SURVEY OF WEED CONTROL AND PRODUCTION PRACTICES ON SUGARBEET IN MINNESOTA AND EASTERN NORTH DAKOTA IN 2011

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The forty-third annual weed control and production practices questionnaire was mailed in September, 2011 to sugarbeet growers producing sugarbeet for American Crystal Sugar Company, Minn-Dak Farmers Cooperative, and Southern Minnesota Beet Sugar Cooperative. Growers were asked to evaluate weed control and sugarbeet injury from specific herbicides, and to list the most important weed and production problems related to sugarbeet grown in 2011. In addition, growers were asked to list insecticide use, fungicide use, acreage by sugarbeet type, acres of hand-weeded sugarbeet, herbicide application methods, and cost of hand weeding in sugarbeet grown in 2011. Growers were also requested to list any glyphosate-resistant weeds found in Roundup Ready sugarbeet fields. Insecticide use and fungicide use portions of the survey can be found in the Entomology and Plant Pathology sections of this book.

Sugarbeet growers planted 693,740 acres of sugarbeet in the Red River Valley and West Central Minnesota in 2011. Two hundred forty-two growers responded to the survey, representing 20% of the total acres planted. The greatest number of growers responded to the survey were from Polk County, MN (53, representing 32,329 acres) (Table 14). Of the acres reported, 18% were conventional sugarbeet and 82% were Roundup Ready® (RR) sugarbeet. This compared to 93% of reported acres being RR in 2010, 88% in 2009, and 49% in 2008. The decline in acreage planted to RR sugarbeet in 2011 was due to growers being uncertain of whether RR sugarbeet could be conditionally deregulated in time for planting in 2011. Roundup Ready sugarbeet were planted to 100% of the reported acres in Chippewa (Table 6), Kandiyohi (Table 9), Renville (Table 15), Richland (Table 16), Stevens (Table 17), and Wilkin (Table 20) Counties. All of these counties are located in the Minn-Dak Farmers Cooperative and Southern Minnesotat Beet Sugar Cooperative. The lowest percentage of RR sugarbeet acreage reported in the survey was planted in Polk County (49%). Of those growers reporting both RR and conventional sugarbeet in 2011, 52% of their total acreage was planted to RR sugarbeet in 2011 (Table 4).

A summary of herbicide use and performance averaged over sugarbeet type and all counties is presented in Table 1. 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. Multiple herbicide treatments are tabulated for each grower, therefore the number of growers reporting herbicide treatments 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 RR sugarbeet, respectively. A summary of herbicide use and performance by county is presented in Tables 5 through 21.

The herbicide trade names listed in the tables are original trade names. The original trade names also represent the generic formulations of the same active ingredient. Thus Nortron also represents Ethofumesate SC, Ethofumesate 42 SC, and Ethotron; Betamix also represents Phen-Des 8+8; Progress also represents BnB Plus; Stinger also represents Clopyr Ag, and Spur; Dual Magnum also represents Brawl and Charger Basic, Outlook also represents Establish and Propel, Select also represents Select Max, Prism, Arrow, Clethodim 2EC, Intensity, Intensity One, Section, Shadow, Trigger, and Volunteer; and Assure II also represents Targa. Betanex was removed from the survey since it has not been manufactured for several years and warehouse supplies likely exhausted.

Total sugarbeet acreage treated with herbicides in 2011 was 287% (Tables 1 and 4) compared to 256% in 2010, 230% in 2009, 308% in 2008, 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. Growers planting only conventional sugarbeet in 2011 applied herbicides to 403% of their acreage (Tables 2 and 4), compared to 385% in 2010, 299% in 2009, and 407% in 2008 and similar to the years prior to RR sugarbeet. Growers planting only RR sugarbeet in 2011 applied herbicides to 262% of their acreage (Tables 3 and 4) compared to 245% in 2010, 225% in 2009, and 225% in 2008. The increase in RR sugarbeet acreage treated with herbicides in 2011 compared to previous years may be due to late emergence of weeds caused by abundant rainfall or glyphosate-resistant weeds in Minnesota and North Dakota.

Nortron was the only soil-applied herbicide reported by growers in 2011. Soil-applied herbicide use for all sugarbeet acreage was 6% in 2011 (Table 1), 2% in 2010, 5% in 2009, 20% in 2008, 25% in 2007, 23% in 2006, 24% in 2005, 31% in 2004, 29% in 2003, 4% in 2002, 11% in 1998, 32% in 1993, and 47% in 1989. Soil-applied herbicide use by respondents growing only conventional sugarbeet was 27% in 2011 (Table 2), 4% in 2010, 18% in 2009, and 35% in 2008. The increase in the use of soil-applied herbicides by conventional sugarbeet growers may be due to the increased acreage of conventional sugarbeet in 2011 and a desire to achieve more effective weed control. Only 1.4% of acres received a soil-applied herbicide when grown by respondents with only RR sugarbeet (Table 3).

Postemergence herbicide use for all sugarbeet types increased in 2011 to 276% (Table 1) compared to 253% in 2010 and 224% in 2009, but still less than 279% in 2008, 340% in 2007, 335% in 2006, 336% in 2005, 379% in 2004, 380% in 2003, 388% in 2002 and 342% in 2001. Postemergence herbicide use for only conventional sugarbeet remained steady at 362% in 2011(Table 2) compared to 378% in 2010, 259% in 2009 and 346% in 2008. Postemergence herbicide use by growers planting only RR sugarbeet was 260% in 2011 (Table 3) compared to 247% in 2010, 225% in 2009 and 223% in 2008. Growers planting only RR sugarbeet reduced the number of postemergence herbicide applications by 1.0 in 2011, compared to growers planting only conventional sugarbeet (362% - 260%/100). This difference is greater than in 2009 (0.35 applications), but somewhat similar to 2010 (1.3 applications) and 2008 (1.2 applications). The reduction in the number of postemergence herbicide applications is likely due to the effectiveness of glyphosate compared to conventional sugarbeet herbicides.

The most common herbicide treatment reported by all growers in 2011 was glyphosate applied at 0.75 pounds acid equivalent per acre (GLYP 0.75 LB) (Table 1), same as in 2010 and 2009 [0.75 pound acid equivalent per acre (lb ae/A) = 22 fl oz/A of Roundup PowerMAX/WeatherMAX and 32 fl oz/A of 3.0 lb ae/gal products].Glyphosate, when combined across all rates and combinations, was applied postemergence to 198% of the total sugarbeet acreage reported in 2011 (Table 1), compared to 224% in 2010, 190% in 2009 and 105% in 2008. Glyphosate, when combined across all rates and combinations, was applied to 244% of sugarbeet acreage reported by growers with only RR sugarbeet in 2011 (Table 3), compared to 242% in 2010, 224% in 2009 and 223% in 2008. Glyphosate plus Stinger (6.4%) and glyphosate plus Select (2.3%) were the most frequently reported herbicide combinations by growers planting only RR sugarbeet in 2011 (Table 3). Select was more often applied separately rather than mixed with glyphosate, while Stinger was applied separately nearly as often as in combination with glyphosate. The total percentage of only RR sugarbeet acreage treated with Stinger in 2011 was 12.2%, compared to 8.4% in 2010, 2.7% in 2009 and 4.1% in 2008. The greatest percentage of RR sugarbeet acreage treated with Stinger was reported by growers in the counties of Cass at 51%, Traill at 48%, and Norman at 36% (Tables 5, 18, and 12, respectively). Growers may have applied Stinger to control volunteer RR soybean or improve control of weeds such as common or giant ragweed.

