	0	0	3	0	0
GLYPHOSATE 1.0 LB	6	2072	32.9	1.7	1	3	2	0	0	1	5	0	0	0
PROG+STING+UPB+SLT+OIL	3	2050	32.6	1.3	0	0	3	0	0	0	0	3	0	0
GLYPHOSATE 0.75 LB	4	1460	23.2	1.8	0	3	0	1	0	0	4	0	0	0
GLYPHOSATE OTHER RATE	2	900	14.3	2.0	0	2	0	0	0	0	2	0	0	0
PROG+STNG+UPB+NORT+OIL	2	762	12.1	2.0	0	0	2	0	0	0	1	1	0	0
PROG+ST+UP+SLECT+NRT+OIL	2	749	11.9	1.5	0	0	1	1	0	0	1	0	1	0
BMIX+STNGER+UPBEET+OIL	1	600	9.5	2.0	0	0	0	1	0	0	0	1	0	0
BETAMIX+STINGER+UPBEET	1	280	4.4	2.0	0	0	1	0	0	0	1	0	0	0
GLYPHOSATE 1.12 LB	1	212	3.4	1.0	0	1	0	0	0	0	1	0	0	0
PROGRESS+STINGER+UPBEET	1	200	3.2	1.0	0	0	0	1	0	0	0	1	0	0
BNEX+STNG+UPB+NORT+OIL	1	150	2.4	1.0	0	1	0	0	0	0	1	0	0	0
SELECT	1	140	2.2	1.0	0	1	0	0	0	0	1	0	0	0
BETANEX+STINGER+UPBEET	1	130	2.1	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+STING+UPBEET+OIL	1	100	1.6	1.0	0	0	1	0	0	0	1	0	0	0
BNX+ST+UPB+SLCT+NORT+OIL	1	87	1.4	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	34	19779	314.3	1.6	1	14	15	4	0	1	21	11	1	0
C. PREEMERGE & LAY-BY HERBICIDES:														
ROUNDUP (PRE)	2	300	4.8	1.0	0	2	0	0	0	0	2	0	0	0
OUTLOOK (LAY-BY)	2	215	3.4	1.0	0	1	0	1	0	0	2	0	0	0
DUAL (LAY-BY)	1	97	1.5	1.0	0	0	0	1	0	0	0	1	0	0
TOTAL-PRE&LAY-BY	5	612	9.7	1.0	0	3	0	2	0	0	4	1	0	0
D. OTHER WEED CONTROL METHODS:														
SWATH/FLAIL/MOW	1	100	1.6	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-OTHER	1	100	1.6	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL TREATMENTS	**44**	**22039**	**350.2**	**1.4**	**1**	**18**	**18**	**7**	**0**	**1**	**30**	**12**	**1**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 12. TOTAL HERBICIDE USAGE FOR **PEMBINA COUNTY: 12** GROWERS REPORTED ON **5,012** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	1	80	1.6	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-PPI&PRE	1	80	1.6	1.0	0	0	1	0	0	0	1	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.12 LB	6	4110	82.0	1.8	0	5	1	0	0	0	6	0	0	0
GLYPHOSATE 1.0 LB	5	3700	73.8	1.8	0	4	1	0	0	0	5	0	0	0
BETAMIX+UPBEET	1	1611	32.1	3.0	0	0	0	1	0	0	0	0	1	0
PROG+STING+UPB+SLT+OIL	2	820	16.4	1.5	0	0	2	0	0	0	1	1	0	0
PROG+STING+UPB+POAST+OIL	1	818	16.3	2.0	0	0	1	0	0	0	0	1	0	0
GLYPHOSATE 0.75 LB	3	610	12.2	2.0	0	3	0	0	0	0	3	0	0	0
PROG+STING+UPBEET+OIL	1	440	8.8	2.0	0	0	1	0	0	0	0	1	0	0
BETAMIX+STINGER+UPBEET	1	400	8.0	1.0	0	0	1	0	0	0	0	1	0	0
PROG+STNG+UPB+NORT+OIL	1	300	6.0	1.0	0	0	1	0	0	0	0	1	0	0
SELECT	1	220	4.4	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+UPBEET	1	160	3.2	1.0	0	0	1	0	0	0	0	1	0	0
TOTAL-POST	23	13189	263.1	1.7	0	12	10	1	0	0	15	7	1	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	1	220	4.4	1.0	0	0	1	0	0	0	0	1	0	0
TOTAL-PRE&LAY-BY	1	220	4.4	1.0	0	0	1	0	0	0	0	1	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	4	2257	45.0	1.3	3	0	0	0	1	3	1	0	0	0
TOTAL-OTHER	4	2257	45.0	1.3	3	0	0	0	1	3	1	0	0	0
TOTAL TREATMENTS	**29**	**15746**	**314.2**	**1.6**	**3**	**12**	**12**	**1**	**1**	**3**	**17**	**8**	**1**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 13. TOTAL HERBICIDE USAGE FOR **POLK COUNTY: 40** GROWERS REPORTED ON **22,308** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	14	4087	18.3	1.0	1	5	5	3	0	1	12	1	0	0
NORT(PRE/PPI)RR	1	10	0.0	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PPI&PRE	15	4097	18.4	1.0	1	6	5	3	0	1	13	1	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	18	13273	59.5	2.0	2	14	2	0	0	2	15	1	0	0
PRG+STG+UP+SLT+O	12	7234	32.4	2.3	1	3	8	0	0	1	2	9	0	0
GLYPHOSATE 1.12 LB	9	7023	31.5	2.0	1	7	1	0	0	1	8	0	0	0
BMIX+STNG+UPB+SL+NRT+OIL	5	6416	28.8	2.6	0	2	2	1	0	0	1	4	0	0
BNEX+STING+UPB+SLT+OIL	9	5406	24.2	1.8	1	2	5	1	0	1	2	6	0	0
BMIX+STING+UPB+SLT+OIL	4	2980	13.4	2.0	1	0	3	0	0	1	1	2	0	0
BMIX+STNG+UPB+POAST+OIL	2	2860	12.8	2.5	0	1	1	0	0	0	2	0	0	0
PROGRESS+STINGER+UPBEET	5	2288	10.3	1.4	0	3	1	1	0	0	2	3	0	0
PROG+ST+UP+SLECT+NRT+OIL	6	2257	10.1	1.7	0	2	3	1	0	0	1	5	0	0
BNX+ST+UPB+SLCT+NORT+OIL	3	2184	9.8	2.0	0	1	2	0	0	0	2	1	0	0
PROGRESS	3	1505	6.7	1.0	0	0	3	0	0	0	1	2	0	0
GLYPHOSATE 0.75 LB	5	1082	4.9	2.2	0	5	0	0	0	0	5	0	0	0
SELECT	4	1076	4.8	1.0	1	2	1	0	0	1	3	0	0	0
GLYPHOSATE OTHER RATE	2	870	3.9	1.5	0	2	0	0	0	0	2	0	0	0
BMX+UP+SELCT+OIL	1	750	3.4	3.0	0	1	0	0	0	0	0	1	0	0
OTHER COMBINATIONS	1	671	3.0	1.0	0	1	0	0	0	0	1	0	0	0
BETANEX+UPBEET	2	600	2.7	1.0	0	1	1	0	0	0	1	1	0	0
BETAMIX+UPBEET	1	600	2.7	1.0	0	0	1	0	0	0	0	1	0	0
BMIX+STNGER+UPBEET+OIL	1	600	2.7	2.0	0	0	1	0	0	0	0	1	0	0
PROG+STNG+UPB+NORT+OIL	1	600	2.7	4.0	0	0	1	0	0	0	0	1	0	0
PROG+STING+UPBEET+OIL	3	517	2.3	1.0	0	0	2	1	0	0	0	3	0	0
BETANEX+STING+UPBEET+OIL	2	516	2.3	1.0	0	0	1	1	0	0	1	1	0	0
BETAMIX	1	450	2.0	1.0	0	1	0	0	0	0	0	1	0	0
BETAMIX+STINGER+UPBEET	1	450	2.0	1.0	0	0	1	0	0	0	1	0	0	0
BNEX+STNG+UPB+NORT+OIL	1	380	1.7	1.0	0	1	0	0	0	0	1	0	0	0
BNEX+STNG+UPB+ASSURE+OIL	1	360	1.6	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+UPBEET+SELECT+OIL	1	213	1.0	1.0	0	0	0	1	0	0	0	1	0	0
TOTAL-POST	104	63161	283.1	1.8	7	49	41	7	0	7	52	45	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	5	921	4.1	1.0	0	2	1	2	0	1	3	1	0	0
TREFLAN (LAY-BY)	1	250	1.1	1.0	0	0	1	0	0	0	0	1	0	0
TOTAL-PRE&LAY-BY	6	1171	5.2	1.0	0	2	2	2	0	1	3	2	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	7	3421	15.3	1.3	1	3	2	1	0	1	3	3	0	0
WEED PULLER	1	147	0.7	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-OTHER	8	3568	16.0	1.3	1	4	2	1	0	1	4	3	0	0
TOTAL TREATMENTS	**133**	**71997**	**322.7**	**1.7**	**9**	**61**	**50**	**13**	**0**	**10**	**72**	**51**	**0**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 14. TOTAL HERBICIDE USAGE FOR **RENVILLE, FAIRBAULT, LAC QUI PARLE, REDWOOD, SIBLEY, STEARNS, AND YELLOW MEDICINE COUNTIES: 27** GROWERS REPORTED ON **5,467** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	11	2686	49.1	1.2	0	3	6	1	1	0	7	4	0	0
DUAL(PRE/PPI)	2	512	9.4	1.0	0	0	2	0	0	0	1	1	0	0
TOTAL-PPI&PRE	13	3198	58.5	1.2	0	3	8	1	1	0	8	5	0	0
B. POSTEMERGENCE HERBICIDES:														
PROGRESS+STINGER	9	2827	51.7	1.8	0	0	2	7	0	0	1	7	1	0
BMIX+STNGER+UPBEET+OIL	3	1653	30.2	2.3	0	0	2	1	0	0	1	2	0	0
PROGRESS	10	1575	28.8	1.3	0	1	3	6	0	0	0	10	0	0
PROGRESS+STINGER+UPBEET	2	1357	24.8	1.5	0	0	2	0	0	0	1	1	0	0
GLYPHOSATE 1.0 LB	11	1093	20.0	2.2	0	11	0	0	0	0	11	0	0	0
SELECT	9	1032	18.9	1.1	1	8	0	0	0	1	8	0	0	0
BETANEX	3	855	15.6	1.3	0	1	1	1	0	0	1	2	0	0
BMIX+STNG+UPB+POAST+OIL	1	810	14.8	3.0	0	0	1	0	0	0	0	1	0	0
PROG+STING+UPBEET+OIL	2	720	13.2	1.5	0	0	1	1	0	0	1	0	1	0
BMIX+STING+UPB+SLT+OIL	2	531	9.7	1.0	1	0	1	0	0	1	0	1	0	0
BETAMIX+STINGER	2	452	8.3	2.0	0	1	0	1	0	0	1	1	0	0
PROG+STING+UPB+SLT+OIL	1	396	7.2	2.0	0	0	0	1	0	0	0	1	0	0
BMIX+STNG+UPB+SL+NRT+OIL	2	362	6.6	1.0	0	0	2	0	0	0	0	2	0	0
BETANEX+STINGER+UPBEET	1	280	5.1	2.0	0	0	1	0	0	0	0	1	0	0
BETANEX+STING+UPBEET+OIL	1	280	5.1	2.0	0	0	0	1	0	0	0	1	0	0
GLYPHOSATE 0.75 LB	2	205	3.7	1.5	1	0	1	0	0	1	1	0	0	0
ASSURE II	1	140	2.6	1.0	0	0	0	1	0	0	1	0	0	0
GLYPHOSATE 1.12 LB	2	132	2.4	2.0	0	2	0	0	0	0	2	0	0	0
PROGRESS+UPBEET	1	112	2.0	1.0	0	0	0	1	0	0	0	1	0	0
BETANEX+UPBEET+SELECT+OIL	1	68	1.2	1.0	0	0	1	0	0	0	0	1	0	0
BNEX+STING+UPB+POAST+OIL	1	60	1.1	1.0	0	0	1	0	0	0	1	0	0	0
BNEX+STNG+UPB+NORT+OIL	1	60	1.1	1.0	0	0	1	0	0	0	1	0	0	0
BNX+ST+UPB+SLCT+NORT+OIL	1	53	1.0	1.0	0	1	0	0	0	0	0	1	0	0
BETANEX+STINGER	1	52	1.0	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	70	15105	276.3	1.6	3	26	20	21	0	3	32	33	2	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	7	1177	21.5	1.0	0	0	6	1	0	0	3	4	0	0
DUAL (LAY-BY)	3	268	4.9	1.0	0	1	0	2	0	0	1	2	0	0
TOTAL-PRE&LAY-BY	10	1445	26.4	1.0	0	1	6	3	0	0	4	6	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	4	916	16.8	1.0	0	0	3	0	1	0	1	3	0	0
TOTAL-OTHER	4	916	16.8	1.0	0	0	3	0	1	0	1	3	0	0
TOTAL TREATMENTS	**97**	**20664**	**378.0**	**1.5**	**3**	**30**	**37**	**25**	**2**	**3**	**45**	**47**	**2**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 15. TOTAL HERBICIDE USAGE FOR **RICHLAND COUNTY: 10** GROWERS REPORTED ON **6,619** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	5	1119	16.9	1.0	0	2	3	0	0	0	5	0	0	0
NORT(PRE/PPI)RR	3	572	8.6	1.0	0	0	3	0	0	0	2	1	0	0
DUAL(PRE/PPI)	1	146	2.2	1.0	0	0	0	1	0	0	0	0	0	1
TOTAL-PPI&PRE	9	1837	27.8	1.0	0	2	6	1	0	0	7	1	0	1
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	5	3158	47.7	2.0	0	5	0	0	0	0	4	1	0	0