The average total rate of glyphosate applied per acre to RR sugarbeets in 2011 was 2.21 pounds acid equivalent per acre (lb ae/A), compared to 2.09 in 2010, 1.85 in 2009 and 1.95 lb ae/A in 2008. This increase may be due to excess moisture causing late-season germination of weeds, the increased presence of glyphosate-resistant weeds, and following recommendations to increase glyphosate rates. The average total rate of glyphosate applied per acre is calculated by multiplying a glyphosate rate listed in Table 1 by the total percentage (in decimal form) of acres treated for that particular glyphosate rate listed in Table 1 and by the total acres reported in Table 1. Repeat that procedure for each glyphosate rate listed, add each of these numbers, and divide by the total RR sugarbeet acreage listed in Table 4. The rate for GLYP OTHER LB was determined to be 0.914 lb ae/A by taking a weighted average of the rates provided by growers (data not shown). The rate for GLYP+STINGER, GLYP+SELECT, and GLYP+ASSURE II was determined by taking a weighted average reported by growers (raw data not shown) (0.75 lb ae/A). Growers planting RR sugarbeet in 2011 in Kandiyohi, Grand Forks, Walsh, and Cass Counties applied the lowest total rate per acre of glyphosate, 1.80, 1.89, 1.92, and 1.94 lbs ae/A, respectively (data calucated for each County listed in Tables 5 to 20 using the same method as used above, but for each listed county). Conversely, in 2011 RR sugarbeet growers in Stevens (Table 17), Richland, Renvile (Table 15), and Wilkin (Table 20) Counties applied the greatest total rate per acre of glyphosate, 2.67, 2.55, 2.56, and 2.49 lb ae/A, respectively. Richland County growers continue to apply a high total rate of glyphosate to RR sugarbeet compared to growers in other counties.

Roundup PowerMAX was applied by 50% of respondents reporting the use of glyphosate formulations (data not shown). The remaining 50% of respondents reported the use of one of the following glyphosate formulations listed in rank order: Other (11%) [Buccaneer 5, Cornerstone, Cornerstone Plus, Cornerstone 5 Plus, Gly Star, Mad Dog, Mad Dog Plus and Roundup UltraMAX]; Durango (9%); Buccaneer (7%); Roundup (6%); Buccaneer Plus (5%); Makaze (5%); Roundup WeatherMAX (4%); and Glystar Plus (3%).

The use of postemergence grass herbicides (Select or Assure II in 2011) was 56% of all sugarbeet acres in 2011 (Table 1) as compared to 32% in 2010, 29% in 2009, 104% in 2008, 189% in 2007, 215% in 2006, 203% in 2005, 226% in 2004, 214% in 2003, 209% in 2002, and 214% in 2001. The rapid decline in postemergence grass herbicide usage after 2007 is due to the rapid adoption of RR sugarbeet. The usage of postemergence grass herbicides was 260% of conventional sugarbeet acreage only in 2011 (Table 2), compared to 233% in 2010, 194% in 2009, and 220% in 2008. 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, 92% in 2008, 26% in 2009, 15% in 2010, and 53% in 2011 (Table 1). Forty-three percent of the postemergence grass herbicides were applied to conventional sugarbeet in combination with the micro-rate or mid-rate herbicide treatments which included an oil adjuvant, while only 2% of the postemergence grass herbicides were applied to RR sugarbeets in combination with glyphosate (Table 1).

Betanex was removed from the survey in 2011 because Bayer quit manufacturing the product several years ago. However, two growers reported using Betanex and their useage is reported as an "other combination". Betamix and Progress were applied to only 57% of total sugarbeet acreage in 2011 (Table 1), compared to 320% in 2007, the year prior to RR sugarbeet. The decline in usage of Betanex, Betamix, and Progress is directly related to the high percentage of RR sugarbeet planted and the discontinued manufacturing of Betanex and Progress. Betamix and Progress were applied to 326% of the only conventional sugarbeet acreage in 2011 (Table 2), similar to the usage in 2007. The most common conventional herbicide treatment in 2011 was Betamix + Stinger + UpBeet + Nortron + Select + Oil adjuvant, applied to 21% of total sugarbeet acreage (Table 1). Combination treatments that include oil generally would be micro-rate or mid-rate treatments. Treatments including oil were applied to 52% of 2011 (Table 1) total sugarbeet acreage, 17% in 2010, 26% in 2009, 128% in 2008, 250% in 2007, 258% in 2006, 241% in 2005, 273% in 2004, 297% in 2003, 301% in 2002 and 265% in 2001. Treatments including oil were applied to 291% of 2011 (Table 2) only conventional sugarbeet acreage, similar to prior to the introduction of RR sugarbeet.

The RR sugarbeet system continues to provide the most effective postemergence weed control reported by growers in the history of this survey. When comparing the effectiveness of all postemergence herbicides applied to only RR sugarbeet and only conventional sugarbeet, 69% of only RR sugarbeet growers (Table 3) reported excellent weed control compared to 24% of only conventional sugarbeet growers (Table 2). From 1974 to 2010, an average of 25% of conventional sugarbeet growers have reported excellent weed control. Glyphosate provides superior postemergence weed control in RR sugarbeet compared to conventional herbicides. In 2011 72% (weighted average) of only RR sugarbeet growers (Table 3) reported excellent weed control from glyphosate applied alone, compared to 74% in 2010, 77% in 2009 and 85% in 2008.

Glyphosate was applied preemergence to 3.5% of all sugarbeet acres in 2011 (Table 1). Outlook was applied as a lay-by treatment to 0.9% of all sugarbeet acres (Table 1) and 2.8% of the only conventional sugarbeet acreage (Table 2) in 2011. Outlook was not applied by any grower reporting only RR sugarbeet acreage in 2011.

The rotary hoe was used on only 0.9% of all acres in 2011 (Table 1) compared to 2.8% in 2010, 2.4% in 2009, 15% in 2008, 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 rotary hoe and harrow have nearly vanished as a tool to control weeds in sugarbeet compared to historical use. The greatest reason for the near elimination of rotary hoeing or harrowing is the introduction of RR sugarbeet. The electrical discharge system, weed pullers, mowing or swathing were reportedly used on 0.1% of the total sugarbeet acreage in 2011 compared to 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, 0.4% in 2008, <1% in 2009, and 0% in 2010.

Sugarbeet acreage operated by survey respondents in 2011 varied from less than 50 acres to greater than 2,000 acres (Table 22) with the median sugarbeet acreage being 473 acres and the average being 566 acres. The most common range in acres of sugarbeet was 400 to 599 acres with 25% of the respondents (Table 22). Twelve percent of respondents reported producing 1,000 acres or greater (Table 22).