PROG+STING+UPB+SLT+OIL	1	3000	45.3	2.0	0	0	1	0	0	0	1	0	0	0
BMIX+STING+UPB+SLT+OIL	3	1739	26.3	2.0	0	0	1	2	0	0	0	2	1	0
BMIX+STNG+UPB+NORT+OIL	2	1588	24.0	2.0	0	0	1	1	0	0	0	2	0	0
BMIX+STNG+UPB+SL+NRT+OIL	3	1232	18.6	1.7	0	0	1	2	0	0	0	3	0	0
PROG+STING+UPBEET+OIL	2	1221	18.4	1.5	0	1	1	0	0	0	1	1	0	0
GLYPHOSATE OTHER RATE	2	676	10.2	1.5	0	2	0	0	0	0	2	0	0	0
PROGRESS	2	569	8.6	1.0	0	0	1	1	0	0	0	2	0	0
BNEX+STING+UPB+SLT+OIL	2	563	8.5	1.5	0	0	1	1	0	0	1	1	0	0
GLYPHOSATE 1.12 LB	3	556	8.4	1.7	0	3	0	0	0	0	2	1	0	0
PROG+STNG+UPB+NORT+OIL	1	549	8.3	3.0	0	0	1	0	0	0	1	0	0	0
GLYPHOSATE 0.75 LB	2	500	7.6	1.5	0	2	0	0	0	0	2	0	0	0
BNX+ST+UPB+SLCT+NORT+OIL	1	494	7.5	1.0	0	0	0	1	0	0	0	1	0	0
SELECT	2	355	5.4	1.0	0	1	1	0	0	0	2	0	0	0
BMIX+STNGER+UPBEET+OIL	1	351	5.3	3.0	0	0	1	0	0	0	0	1	0	0
PROG+ST+UP+SLECT+NRT+OIL	1	183	2.8	1.0	0	0	1	0	0	0	1	0	0	0
OTHER COMBINATIONS	1	170	2.6	1.0	0	1	0	0	0	0	1	0	0	0
BNEX+STNG+UPB+NORT+OIL	1	139	2.1	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-POST	35	17043	257.5	1.7	0	15	12	8	0	0	19	15	1	0
C. PREEMERGE & LAY-BY HERBICIDES:														
ROUNDUP (PRE)	1	300	4.5	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	300	4.5	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL TREATMTS	**45**	**19180**	**289.8**	**1.5**	**0**	**18**	**18**	**9**	**0**	**0**	**27**	**16**	**1**	**1**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 16. TOTAL HERBICIDE USAGE FOR **TRAILL COUNTY: 10** GROWERS REPORTED ON **4,279** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	1	300	7.0	1.0	0	0	0	1	0	0	0	1	0	0
TOTAL-PPI&PRE	1	300	7.0	1.0	0	0	0	1	0	0	0	1	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	6	3867	90.4	2.3	1	5	0	0	0	1	5	0	0	0
PROG+ST+UP+SLECT+NRT+OIL	3	2588	60.5	1.7	0	0	1	2	0	0	0	3	0	0
PROG+STING+UPB+SLT+OIL	2	1700	39.7	2.5	0	0	0	2	0	0	0	0	2	0
BNEX+STING+UPB+SLT+OIL	1	1200	28.0	4.0	0	1	0	0	0	0	0	1	0	0
BMIX+STING+UPB+SLT+OIL	2	1035	24.2	3.5	0	0	0	2	0	0	1	1	0	0
PROG+STING+UPBEET+OIL	2	816	19.1	2.0	0	0	0	2	0	0	0	1	1	0
GLYPHOSATE 0.75 LB	1	692	16.2	2.0	0	1	0	0	0	0	1	0	0	0
GLYPHOSATE+STINGER	2	416	9.7	1.0	0	2	0	0	0	0	2	0	0	0
GLYPHOSATE 1.12 LB	2	412	9.6	1.0	0	2	0	0	0	0	2	0	0	0
GLYPHOSATE OTHER RATE	1	152	3.6	2.0	0	1	0	0	0	0	1	0	0	0
OTHER COMBINATIONS	1	100	2.3	2.0	0	0	1	0	0	1	0	0	0	0
TOTAL-POST	23	12978	303.3	2.1	1	12	2	8	0	2	12	6	3	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	2	945	22.1	1.0	0	0	2	0	0	0	1	1	0	0
TOTAL-PRE&LAY-BY	2	945	22.1	1.0	0	0	2	0	0	0	1	1	0	0
D. OTHER WEED CONTROL METHODS:														
WEED PULLER	1	15	0.4	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	1	15	0.4	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL TREATMENTS	**27**	**14238**	**332.7**	**2.0**	**2**	**12**	**4**	**9**	**0**	**3**	**13**	**8**	**3**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 17. TOTAL HERBICIDE USAGE FOR **TRAVERSE, BIG STONE, GRANT, AND STEVENS COUNTIES: 6** GROWERS REPORTED ON **2,692** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
OTHER SOIL HERB	1	230	8.5	1.0	0	0	1	0	0	0	1	0	0	0
NORT(PRE/PPI)CONV	1	114	4.2	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PPI&PRE	2	344	12.8	1.0	0	1	1	0	0	0	2	0	0	0
B. POSTEMERGENCE HERBICIDES:														
PROG+STING+UPBEET+OIL	2	1728	64.2	3.0	0	0	2	0	0	0	2	0	0	0
GLYPHOSATE 1.0 LB	2	980	36.4	2.0	1	1	0	0	0	1	1	0	0	0
GLYPHOSATE 0.75 LB	2	763	28.3	1.5	1	1	0	0	0	1	1	0	0	0
BNX+ST+UPB+SLCT+NORT+OIL	1	720	26.7	2.0	0	1	0	0	0	0	0	1	0	0
BMIX+STNG+UPB+SL+NRT+OIL	1	720	26.7	2.0	0	1	0	0	0	0	0	1	0	0
PROG+STING+UPB+POAST+OIL	2	638	23.7	2.0	0	1	1	0	0	0	1	1	0	0
GLYPHOSATE OTHER RATE	1	600	22.3	2.0	0	0	0	0	1	0	1	0	0	0
BETAMIX+STINGER+UPBEET	1	480	17.8	4.0	1	0	0	0	0	1	0	0	0	0
PROGRESS+STINGER	1	460	17.1	2.0	0	1	0	0	0	0	1	0	0	0
BETAMIX	2	350	13.0	2.0	1	0	1	0	0	1	0	1	0	0
PROGRESS	1	230	8.5	1.0	0	0	1	0	0	0	1	0	0	0
BETAMIX+STINGER	1	230	8.5	1.0	0	0	1	0	0	0	0	1	0	0
SELECT	1	200	7.4	1.0	0	1	0	0	0	0	1	0	0	0
GLYPHOSATE 1.12 LB	1	80	3.0	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	19	8179	303.8	2.0	4	8	6	0	1	4	10	5	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	2	590	21.9	1.0	0	0	2	0	0	0	2	0	0	0
TOTAL-PRE&LAY-BY	2	590	21.9	1.0	0	0	2	0	0	0	2	0	0	0
D. OTHER WEED CONTROL METHODS:														
WEED PULLER	1	60	2.2	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	1	60	2.2	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL TREATMENTS	**24**	**9173**	**340.8**	**1.8**	**5**	**9**	**9**	**0**	**1**	**5**	**14**	**5**	**0**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 18. TOTAL HERBICIDE USAGE FOR **WALSH COUNTY: 19** GROWERS REPORTED ON **5,958** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	3	328	5.5	1.0	0	0	2	1	0	0	3	0	0	0
TOTAL-PPI&PRE	3	328	5.5	1.0	0	0	2	1	0	0	3	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	10	3574	60.0	2.0	0	9	1	0	0	0	10	0	0	0
GLYPHOSATE 0.75 LB	5	3300	55.4	1.8	1	4	0	0	0	1	4	0	0	0
BMIX+STNG+UPB+ASURE+OIL	1	2400	40.3	4.0	0	0	1	0	0	0	0	1	0	0
GLYPHOSATE 1.12 LB	3	1360	22.8	1.7	0	3	0	0	0	0	3	0	0	0
PROGRESS+STINGER+UPBEET	1	1224	20.5	4.0	0	0	0	0	1	0	0	0	1	0
BETANEX+STING+UPBEET+OIL	2	886	14.9	3.0	0	0	1	1	0	0	1	0	1	0
BMIX+STNGER+UPBEET+OIL	2	684	11.5	2.0	0	0	2	0	0	0	0	2	0	0
PROG+STING+UPB+ASUR+OIL	1	580	9.7	4.0	0	0	1	0	0	0	0	1	0	0
BMIX+STING+UPB+SLT+OIL	2	310	5.2	1.5	0	0	2	0	0	0	0	1	1	0
GLYPHOSATE+STINGER	1	290	4.9	2.0	0	0	1	0	0	0	1	0	0	0
PROG+STING+UPB+SLT+OIL	2	285	4.8	2.5	0	0	2	0	0	0	0	2	0	0
BNEX+STING+UPB+SLT+OIL	1	160	2.7	1.0	0	0	1	0	0	0	0	0	1	0
PROG+STING+UPB+POAST+OIL	1	135	2.3	3.0	0	0	0	1	0	0	0	1	0	0
PROG+STING+UPBEET+OIL	2	70	1.2	1.0	0	0	2	0	0	0	0	2	0	0
BETANEX+UPBEET	1	60	1.0	1.0	0	1	0	0	0	0	0	1	0	0
TOTAL-POST	35	15318	257.1	2.1	1	17	14	2	1	1	19	11	4	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	2	678	11.4	1.0	0	0	1	1	0	0	2	0	0	0
ROUNDUP (PRE)	1	364	6.1	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	3	1042	17.5	1.0	0	1	1	1	0	0	3	0	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	3	1140	19.1	1.3	0	1	0	2	0	0	2	1	0	0
TOTAL-OTHER	3	1140	19.1	1.3	0	1	0	2	0	0	2	1	0	0
TOTAL TREATMENTS	**44**	**17828**	**299.2**	**1.9**	**1**	**19**	**17**	**6**	**1**	**1**	**27**	**12**	**4**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 19. TOTAL HERBICIDE USAGE FOR **WILKIN AND OTTERTAIL COUNTY: 13** GROWERS REPORTED ON **5,929** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORT(PRE/PPI)CONV	7	1941	32.7	1.0	0	2	5	0	0	0	4	3	0	0
TOTAL-PPI&PRE	7	1941	32.7	1.0	0	2	5	0	0	0	4	3	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYPHOSATE 1.0 LB	9	3971	67.0	2.0	0	8	1	0	0	0	9	0	0	0
BMIX+STNG+UPB+NORT+OIL	5	3170	53.5	2.4	0	0	5	0	0	0	0	4	1	0
PROG+STING+UPBEET+OIL	4	2636	44.5	2.0	0	1	3	0	0	0	3	1	0	0
GLYPHOSATE 0.75 LB	4	2323	39.2	2.0	0	4	0	0	0	0	4	0	0	0
PROG+STING+UPB+SLT+OIL	2	1967	33.2	2.5	0	1	1	0	0	0	1	1	0	0
SELECT	5	1331	22.4	1.0	0	4	1	0	0	0	5	0	0	0
GLYPHOSATE 1.12 LB	2	852	14.4	2.0	0	2	0	0	0	0	2	0	0	0
BMIX+STNG+UPB+SL+NRT+OIL	2	578	9.7	1.0	0	0	1	1	0	0	0	1	1	0
BNX+ST+UPB+SLCT+NORT+OIL	2	474	8.0	1.5	0	0	2	0	0	0	1	0	1	0
BMIX+STNG+UPB+POAST+OIL	1	450	7.6	3.0	0	0	0	1	0	0	1	0	0	0
BNEX+STNG+UPB+NORT+OIL	2	441	7.4	1.5	0	0	2	0	0	0	1	0	1	0
BMIX+STNGER+UPBEET+OIL	1	430	7.3	1.0	0	0	1	0	0	0	0	1	0	0
PROG+STNG+UPB+NORT+OIL	1	300	5.1	3.0	0	0	1	0	0	0	0	1	0	0
PROG+ST+UP+SLECT+NRT+OIL	1	250	4.2	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+STINGER+UPBEET	2	190	3.2	1.5	0	0	1	1	0	0	0	2	0	0
BNEX+STING+UPB+POAST+OIL	1	150	2.5	1.0	0	0	0	1	0	0	1	0	0	0
BNEX+STING+UPB+SLT+OIL	1	117	2.0	1.0	0	0	1	0	0	0	1	0	0	0
BETAMIX+STINGER+UPBEET	1	80	1.3	1.0	0	0	0	1	0	0	0	1	0	0
PROGRESS+STINGER+UPBEET	1	80	1.3	1.0	0	0	1	0	0	0	0	1	0	0
BETANEX+STING+UPBEET+OIL	1	80	1.3	1.0	0	0	1	0	0	0	0	1	0	0
TOTAL-POST	48	19870	335.1	1.8	0	20	23	5	0	0	29	15	4	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	2	268	4.5	1.0	0	0	0	2	0	0	1	1	0	0
TOTAL-PRE&LAY-BY	2	268	4.5	1.0	0	0	0	2	0	0	1	1	0	0
D. OTHER WEED CONTROL METHODS:														
ROTARY HOE	2	1555	26.2	1.0	1	0	0	0	1	1	0	1	0	0
WEED PULLER	1	130	2.2	1.0	0	0	0	1	0	0	0	0	1	0
TOTAL-OTHER	3	1685	28.4	1.0	1	0	0	1	1	1	0	1	1	0
TOTAL TREATMENTS	**60**	**23764**	**400.8**	**1.6**	**1**	**22**	**28**	**8**	**1**	**1**	**34**	**20**	**5**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