All but 5% of survey respondents planting conventional sugarbeet reported a "worst weed" problem in 2011 (Table 24). Pigweed (33%), kochia (27%), and common lambsquarters (20%) were named most often as the "worst weed" problem by respondents planting conventional sugarbeet in 2011 (Table 23). This is the first time since 2002 that pigweed was reported as the "worst weed" problem in sugarbeet. A likely reason pigweed was reported as the "worst weed" problem was the impact of consistent and excessive rainfall during the 2011 season. The rainfall caused sugarbeet stand loss that resulted in an open sugarbeet canopy and allowed for late-season emergence of pigweed. Common mallow, biennial wormwood, smartweed, wild oat and yellow nutsedge were the other species mentioned as the "worst weed" problem by respondents producing conventional sugarbeet in 2011 (Table 24).

None (29%) was reported most frequently as the “worst weed” problem by growers planting RR sugarbeet in 2011 (Table 25). This was the fourth year in a row that none was chosen most often by RR sugarbeet growers (Table 25). Pigweed (20%), common lambsquarters (16%) and waterhemp (11%) were the next most reported “worst weed” problems by survey respondents planting RR sugarbeet in 2011 (Table 26). Waterhemp and ragweed appear to be increasing as a “worst weed” problem in sugarbeet as they were reported 6% and 5% more often in 2011, than in 2010, repectively (Table 25). Common lambsquarters and pigweed continue to be reported as the “worst weeds” by RR sugarbeet growers. Kochia is minor weed problem for RR sugarbeet growers compared to the major weed problem it is for conventional sugarbeet growers. Common cocklebur, kochia, foxtail, ragweed, smartweed, wild buckwheat, wild oat, RR crops (canola, corn, and soybean), common mallow and biennial wormwood were also named “worst weed” problems by respondents planting RR sugarbeet in 2011 (Table 26). Volunteer RR crops are a problem in RR sugarbeet compared to conventional sugarbeet (Tables 24 and 26). Respondents from Traill and Walsh Counties reported “none” as the “worst weed” problem more frequently than respondents from any other county. Respondents from all counties reported “none” as a “worst weed” problem, except those from Kandiyohi, Renville, and Stevens Counties (Table 26). Waterhemp was reported most often as a “worst weed” problem by RR sugarbeet growers in Kandiyohi (100%), Chippewa (63%), Renville (55%) and Stevens (40%), but was also reported by growers in Cass, Clay, Norman, Richland, and Triall (Table 26). Waterhemp appears to be spreading throughout the entire Red River Valley up to Norman County. This increased frequency may be due to the long term flooding that occurred in the Red River watershed from 2009 to 2011. Ragweed was reported most often as a “worst weed” problem by RR sugarbeet growers in Cass (25%), no response (20%) and Norman Counties (17%).

Once again Rhizoctonia/Aphanomyces (63%) was named most often as the “most serious production” problem by all survey respondents, compared to 53% in 2010, 30% in 2009, 24% in 2008, 18% in 2007, 13% in 2006, 22% in 2005, and 8% in 2004 (Table 27). Rhizoctonia was reported as a “most serious production” problem most likely due to the wet and warm growing season in 2011, similar to 2010. Weather (15%), no problem (7%) and emergence/stand (7%) were the next most often reported “most serious production” problem by all survey respondents in 2011 (Table 27). Weeds were named the “most serious production” problem by the fewest number of all survey respondents (5%) in the history of this survey.

Weeds (24%) were named most often as the “most serious production” problem by conventional sugarbeet survey respondents in 2011 (Table 28) similar to the last 9 of 10 years for only conventional sugarbeet survey respondents. Rhizoctonia (22%) and weather (18%) were the next most frequently reported “most serious production” problems by conventional sugarbeet servey respondents (Tables 28).

Rhizoctonia was named most often as the “most serious production” problem by RR sugarbeet survey respondents in 2011 (Table 29). Rhizoctonia was reported as a “most serious production” problem by RR sugarbeet survey respondents in all reporting counties. Rhizoctonia was named most often as a “most serious production” problem by RR sugarbeet growers in Kandiyohi (75%), Grand Forks (73%), Traill (67%), and Kittson (60%) (Table 29). Aphanomyces and weather were the next most named “most serious production problem by RR sugarbeeet resopondents in 2011 (Table 29). Weeds were named the “most serious production” problem by only 1% of RR sugarbeet growers in 2011, the fewest times reported in the history of this survey (Table 29). The effectiveness of RR sugarbeet has drastically reduced weeds as a “most serious production”problem. Only respondents from Polk and Wilkin Counties named weeds as a “most serious production” problem in 2011.

Twenty RR sugarbeet growers suspected the presence of glyphosate-resistant weeds in sugarbeet in 2011 (Table 30). Thirty two weed responses were reported with 41 % of responses listing waterhemp and 25% listing ragweed as being suspected of being glyphosate-resistant. Waterhemp, common, and giant ragweed have been confirmed resistant through greenhouse and/or field testing in Minnesota and/or North Dakota. Waterhemp suspected of being glyphosate-resistant was reported by RR sugarbeet growers in Cass, Chippewa, Kandiyohi, Norman, Renville, Richland, Stevens, and Wilkin Counties in 2011 (Table 30). All of these counties are located in the southern Red River Valley or west central Minnesota. Ragweed suspected of being glyphosate-resistant was reported by RR sugarbeet growers in Cass, Grand Forks, Norman, Polk, and Wilkin Counties in 2011 (Table 30). Common lambsquarters, wild buckwheat, redroot pigweed, common mallow, curly dock, smartweed, canola and Palmer amaranth were also reported by survey respondents to be suspected of being glyphosate-resistant in 2011 RR sugarbeet fields, however none of these species have been confirmed for glyphosate resistance in Minnesota or North Dakota. Roundup Ready sugarbeet growers suspected glyphosate-resistant weeds on 1% of sugarbeet acres. Respondents from Kandiyohi County reported 14% of their planted acres as having suspected glyphosate-resistant weeds (Table 31). Proper management of glyphosate in all RR crops is necessary to maintain long-term effectiveness of glyphosate in RR sugarbeet.

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, 20% in 2008, 4% in 2009, 1% in 2010 and 3% in 2011 (Table 31). Hand-weeded acres continue to stay low, most likely because most acreage is planted to RR sugarbeet and weed control from glyphosate is very good. Survey respondents from Marshall (11%) and Grand Forks (6%) Counties reported the greatest amount of hand-weeded acreage in 2011. Respondents from these two counties reported the second and third most acreage of conventional sugarbeet in 2011, explaining the necessity for hand-labor.

The cost of hand weeding ranged from zero to greater than $80/A in 2011 (Table 32). The most common cost in 2011 was zero dollars as reported by 92% of survey respondents. Zero cost responses were 57% in 2001, 48% in 2002, 41% in 2003, 47% in 2004, 57% in 2005, 45% in 2006, 48% in 2007, 62% in 2008, 89% in 2009, and 98% in 2010. When averaged over all survey respondents, the average cost of hand weeding as calculated from Table 32 was $2.23/A in 2011 as compared to $0.63/A in 2010, $4.78/A in 2009, $ 11.32/A in 2008, $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. The effectiveness of glyphosate and the percentage of acreage planted to RR sugarbeet have likely caused the reduction in the average cost of hand weeding averaged over all respondents. When averaged over growers who reported hand-weeded acres, the average cost of hand weeding in 2011 was $20.90/A compared to $29.06/A in 2010, $27.58/A in 2009, $27.41/A in 2008, and $29.40/A in 2007.