TABLE 20. TOTAL HERBICIDE USAGE FOR **NO RESPONSE COUNTY: 2** GROWERS REPORTED ON **1,050** ACRES.

TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NO. OF GROWERS REPORTING: WEED CONTROL NR*	EXC	GD	FR	PR	NR	CROP INJURY None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
PROG+STING+UPB+SLT+OIL	1	2010	191.4	3.0	0	0	1	0	0	0	1	0	0	0
BMIX+STNG+UPB+SL+NRT+OIL	1	1360	129.5	4.0	0	0	0	0	1	0	0	0	1	0
GLYPHOSATE 0.75 LB	1	80	7.6	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	3	3450	328.6	3.0	0	1	1	0	1	0	2	0	1	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAY-BY)	1	130	12.4	1.0	0	0	0	0	1	0	0	0	1	0
TOTAL-PRE&LAY-BY	1	130	12.4	1.0	0	0	0	0	1	0	0	0	1	0
TOTAL TREATMTS	**4**	**3580**	**341.0**	**2.5**	**0**	**1**	**1**	**0**	**2**	**0**	**2**	**0**	**2**	**0**

*NR=NO RESPONSE; EXC=EXCELLENT; GD=GOOD; FR=FAIR; PR=POOR.

Table 21. Total sugarbeet acreage operated by respondents to the survey in 2008.

County	Respondents	Acres of sugarbeet <50	50-99	100-199	200-299	300-399	400-599	600-799	800-999	1000-1499	1500-1999	2000+
		% of respondents										
Cass	11	-	-	18	18	-	36	18	10	-	-	-
Chippewa[1]	20	-	20	5	5	10	35	15	10	-	-	-
Clay[2]	23	-	-	13	22	-	39	9	9	4	-	4
Grand Forks	12	-	-	17	25	8	25	17	8	-	-	-
Kittson	11	-	-	-	36	9	18	9	18	9	-	-
Marshall	10	-	-	10	10	10	20	10	10	-	20	10
Norman[3]	13	-	8	31	15	15	15	-	-	8	-	8
Pembina	12	8	8	8	17	8	17	17	17	-	-	-
Polk	40	-	2	8	8	15	25	28	5	8	3	-
Renville[4]	27	11	19	37	19	7	4	4	-	-	-	-
Richland	10	-	-	10	10	20	-	40	10	-	-	10
Traill	10	-	-	10	10	50	-	-	10	10	-	-
Traverse[5]	6	-	-	-	50	-	33	17	-	-	-	-
Walsh	19	11	21	5	16	21	11	5	11	-	-	-
Wilkin[6]	13	-	8	8	23	31	8	15	-	-	8	-
No Response	2	-	-	-	-	50	-	50	-	-	-	-
Total	239	2	7	13	17	13	20	14	7	3	2	2

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

Table 22. A summary of the worst weed problem responses for the past 25 years.