Averaged over all herbicides, herbicides were band-applied to 5%, broadcast-applied with a ground sprayer to 88%, and broadcast-applied by air to 7% of the sugarbeet acreage in 2011 (Table 33). In 1998, 40% of the acreage was band-applied, 37% was band-applied 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.

Row crop cultivation data was reported differently in 2010 due to a change in survey design. The 2011 survey was designed the same as 2010 in regard to row crop cultivation. Survey respondents planting conventional sugarbeets reported 97% of acreage as row crop cultivated in 2011(Table 34), compared to 74% in 2010. This is similar to the number of survey respondents reporting row crop cultivations for weed control in the past. In 2009, 100% of survey respondents planting conventional sugarbeet used row crop cultivation, compared to 95% in 2008 and 99% in 2007. Only 10% of RR sugarbeet acreage was reportedly row crop cultivated in 2011 (Table 34) compared to 11% in 2010. In 2009, 28% of respondents used row crop cultivation for weed control in RR sugarbeet, compared to 32% in 2008. The average number of row crop cultivations reported by RR sugarbeet growers who cultivated in 2011 was 1.1, compared to 1.3 cultivations reported by conventional sugarbeet growers who cultivated (Table1). The average number of row crop cultivations per acre can be calculated by multiplying the average number of row crop cultivations found in Table 1 by the percentage of acreage cultivated in Table 34. This calculation provides comparable information to the previously calculated average number of row crop cultivations per field. The average number of row crop cultivations per cultivated acre for conventional sugarbeet in 2011 is 1.3. This compares to the average number of row crop cultivations per field planted to only conventional sugarbeet in 2010 at 1.1, 2009 at 1.9, in 2008 at 1.4, in 2007 and 2006 at 1.7, in 2005 at 1.9, in 2000 at 2.0, in 1998 at 2.4, in 1992 at 3.2, and in 1987 at 3.4. The average number of row crop cultivations per cultivated acre for RR sugarbeet in 2011 is 0.11 compared to 0.11 in 2010. This value is similar to the average number of cultivations per field planted to only RR sugarbeet in 2009 at 0.3 and in 2008 at 0.1. RR sugarbeet has reduced row crop cultivation for weed control compared to conventional sugarbeet. Row crop cultivation continues to decline in conventional sugarbeet, but is still greater than row crop cultivation in RR sugarbeet.

TABLE 1. SUMMARY OF ALL HERBICIDES USED IN SUGARBEET REPORTED IN 2011. **242** GROWERS REPORTED ON **136,959** ACRES. OF THIS TOTAL **3** GROWERS WITH **2,050** ACRES REPORTED NO HERBICIDES USED.

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:													
NORTRON (PPI/PRE)	19	5.3	1.0	5	47	47	0	0	5	84	11	0	0
RR NO HERB	3	1.5	1.0	100	0	0	0	0	100	0	0	0	0
RR NORT (PPI/PRE)	2	1.0	1.0	50	0	0	0	50	0	50	50	0	0
OTHER (PPI/PRE)	1	0.4	1.0	0	100	0	0	0	0	100	0	0	0
TOTAL-PPI&PRE	25	8.3	1.0	20	40	36	0	4	16	72	12	0	0
B. POSTEMERGENCE HERBICIDES:													
GLYP 0.75 LB	94	72.5	2.1	12	74	11	0	3	14	85	0	0	1
GLYP 1.0 LB	76	69.0	2.1	12	68	13	1	5	12	79	7	0	3
GLYP 1.125 LB	45	30.9	1.9	7	71	16	7	0	7	87	4	0	2
BM+ST+UP+NR+SL+O	19	21.0	2.5	11	21	58	11	0	11	32	42	11	5
GLYP OTHER LB	19	18.6	2.2	5	84	5	0	5	5	89	5	0	0
BM+ST+UP+SEL+OIL	15	10.6	1.9	20	7	67	0	7	20	20	60	0	0
RR SELECT	18	7.1	1.5	22	44	22	11	0	22	78	0	0	0
BM+ST+UP+NRT+OIL	8	6.2	1.8	13	25	25	38	0	13	0	75	13	0
PR+ST+UP+SEL+OIL	7	5.6	2.0	0	0	86	14	0	0	14	71	14	0
GLYP+STINGER	12	5.2	1.4	8	83	8	0	0	17	67	0	0	17
OTHER COMBINAT.	13	5.1	1.5	0	38	31	23	8	8	54	38	0	0
RR STINGER	15	4.4	1.3	13	53	33	0	0	20	80	0	0	0
PROGRESS	8	4.0	1.9	0	0	88	13	0	0	13	88	0	0
SELECT	13	3.6	1.3	8	46	46	0	0	15	85	0	0	0
BMX+STNG+UPBT+OL	8	2.6	2.1	25	38	25	0	13	25	25	50	0	0
BM+UPB+SEL+OIL	4	2.0	1.3	25	25	50	0	0	25	25	50	0	0
GLYP+SELECT	6	1.8	1.0	0	83	17	0	0	17	83	0	0	0
BM+ST+UP+ASS+OIL	2	1.8	2.0	50	50	0	0	0	50	0	50	0	0
PR+ST+UP+NR+SL+O	3	1.7	2.0	0	33	0	67	0	0	33	0	67	0
BMIX+UPBEET	4	1.1	1.3	25	0	50	25	0	25	25	50	0	0
RR ASSURE II	5	0.7	1.0	20	40	20	0	20	20	80	0	0	0
BETAMIX	1	0.5	1.0	0	0	100	0	0	0	100	0	0	0
GLYP+ASSURE II	2	0.3	1.5	0	50	50	0	0	0	100	0	0	0
TOTAL-POST	397	276.3	1.9	11	57	24	5	3	13	70	14	2	2
C. PREEMERGE & LAY-BY HERBICIDES:													
GLYP (PRE)	12	3.4	1.0	0	75	25	0	0	0	100	0	0	0
OUTLOOK (LAYBY)	7	0.9	1.0	0	43	57	0	0	0	71	29	0	0
RR GLYP (PRE)	1	0.1	1.0	0	100	0	0	0	0	100	0	0	0
TOTAL-PRE&LAY-BY	20	4.4	1.0	0	65	35	0	0	0	90	10	0	0
D. OTHER WEED CONTROL METHODS:													
CON CULTIVATIONS	43	17.9	1.3	35	26	28	9	2	37	53	9	0	0
RR CULTIVATIONS	37	8.5	1.1	41	35	14	8	3	43	41	14	3	0
ROTARY HOE	3	0.9	1.3	0	67	33	0	0	0	67	0	33	0
SWATH/FLAIL/MOW	1	0.1	1.0	100	0	0	0	0	100	0	0	0	0
TOTAL-OTHER	84	27.3	1.2	37	31	21	8	2	39	48	11	2	0
TOTAL TREATMTS	526	316.3	1.7	15	53	24	5	3	17	67	13	2	1

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

TABLE 2. SUMMARY OF ALL HERBICIDES USED BY RESPONDENTS WHO **GREW ONLY CONVENTIONAL SUGARBEET** IN 2011. **32** GROWERS REPORTED ON **18,327 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:													
NORTRON (PPI/PRE)	12	27.3	1.0	8	50	42	0	0	8	83	8	0	0
TOTAL-PPI&PRE	12	27.3	1.0	8	50	42	0	0	8	83	8	0	0
B. POSTEMERGENCE HERBICIDES:													
BM+ST+UP+NR+SL+O	9	100.5	2.7	0	33	56	11	0	0	44	33	22	0
BM+ST+UP+SEL+OIL	13	76.2	2.1	23	8	62	0	8	23	23	54	0	0
BM+ST+UP+NRT+OIL	5	42.3	1.8	20	40	20	20	0	20	0	60	20	0
PR+ST+UP+SEL+OIL	6	41.1	2.2	0	0	100	0	0	0	0	83	17	0
PROGRESS	5	23.0	2.0	0	0	80	20	0	0	20	80	0	0
SELECT	9	20.7	1.4	11	56	33	0	0	22	78	0	0	0
OTHER COMBINAT.	4	15.4	1.5	0	50	25	25	0	0	50	50	0	0
PR+ST+UP+NR+SL+O	2	10.9	2.0	0	0	0	100	0	0	0	0	100	0
BM+UPB+SEL+OIL	3	10.6	1.0	33	33	33	0	0	33	33	33	0	0
BMX+STNG+UPBT+OL	5	9.3	1.8	40	40	0	0	20	40	40	20	0	0
BMIX+UPBEET	4	8.5	1.3	25	0	50	25	0	25	25	50	0	0
BETAMIX	1	3.5	1.0	0	0	100	0	0	0	100	0	0	0
BM+ST+UP+ASS+OIL	1	0.2	1.0	100	0	0	0	0	100	0	0	0	0
TOTAL-POST	67	362.1	1.9	15	24	48	10	3	16	33	42	9	0
C. PREEMERGE & LAY-BY HERBICIDES:													
GLYP (PRE)	5	10.8	1.0	0	80	20	0	0	0	100	0	0	0
OUTLOOK (LAYBY)	5	2.8	1.0	0	40	60	0	0	0	80	20	0	0
TOTAL-PRE&LAY-BY	10	13.6	1.0	0	60	40	0	0	0	90	10	0	0
D. OTHER WEED CONTROL METHODS:													
CON CULTIVATIONS	27	97.8	1.3	41	19	30	7	4	41	52	7	0	0
ROTARY HOE	3	6.5	1.3	0	67	33	0	0	0	67	0	33	0
SWATH/FLAIL/MOW	1	0.8	1.0	100	0	0	0	0	100	0	0	0	0
TOTAL-OTHER	31	105.1	1.3	39	23	29	6	3	39	52	6	3	0
TOTAL TREATMTS	120	508.1	1.6	19	29	42	8	3	20	48	27	6	0

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

TABLE 3. SUMMARY OF HERBICIDES USED BY RESPONDENTS WHO **GREW ONLY RR SUGARBEET** IN 2011. **191** GROWERS REPORTED ON **104,154 ACRES**. OF THIS TOTAL, 3 GROWERS WITH 2,050 ACRES REPORTED NO HERBICIDES USED.

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:													
RR NO HERB	3	2.0	1.0	100	0	0	0	0	100	0	0	0	0
RR NORT (PPI/PRE)	2	1.4	1.0	50	0	0	0	50	0	50	50	0	0
TOTAL-PPI&PRE	5	3.3	1.0	80	0	0	0	20	60	20	20	0	0
B. POSTEMERGENCE HERBICIDES:													
GLYP 1.0 LB	72	88.7	2.1	13	68	13	1	6	13	78	7	0	3
GLYP 0.75 LB	82	84.4	2.1	12	72	12	0	4	15	84	0	0	1
GLYP 1.125 LB	42	37.4	1.9	7	71	14	7	0	7	86	5	0	2
GLYP OTHER LB	19	24.4	2.2	5	84	5	0	5	5	89	5	0	0
RR SELECT	18	9.3	1.5	22	44	22	11	0	22	78	0	0	0
GLYP+STINGER	11	6.4	1.4	9	82	9	0	0	18	64	0	0	18
RR STINGER	15	5.8	1.3	13	53	33	0	0	20	80	0	0	0
GLYP+SELECT	6	2.3	1.0	0	83	17	0	0	17	83	0	0	0
RR ASSURE II	5	0.9	1.0	20	40	20	0	20	20	80	0	0	0
GLYP+ASSURE II	2	0.4	1.5	0	50	50	0	0	0	100	0	0	0
TOTAL-POST	272	260.0	1.9	11	69	14	2	3	13	82	3	0	2
C. PREEMERGE & LAY-BY HERBICIDES:													
RR GLYP (PRE)	1	0.2	1.0	0	100	0	0	0	0	100	0	0	0
TOTAL-PRE&LAY-BY	1	0.2	1.0	0	100	0	0	0	0	100	0	0	0
D. OTHER WEED CONTROL METHODS:													
RR CULTIVATIONS	32	10.1	1.0	41	34	16	9	0	44	38	16	3	0
TOTAL-OTHER	32	10.1	1.0	41	34	16	9	0	44	38	16	3	0
TOTAL TREATMTS	310	273.6	1.8	15	64	14	3	3	17	76	5	0	2

*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 2011.

Respondents who grew…[1]	Respondents	Acres	% of Acres treated with herbicide
RR Sugarbeet	210	111,734	260
Conventional Sugarbeet	51	25,225	412
Only RR Sugarbeet	191	104,154	262
Only Conventional Sugarbeet	32	18,327	403
All Sugarbeet	242	136,959	287

[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.

TABLE 5. CASS COUNTY: 8 GROWERS REPORTED ON **3,471 ACRES**. OF THESE ACRES, 3,313 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	1	158	4.6	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-PPI&PRE	1	158	4.6	1.0	0	0	1	0	0	0	1	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	7	3592	103.5	1.4	2	5	0	0	0	2	5	0	0	0
GLYP 1.0 LB	4	3434	98.9	1.8	2	2	0	0	0	2	2	0	0	0
RR STINGER	2	1374	39.6	1.5	0	0	2	0	0	0	2	0	0	0
GLYP+STINGER	1	400	11.5	1.0	1	0	0	0	0	1	0	0	0	0
BM+ST+UP+NRT+OIL	2	316	9.1	1.0	0	0	0	2	0	0	0	2	0	0
TOTAL-POST	16	9116	262.6	1.4	5	7	2	2	0	5	9	2	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	1	527	15.2	1.0	0	1	0	0	0	0	1	0	0	0
CON CULTIVATIONS	1	316	9.1	2.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	2	843	24.3	1.5	1	1	0	0	0	1	1	0	0	0
TOTAL TREATMTS	19	10117	291.5	1.4	6	8	3	2	0	6	11	2	0	0