	Weed indicated as most important weed problem in sugarbeet													
Year	PIWE[1]	FXTL	COLQ	WIOA	WIBW	WIMU	KOCZ	COCB	SMWE	EBNS	COMA	LASA	VELE	WAHE
	----------% of responses----------													
1984	54	5	6	6	5	4	10							
1985	43	2	11	9	6	5	12							
1986	71	5	4	3	2	1	5	4						
1987	61	7	6	3	6	2	6	2						
1988	75	2	5	1	2	<1	9	1						
1989	54	5	4	1	5	<1	21	1						
1990	51	2	8	1	5	0	23	1	3					
1991	59	3	4	0	2	0	18	2	3					
1992	47	4	8	3	4	<1	16	3	8					
1993	38	3	6	6	8	1	13	3	9	3	2			
1994	61	2	6	2	8	1	8	2	6	2	1			
1995	71	2	4	1	2	1	4	1	8	4	1			
1996	72	4	4	2	1	1	3	2	6	2	1			
1997	53	7	4	2	6	1	3	2	5	4	1			
1998	51	9	7	2	4	1	13	1	4	1	<1			
1999	40	2	10	2	1	<1	33	1	3	1	<1	2		
2000	18	2	19	<1	2	<1	43	2	3	<1	<1	2		1
2001	43	1	10	<1	1	0	32	1	4	4	<1	1		2
2002	44	<1	14	<1	<1	0	26	1	4	<1	<1	<1	2	5
2003	25	<1	18	<1	<1	0	46	<1	4	<1	<1	1	1	2
2004	21	<1	25	1	0	0	41	1	4	1	1	1	2	1
2005	42	<1	15	0	<1	0	29	2	4	<1	0	<1	1	1
2006	35	0	18	0	0	0	41	<1	3	0	0	0	1	<1
2007	34	<1	16	0	0	0	41	0	1	<1	<1	0	1	4
2008	27	0	19	1	1	<1	25	1	4	<1	0	0	<1	2

[1]PIWE=pigweed species, FXTL=green & yellow foxtail, COLQ=common lambsquarters, WIOA=wild oat, WIBW=wild buckwheat, WIMU=wild mustard, KOCZ=kochia, COCB=common cocklebur, SMWE=smartweed, EBNS=eastern black nightshade, COMA=common mallow, LASA=lanceleaf sage, VELE=velevetleaf, and WAHE=waterhemp

Table 23. Worst weed problem in sugarbeet by county in 2008.

County		No											RR	
	Responses	Prob.	KOCZ[7]	PIWE	COLQ	WAHE	SMWE	VELE	WIOA	COCB	NISH	WIBW	Crop	other
		----------% of responses----------												
Cass	12	25	8	25	17	8	-	-	8	-	-	-	8	-
Chippewa[1]	18	5	-	28	22	6	28	-	-	11	-	-	-	-
Clay[2]	25	16	12	40	20	-	-	-	-	-	-	4	8	-
Grand Forks	11	9	64	18	9	-	-	-	-	-	-	-	-	-
Kittson	9	33	33	22	12	-	-	-	-	-	-	-	-	-
Marshall	8	-	88	-	12	-	-	-	-	-	-	-	-	-
Norman[3]	11	-	18	64	18	-	-	-	-	-	-	-	-	-
Pembina	10	30	40	-	10	-	-	-	10	-	-	10	-	-
Polk	38	13	47	13	13	-	-	-	3	-	-	3	3	5
Renville[4]	26	19	4	31	19	-	19	4	-	-	4	-	-	-
Richland	10	-	-	50	40	10	-	-	-	-	-	-	-	-
Traill	10	20	20	20	40	-	-	-	-	-	-	-	-	-
Traverse[5]	7	-	14	57	29	-	-	-	-	-	-	-	-	-
Walsh	20	40	35	10	10	5	-	-	-	-	-	-	-	-
Wilkin[6]	12	-	17	58	25	-	-	-	-	-	-	-	-	-
No Respnse	1	-	-	-	100	-	-	-	-	-	-	-	-	-
Total	228	15	25	27	19	2	4	<1	1	1	<1	1	2	1

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, Redwood, Sibley, Stearns Counties, and Yellow Medicine
[5]Includes Grant, Big Stone, and Stevens Counties
[6]Includes Ottertail County
[7]KOCZ=kochia, PIWE=pigweed species, COLQ=common lambsquarters, WAHE=waterhemp, SMWE=smartweed, VELE=velvetleaf, WIOA= wild oat, COCB=common cocklebur, NISH=nightshade species, WIBW= wild buckwheat, RRCrop= Soybean (2), Canola (1), Corn (1), and other=wild mustard (1) and tansey mustard (1).

Table 24. Worst weed problem in sugarbeet by grower groups in 2008.

Respondents with…[1]	Responses	No Prob.	KOCZ[2]	PIWE	COLQ	WAHE	SMWE	VELE	WIOA	COCB	NISH	WIBW	Other
		----------percent of responses----------											
All Roundup Ready Sugarbeet	186	18	24	28	19	2	3	1	2	-	-	2	3
All Conventional Sugarbeet	171	2	32	31	23	2	6	1	1	1	1	-	2
Only Roundup Ready Sugarbeet	57	54	7	16	7	2	-	-	4	-	-	5	5
Only Conventional Sugarbeet	42	5	33	24	19	-	10	-	-	5	2	-	2
Both R.R. and Conv. Sugarbeet	129	2	31	33	24	2	5	1	1	-	-	-	2
All Sugarbeet	228	15	25	27	19	2	4	<1	1	1	<1	1	1

[1]Growers with Roundup Ready sugarbeet may or may not have grown conventional sugarbeet. Likewise, growers with conventional sugarbeet may or may not have grown Roundup Ready sugarbeet. Growers with both Roundup Ready and conventional sugarbeet grew at least one acre of each type of sugarbeet.