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

TABLE 6. CHIPPEWA COUNTY: 9 GROWERS REPORTED ON **4,409 ACRES.** OF THESE ACRES, 4,409 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	7	9444	214.2	2.6	1	4	1	0	1	1	6	0	0	0
GLYP 1.0 LB	3	1828	41.5	1.3	0	3	0	0	0	0	3	0	0	0
RR SELECT	3	1286	29.2	1.3	1	1	1	0	0	1	2	0	0	0
GLYP 1.125 LB	2	945	21.4	1.0	0	2	0	0	0	0	2	0	0	0
RR ASSURE II	4	919	20.8	1.0	0	2	1	0	1	0	4	0	0	0
RR STINGER	2	612	13.9	1.5	0	2	0	0	0	0	2	0	0	0
TOTAL-POST	21	15034	341.0	1.7	2	14	3	0	2	2	19	0	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	5	3143	71.3	1.0	2	1	1	1	0	2	3	0	0	0
TOTAL-OTHER	5	3143	71.3	1.0	2	1	1	1	0	2	3	0	0	0
TOTAL TREATMTS	26	18177	412.3	1.5	4	15	4	1	2	4	22	0	0	0

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

TABLE 7. CLAY COUNTY: 20 GROWERS REPORTED ON **9,940 ACRES.** OF THESE ACRES, 9,540 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 1.0 LB	5	8233	82.8	2.6	2	2	1	0	0	2	2	0	0	1
GLYP 1.125 LB	8	7657	77.0	1.8	0	6	2	0	0	0	8	0	0	0
GLYP 0.75 LB	8	6140	61.8	1.9	1	6	1	0	0	2	6	0	0	0
RR STINGER	5	1020	10.3	1.2	0	4	1	0	0	1	4	0	0	0
RR SELECT	1	900	9.1	3.0	0	1	0	0	0	0	1	0	0	0
BM+ST+UP+NR+SL+O	1	800	8.0	2.0	0	0	0	1	0	0	0	0	0	1
GLYP OTHER LB	1	720	7.2	2.0	0	1	0	0	0	0	1	0	0	0
GLYP+STINGER	1	480	4.8	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	30	25950	261.1	1.9	3	21	5	1	0	5	23	0	0	2
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	2	285	2.9	1.0	0	1	1	0	0	0	1	1	0	0
CON CULTIVATIONS	1	200	2.0	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	3	485	4.9	1.0	1	1	1	0	0	1	1	1	0	0
TOTAL TREATMTS	33	26435	265.9	1.8	4	22	6	1	0	6	24	1	0	2

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

TABLE 8. GRAND FORKS COUNTY: 13 GROWERS REPORTED ON **7,457 ACRES.** OF THESE ACRES, 5,755 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	1	650	8.7	1.0	0	1	0	0	0	0	1	0	0	0
OTHER (PPI/PRE)	1	552	7.4	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PPI&PRE	2	1202	16.1	1.0	0	2	0	0	0	0	2	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	5	5832	78.2	2.2	0	5	0	0	0	0	5	0	0	0
GLYP 1.0 LB	5	4362	58.5	2.2	0	3	1	0	1	0	4	1	0	0
BM+ST+UP+NR+SL+O	1	2208	29.6	4.0	0	1	0	0	0	0	1	0	0	0
PR+ST+UP+NR+SL+O	2	2000	26.8	2.0	0	0	0	2	0	0	0	0	2	0
BM+ST+UP+SEL+OIL	1	1950	26.1	3.0	0	0	1	0	0	0	1	0	0	0
GLYP 1.125 LB	2	1905	25.5	2.0	0	2	0	0	0	0	2	0	0	0
RR SELECT	1	290	3.9	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	17	18547	248.7	2.2	0	12	2	2	1	0	14	1	2	0
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	1	552	7.4	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	552	7.4	1.0	0	1	0	0	0	0	1	0	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	2	1202	16.1	1.0	1	1	0	0	0	1	1	0	0	0
SWATH/FLAIL/MOW	1	150	2.0	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	3	1352	18.1	1.0	2	1	0	0	0	2	1	0	0	0
TOTAL TREATMTS	23	21653	290.4	1.9	2	16	2	2	1	2	18	1	2	0

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

TABLE 9. KANDIYOHI COUNTY: 4 GROWERS REPORTED ON **2,186 ACRES.** OF THESE ACRES, 2,186 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
RR SELECT	3	2920	133.6	1.7	0	1	1	1	0	0	3	0	0	0
GLYP 0.75 LB	1	2550	116.7	2.0	0	0	1	0	0	0	1	0	0	0
GLYP 1.125 LB	2	1582	72.4	2.0	0	1	1	0	0	0	1	0	0	1
RR STINGER	1	425	19.4	1.0	0	0	1	0	0	0	1	0	0	0
GLYP 1.0 LB	1	240	11.0	2.0	0	0	0	1	0	0	1	0	0	0
TOTAL-POST	8	7717	353.0	1.8	0	2	4	2	0	0	7	0	0	1
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	1	600	27.4	1.0	0	0	0	1	0	0	0	0	1	0
TOTAL-OTHER	1	600	27.4	1.0	0	0	0	1	0	0	0	0	1	0
TOTAL TREATMTS	9	8317	380.5	1.7	0	2	4	3	0	0	7	0	1	1

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

TABLE 10. KITTSON COUNTY: 13 GROWERS REPORTED ON **8,581 ACRES.** OF THESE ACRES, 7,691 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	5	13951	162.6	2.6	0	3	1	0	1	0	5	0	0	0
GLYP 1.0 LB	7	5896	68.7	1.7	0	5	2	0	0	0	7	0	0	0
BM+ST+UP+SEL+OIL	3	2670	31.1	2.0	0	0	3	0	0	0	1	2	0	0
GLYP 1.125 LB	1	632	7.4	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	16	23149	269.8	2.1	0	9	6	0	1	0	14	2	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	2	700	8.2	1.0	1	0	1	0	0	1	1	0	0	0
TOTAL-OTHER	2	700	8.2	1.0	1	0	1	0	0	1	1	0	0	0
TOTAL TREATMTS	18	23849	277.9	1.9	1	9	7	0	1	1	15	2	0	0

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

TABLE 11. MARSHALL COUNTY: 14 GROWERS REPORTED ON **6,250 ACRES.** OF THESE ACRES, 3,960 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	1	280	4.5	1.0	0	1	0	0	0	0	0	1	0	0
TOTAL-PPI&PRE	1	280	4.5	1.0	0	1	0	0	0	0	0	1	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 1.0 LB	7	6438	103.0	2.3	0	5	1	0	1	0	7	0	0	0
BM+ST+UP+SEL+OIL	1	3024	48.4	3.0	1	0	0	0	0	1	0	0	0	0
GLYP 0.75 LB	3	2644	42.3	2.3	0	2	1	0	0	0	3	0	0	0
PR+ST+UP+SEL+OIL	4	2308	36.9	1.3	0	0	3	1	0	0	1	3	0	0
GLYP OTHER LB	1	930	14.9	2.0	0	1	0	0	0	0	1	0	0	0
OTHER COMBINAT.	4	880	14.1	1.5	0	0	0	3	1	0	0	4	0	0
BM+ST+UP+NR+SL+O	1	840	13.4	3.0	1	0	0	0	0	1	0	0	0	0
BMX+STNG+UPBT+OL	1	510	8.2	3.0	1	0	0	0	0	1	0	0	0	0
GLYP 1.125 LB	1	483	7.7	3.0	0	1	0	0	0	0	1	0	0	0
SELECT	2	292	4.7	1.0	0	0	2	0	0	0	2	0	0	0
BMIX+UPBEET	1	40	0.6	1.0	1	0	0	0	0	1	0	0	0	0
BM+ST+UP+ASS+OIL	1	40	0.6	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-POST	27	18429	294.9	1.9	5	9	7	4	2	5	15	7	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	1	144	2.3	1.0	0	1	0	0	0	0	1	0	0	0
OUTLOOK (LAYBY)	1	140	2.2	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	2	284	4.5	1.0	0	1	1	0	0	0	2	0	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	3	1386	22.2	1.7	2	0	0	1	0	2	1	0	0	0
ROTARY HOE	1	300	4.8	2.0	0	1	0	0	0	0	0	0	1	0
RR CULTIVATIONS	1	114	1.8	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-OTHER	5	1800	28.8	1.6	2	2	0	1	0	2	2	0	1	0
TOTAL TREATMTS	35	20793	332.7	1.8	7	13	8	5	2	7	19	8	1	0

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

TABLE 12. NORMAN AND MANOHMAN COUNTIES: 12 GROWERS REPORTED ON **8,679 ACRES.** OF THESE ACRES, 8,534 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
RR NORT (PPI/PRE)	1	1100	12.7	1.0	1	0	0	0	0	0	0	1	0	0
TOTAL-PPI&PRE	1	1100	12.7	1.0	1	0	0	0	0	0	0	1	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 1.0 LB	7	7400	85.3	1.7	0	6	1	0	0	0	5	2	0	0
GLYP 0.75 LB	6	6972	80.3	2.0	1	4	1	0	0	1	5	0	0	0
GLYP 1.125 LB	3	3596	41.4	1.7	0	2	1	0	0	0	3	0	0	0
GLYP+STINGER	1	3120	35.9	2.0	0	1	0	0	0	0	1	0	0	0
BM+ST+UP+NRT+OIL	1	465	5.4	3.0	0	0	1	0	0	0	0	1	0	0
PROGRESS	1	155	1.8	1.0	0	0	1	0	0	0	0	1	0	0
SELECT	1	115	1.3	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-POST	20	21823	251.4	1.8	1	13	6	0	0	1	15	4	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	1	145	1.7	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	145	1.7	1.0	0	0	1	0	0	0	1	0	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	1	145	1.7	1.0	0	0	0	1	0	0	0	1	0	0
RR CULTIVATIONS	1	95	1.1	1.0	0	1	0	0	0	0	0	1	0	0
TOTAL-OTHER	2	240	2.8	1.0	0	1	0	1	0	0	0	2	0	0
TOTAL TREATMTS	24	23308	268.6	1.7	2	14	7	1	0	1	16	7	0	0

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

TABLE 13. PEMBINA COUNTY: 15 GROWERS REPORTED ON **12,235 ACRES.** OF THESE ACRES, 11,542 WERE ROUNDUP READY.

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:														
NORTRON (PPI/PRE)	2	549	4.5	1.0	0	0	2	0	0	0	2	0	0	0
TOTAL-PPI&PRE	2	549	4.5	1.0	0	0	2	0	0	0	2	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 1.0 LB	7	17070	139.5	2.4	0	6	1	0	0	0	6	0	0	1
GLYP OTHER LB	3	4972	40.6	2.0	0	3	0	0	0	0	3	0	0	0
GLYP 0.75 LB	4	4472	36.6	2.0	0	4	0	0	0	0	3	0	0	1
GLYP 1.125 LB	1	1572	12.8	2.0	0	1	0	0	0	0	1	0	0	0
PROGRESS	2	1156	9.4	2.0	0	0	2	0	0	0	0	2	0	0
BMX+STNG+UPBT+OL	2	600	4.9	1.5	0	2	0	0	0	0	1	1	0	0
BM+ST+UP+NRT+OIL	1	180	1.5	3.0	0	1	0	0	0	0	0	1	0	0
BM+ST+UP+NR+SL+O	1	120	1.0	2.0	0	0	1	0	0	0	0	1	0	0
SELECT	1	80	0.7	1.0	0	1	0	0	0	1	0	0	0	0
OTHER COMBINAT.	1	60	0.5	1.0	0	1	0	0	0	1	0	0	0	0
TOTAL-POST	23	30282	247.5	2.0	0	19	4	0	0	2	14	5	0	2
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	1	260	2.1	1.0	0	1	0	0	0	0	1	0	0	0
OUTLOOK (LAYBY)	1	18	0.1	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	2	278	2.3	1.0	0	2	0	0	0	0	2	0	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	4	1890	15.4	1.0	1	3	0	0	0	1	3	0	0	0
CON CULTIVATIONS	2	404	3.3	1.0	1	1	0	0	0	1	1	0	0	0
TOTAL-OTHER	6	2294	18.7	1.0	2	4	0	0	0	2	4	0	0	0
TOTAL TREATMTS	33	33403	273.0	1.7	2	25	6	0	0	4	22	5	0	2

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

TABLE 14. POLK COUNTY: 53 GROWERS REPORTED ON **32,329 ACRES**. OF THESE ACRES, 15,812 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	10	4209	13.0	1.0	1	4	5	0	0	1	8	1	0	0
TOTAL-PPI&PRE	10	4209	13.0	1.0	1	4	5	0	0	1	8	1	0	0
B. POSTEMERGENCE HERBICIDES:														
BM+ST+UP+NR+SL+O	14	24006	74.3	2.5	1	3	9	1	0	1	5	6	2	0
GLYP 1.0 LB	8	9611	29.7	1.8	0	8	0	0	0	0	7	1	0	0
GLYP 0.75 LB	13	8254	25.5	1.8	0	13	0	0	0	0	13	0	0	0
GLYP 1.125 LB	11	8027	24.8	1.7	1	8	2	0	0	1	10	0	0	0
BM+ST+UP+NRT+OIL	4	7566	23.4	1.5	1	1	1	1	0	1	0	2	1	0
GLYP OTHER LB	7	7342	22.7	2.0	0	6	1	0	0	0	6	1	0	0
BM+ST+UP+SEL+OIL	8	6294	19.5	1.9	2	1	5	0	0	2	0	6	0	0
OTHER COMBINAT.	7	5169	16.0	1.4	0	4	3	0	0	0	6	1	0	0
PR+ST+UP+SEL+OIL	2	4275	13.2	3.0	0	0	2	0	0	0	0	1	1	0
SELECT	7	4129	12.8	1.4	1	4	2	0	0	1	6	0	0	0
PROGRESS	4	3590	11.1	1.8	0	0	3	1	0	0	1	3	0	0
BM+UPB+SEL+OIL	4	2695	8.3	1.3	1	1	2	0	0	1	1	2	0	0
BMX+STNG+UPBT+OL	3	1691	5.2	2.0	1	1	1	0	0	1	0	2	0	0
BMIX+UPBEET	3	1518	4.7	1.3	0	0	2	1	0	0	1	2	0	0
BETAMIX	1	640	2.0	1.0	0	0	1	0	0	0	1	0	0	0
PR+ST+UP+NR+SL+O	1	272	0.8	2.0	0	1	0	0	0	0	1	0	0	0
RR SELECT	1	88	0.3	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	98	95167	294.4	1.8	8	52	34	4	0	8	59	27	4	0
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	6	2617	8.1	1.0	0	4	2	0	0	0	6	0	0	0
OUTLOOK (LAYBY)	3	347	1.1	1.0	0	1	2	0	0	0	2	1	0	0
TOTAL-PRE&LAY-BY	9	2964	9.2	1.0	0	5	4	0	0	0	8	1	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	24	16244	50.2	1.3	8	6	8	2	0	9	14	1	0	0
RR CULTIVATIONS	7	1721	5.3	1.1	5	0	1	1	0	5	0	2	0	0
ROTARY HOE	2	895	2.8	1.0	0	1	1	0	0	0	2	0	0	0
TOTAL-OTHER	33	18860	58.3	1.2	13	7	10	3	0	14	16	3	0	0
TOTAL TREATMTS	150	121E3	374.9	1.6	22	68	53	7	0	23	91	32	4	0