[2]KOCZ=kochia, PIWE=pigweed species, COLQ=common lambsquarters, WAHE=waterhemp, SMWE=smartweed, VELE=velvetleaf, WIOA= wild oat, COCB=common cocklebur, NISH=nightshade species, WIBW= wild buckwheat, and other= RR Soybean (2), RR Canola (1), RR Corn (1), wild mustard (1), and tansy mustard (1).

Table 25. A summary of the most serious production problem responses for the past 25 years.

	Production problem indicated as worst in sugarbeet									
Year	No Problem	Weeds	Weather	Emergence/ Stand	Labor mgmt.	Root maggot	Cercospora leaf spot	Rhizoctonia/ Aphanomyces	Rhizomania	Herbicide Injury
	----------% of responses----------									
1984	5	26	49	8	2	1	2			
1985	4	20	45	17	1	1	1			
1986	4	39	31	18	1	1	1			
1987	5	42	23	22	2	0	2			
1988	1	37	12	40	1	1	1			
1989	5	38	19	16	3	8	2			
1990	5	42	20	10	2	8	4			
1991	3	26	4	18	1	26	7	8		
1992	11	45	9	15	5	9	1	3		
1993	3	40	21	16	4	1	2	12		
1994	3	56	12	13	4	1	3	8		
1995	2	51	6	2	3	<1	24	11		
1996	6	53	12	11	6	2	3	6		
1997	15	34	13	12	3	1	5	14	2	
1998	3	25	9	4	1	1	36	17	3	
1999	14	39	14	12	2	1	6	9	2	
2000	8	48	9	10	1	<1	3	18	2	
2001	6	52	13	5	2	1	1	16	3	
2002	4	53	11	19	1	<1	<1	9	3	
2003	7	61	9	4	1	<1	1	11	2	4
2004	6	47	10	21	2	1	0	8	1	1
2005	3	36	22	3	3	0	0	22	11	0
2006	9	57	5	9	1	0	<1	13	3	1
2007	4	46	7	18	<1	<1	<1	18	2	1
2008	12	30	4	21	3	0	<1	24	2	1

Table 26. Most serious production problem in sugarbeet by grower groups in 2008.

Respondents with…[1]	Responses	No Prob.	Weeds	Rhizoc/ Aphan	Emerg/ Stand	Weather	Rhizo- mania	Herbicide Injury	CLS[2]	Fusarium	Labor Mangmt	Root Maggot	Other[3]
		----------percent of responses----------											
All Roundup Ready Sugarbeet	185	14	26	25	20	5	2	-	1	2	3	-	2
All Conventional Sugarbeet	166	5	40	22	20	5	2	1	-	1	4	-	1
Only Roundup Ready Sugarbeet	60	30	2	30	25	2	2	-	2	3	-	-	5
Only Conventional Sugarbeet	41	5	46	17	24	-	-	5	-	-	2	-	-
Both R.R. and Conv. Sugarbeet	125	6	38	23	18	6	2	-	-	1	5	-	1
All Sugarbeet	226	12	30	24	21	4	2	1	<1	1	3	0	2

[1]Growers with Roundup Ready sugarbeet may or may not have grown conventional sugarbeet. Likewise, growers with conventional sugarbeet may or may not have grown Roundup Ready sugarbeet. Growers with both Roundup Ready and conventional sugarbeet grew at least one acre of each type of sugarbeet.

[2]CLS=Cercospora leaf spot

[3]Other=Springtail(2), sprangled roots(1), late planting(1)

Table 27. Most serious production problem in sugarbeet by county in 2008.

County	Responses	No Prob.	Weeds	Rhizoc/ Aphan	Emerg/ Stand	Weather	Rhizo- mania	Herbicide Injury	CLS[7]	Fusarium	Labor Mangmt	Root Maggot	Other[8]
		% of responses											
Cass	11	27	-	55	9	9	-	-	-	-	-	-	-
Chippewa[1]	16	6	57	19	6	6	-	-	-	-	6	-	-
Clay[2]	22	18	18	23	32	-	-	-	-	5	-	-	5
Grand Forks	10	10	40	20	20	-	10	-	-	-	-	-	-
Kittson	11	26	37	-	37	-	-	-	-	-	-	-	-
Marshall	9	-	33	11	33	-	11	-	-	-	11	-	-
Norman[3]	12	8	25	17	33	8	-	-	-	-	8	-	-
Pembina	10	30	20	20	10	-	-	-	-	-	20	-	-
Polk	39	15	21	13	28	5	3	5	-	3	3	-	5
Renville[4]	27	4	37	26	19	-	4	-	-	4	3	-	3
Richland	10	10	60	20	10	-	-	-	-	-	-	-	-
Traill	11	-	27	55	18	-	-	-	-	-	-	-	-
Traverse[5]	6	17	50	33	-	-	-	-	-	-	-	-	-
Walsh	18	11	17	33	28	6	-	-	6	-	-	-	-
Wilkin[6]	13	-	46	31	-	23	-	-	-	-	-	-	-
No Response	1	-	-	100	-	-	-	-	-	-	-	-	-
Total	226	12	30	24	21	4	2	1	<1	1	3	0	2

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, Redwood, Sibley, Stearns Counties, and Yellow Medicine
[5]Includes Grant, Big Stone, and Stevens Counties
[6]Includes Ottertail County
[7]CLS=Cercospora leaf spot
[8]Other=Springtail(2), sprangled roots(1), late planting(1)

Table 28. Sugarbeet acreage that was hand weeded in 2008

County	Respondent acres planted	Hand Weeded
		% of acres planted
Cass	4,952	0
Chippewa[1]	8,304	57
Clay[2]	12,852	13
Grand Forks	5,106	11
Kittson	5,910	4
Marshall	8,877	5
Norman[3]	6,294	1
Pembina	5,012	23
Polk	22,308	10
Renville[4]	5,467	82
Richland	6,619	41
Traill	4,279	28
Traverse[5]	2,692	15
Walsh	5,958	25
Wilkin[6]	5,929	14
No Response	1,050	0
Total	111,609	20

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

Table 29. Method of herbicide application in 2008.

Herbicide	Acres treated	Method of application: Band	Broadcast Ground	Broadcast Air
		% of acres treated		
Glyphosate (PRE)	2,406	15	85	0
Treflan (Lay-By)	250	0	100	0
Dual (PRE/PPI/Lay-By)	2,013	5	95	0
Nortron (PRE/PPI) Conv. Beets	18,289	78	22	0
Nortron (PRE/PPI) RR Beets	961	69	31	0
Other Soil Herbicides	540	0	100	0
Outlook (Lay-By)	7,092	24	74	2
Betanex/Betamix/Progress	6,752	22	58	20
Poast, Select, Assure II	10,153	2	93	4
Bnex/Bmix/Prog+UpBeet	3,781	58	24	17
Bnex/Bmix/Prog+Stinger	14,202	1	91	8
Bnex/Bmix/Prog+UpBeet+Stinger	9,154	3	70	26
Bnex/Bmix/Prog+UpBeet+Stinger+Oil	25,547	18	70	12
Bnex/Bmix/Prog+UpBeet+Grass+Oil	1,296	0	100	0
Bnex/Bmix/Prog+UpBeet+Stinger+Grass+Oil	**73,431**	**23**	**71**	**7**
Bnex/Bmix/Prog+UpBeet+Stinger+Nortron+Oil	12,304	26	51	23
Bnex/Bmix/Prog+UpBeet+Stinger+Nortron+Grass+Oil	24,527	30	70	0
Glyphosate (POST)	**106,365**	**4**	**96**	**1**
Glyphosate+Stinger	1,123	0	100	0
Other Combinations	4,991	13	38	48
Total	325,177	18	76	6

Table 30. Cost of hand weeding and hand thinning in 2008.

County	Respondents	Dollars per acre: 0[7]	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-70	71-80	80+
		% of respondents														
Cass	11	91	-	-	-	-	9	-	-	-	-	-	-	-	-	-
Chippewa[1]	20	30	5	-	20	5	15	5	5	-	-	5	-	10	-	-
Clay[2]	23	70	-	-	-	13	9	4	-	-	-	-	-	-	-	4
Grand Forks	12	83	-	-	8	8	-	-	-	-	-	-	-	-	-	-
Kittson	11	82	-	-	-	-	18	-	-	-	-	-	-	-	-	-
Marshall	10	50	-	-	-	10	10	10	10	-	-	-	10	-	-	-
Norman[3]	13	92	-	-	-	-	8	-	-	-	-	-	-	-	-	-
Pembina	12	67	-	-	17	-	-	8	-	-	8	-	-	-	-	-
Polk	40	73	5	5	5	8	2	-	-	-	-	-	2	-	-	-
Renville[4]	27	26	19	7	11	7	11	-	15	4	-	-	-	-	-	-
Richland	10	20	-	-	10	10	40	10	-	10	-	-	-	-	-	-
Traill	10	60	-	-	-	20	10	-	-	-	10	-	-	-	-	-
Traverse[5]	6	67	-	-	-	-	-	-	16	-	16	-	-	-	-	-
Walsh	19	74	-	-	5	11	5	-	5	-	-	-	-	-	-	-
Wilkin[6]	13	69	-	-	-	7	-	8	8	-	-	7	-	-	-	-
No Respons	2	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	239	62	3	2	6	7	8	3	4	1	1	1	1	1	0	<1

[1]Includes Kandiyohi and Swift Counties
[2]Includes Becker County
[3]Includes Mahnomen County
[4]Includes Faribault, Lac Qui Parle, Redwood, Sibley, Stearns Counties, and Yellow Medicine
[5]Includes Grant, Big Stone, and Stevens Counties
[6]Includes Ottertail County
[7]0 includes both 'No Response' and '0' responses

Table 31. Number of row crop cultivations per field for weeds in 2008.

	Roundup Ready Sugarbeet				Conventional Sugarbeet				
County	Number of responses	Zero	One	Two	Number of responses	Zero	One	Two	Three
		----------% of respondents----------				----------% of respondents----------			
Cass	11	73	27	-	5	-	60	40	-
Chippewa[1]	13	23	62	15	20	5	60	35	-
Clay[2]	21	57	43	-	16	-	75	25	-
Grand Forks	11	91	9	-	7	14	57	29	-
Kittson	8	100	-	-	4	-	100	-	-
Marshall	8	75	25	-	9	-	67	33	-
Norman[3]	11	91	9	-	8	38	50	13	-
Pembina	11	82	18	-	4	-	25	75	-
Polk	27	74	26	-	32	3	78	16	3
Renville[4]	15	60	27	13	23	9	39	52	-
Richland	10	50	40	10	10	-	40	50	10
Traill	8	63	37	-	7	-	71	29	-
Traverse[5]	6	33	50	17	6	17	17	67	-
Walsh	17	82	18	-	9	-	56	33	11
Wilkin[6]	11	55	27	18	13	-	15	85	-
No Response	1	100	-	-	2	-	100	-	-
Total	189	68	28	4	175	5	57	37	2

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

Table 32. Average number of cultivations per field for weeds by grower groups in 2008.

Respondents with…[1]	Responses	Avg. no. of cultivations per field	
		Roundup Ready	Conventional
All Roundup Ready Sugarbeet	196	0.4	-
All Conventional Sugarbeet	177	-	1.3
Only Roundup Ready Sugarbeet	62	0.1	-
Only Conventional Sugarbeet	43	-	1.4
Both R.R. and Conv. Sugarbeet	134	0.5	1.3

[1]Growers with Roundup Ready sugarbeet may or may not have grown conventional sugarbeet. Likewise, growers with conventional sugarbeet may or may not have grown Roundup Ready sugarbeet. Growers with both Roundup Ready and conventional sugarbeet grew at least one acre of each type of sugarbeet.