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

TABLE 15. RENVILLE, FAIRBAULT, REDWOOD, AND SIBLEY COUNTIES: 11 GROWERS REPORTED ON **4,387 ACRES**. OF THESE ACRES, 4,387 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	6	4309	98.2	2.3	3	1	2	0	0	3	3	0	0	0
GLYP 1.125 LB	4	4265	97.2	2.3	1	1	0	2	0	1	2	1	0	0
GLYP 1.0 LB	1	1800	41.0	2.0	0	1	0	0	0	0	1	0	0	0
GLYP+SELECT	1	900	20.5	1.0	0	1	0	0	0	0	1	0	0	0
RR SELECT	3	879	20.0	1.7	1	0	1	1	0	1	2	0	0	0
GLYP OTHER LB	2	840	19.1	1.0	0	2	0	0	0	0	2	0	0	0
TOTAL-POST	17	12993	296.2	1.9	5	6	3	3	0	5	11	1	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	2	494	11.3	1.0	0	1	1	0	0	0	1	1	0	0
TOTAL-OTHER	2	494	11.3	1.0	0	1	1	0	0	0	1	1	0	0
TOTAL TREATMTS	**19**	**13487**	**307.4**	**1.8**	**5**	**7**	**4**	**3**	**0**	**5**	**12**	**2**	**0**	**0**

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

TABLE 16. RICHLAND COUNTY: 9 GROWERS REPORTED ON **6,613 ACRES** OF WHICH 1 GROWER REPORTED NO HERBICIDE USED ON 470 ACRES AND 6,613 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
RR NO HERB	1	470	7.1	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-PPI&PRE	1	470	7.1	1.0	1	0	0	0	0	1	0	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP OTHER LB	2	6570	99.3	3.0	0	2	0	0	0	0	2	0	0	0
GLYP 1.0 LB	3	5920	89.5	2.3	0	3	0	0	0	0	3	0	0	0
GLYP 0.75 LB	3	3596	54.4	2.0	0	3	0	0	0	0	3	0	0	0
RR SELECT	2	2200	33.3	1.0	0	2	0	0	0	0	2	0	0	0
GLYP+SELECT	3	1272	19.2	1.0	0	2	1	0	0	0	3	0	0	0
RR STINGER	3	615	9.3	1.0	0	2	1	0	0	0	3	0	0	0
GLYP+STINGER	2	587	8.9	1.0	0	1	1	0	0	0	2	0	0	0
GLYP 1.125 LB	1	550	8.3	1.0	0	1	0	0	0	0	1	0	0	0
GLYP+ASSURE II	1	281	4.2	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-POST	20	21591	326.5	1.6	0	16	4	0	0	0	20	0	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
RR GLYP (PRE)	1	200	3.0	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	200	3.0	1.0	0	1	0	0	0	0	1	0	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	1	400	6.0	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-OTHER	1	400	6.0	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL TREATMTS	**23**	**22661**	**342.7**	**1.5**	**2**	**17**	**4**	**0**	**0**	**2**	**21**	**0**	**0**	**0**

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

TABLE 17. STEVENS, GRANT, SWIFT, AND TRAVERSE COUNTIES: 6 GROWERS REPORTED ON **3,174 ACRES.** OF THESE ACRES 3,174 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 1.0 LB	3	6114	192.6	3.0	1	1	1	0	0	1	1	1	0	0
GLYP 1.125 LB	2	1630	51.4	2.5	1	0	0	1	0	1	1	0	0	0
GLYP+STINGER	1	700	22.1	2.0	0	1	0	0	0	0	1	0	0	0
RR SELECT	1	450	14.2	3.0	1	0	0	0	0	1	0	0	0	0
GLYP 0.75 LB	1	78	2.5	3.0	1	0	0	0	0	1	0	0	0	0
RR ASSURE II	1	26	0.8	1.0	1	0	0	0	0	1	0	0	0	0
TOTAL-POST	9	8998	283.5	2.6	5	2	1	1	0	5	3	1	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	2	256	8.1	1.0	2	0	0	0	0	2	0	0	0	0
TOTAL-OTHER	2	256	8.1	1.0	2	0	0	0	0	2	0	0	0	0
TOTAL TREATMTS	**11**	**9254**	**291.6**	**2.3**	**7**	**2**	**1**	**1**	**0**	**7**	**3**	**1**	**0**	**0**

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

TABLE 18. TRAILL COUNTY: 12 GROWERS REPORTED ON **4,773 ACRES.** OF THESE ACRES 3,903 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	1	210	4.4	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PPI&PRE	1	210	4.4	1.0	0	1	0	0	0	0	1	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	4	4610	96.6	2.8	0	4	0	0	0	0	4	0	0	0
GLYP 1.0 LB	2	1820	38.1	2.0	1	0	0	0	1	1	1	0	0	0
GLYP 1.125 LB	2	1480	31.0	2.5	0	2	0	0	0	0	2	0	0	0
GLYP+STINGER	3	1256	26.3	1.3	0	3	0	0	0	0	1	0	0	2
RR STINGER	1	1020	21.4	2.0	1	0	0	0	0	1	0	0	0	0
BM+ST+UP+NR+SL+O	1	800	16.8	2.0	0	0	1	0	0	0	0	1	0	0
PROGRESS	1	630	13.2	3.0	0	0	1	0	0	0	0	1	0	0
BM+ST+UP+SEL+OIL	2	579	12.1	1.0	0	0	1	0	1	0	1	1	0	0
BMX+STNG+UPBT+OL	1	520	10.9	2.0	0	0	0	0	1	0	1	0	0	0
SELECT	1	220	4.6	2.0	0	0	1	0	0	0	1	0	0	0
TOTAL-POST	18	12935	271.0	2.1	2	9	4	0	3	2	11	3	0	2
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAYBY)	1	400	8.4	1.0	0	0	1	0	0	0	0	1	0	0
TOTAL-PRE&LAY-BY	1	400	8.4	1.0	0	0	1	0	0	0	0	1	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	3	1270	26.6	1.3	0	1	1	0	1	0	2	1	0	0
RR CULTIVATIONS	3	400	8.4	1.0	1	2	0	0	0	1	2	0	0	0
TOTAL-OTHER	6	1670	35.0	1.2	1	3	1	0	1	1	4	1	0	0
TOTAL TREATMTS	**26**	**15215**	**318.8**	**1.8**	**3**	**13**	**6**	**0**	**4**	**3**	**16**	**5**	**0**	**2**

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

TABLE 19. WALSH COUNTY: 13 GROWERS REPORTED ON **4,100 ACRES**. OF THESE ACRES, 3,340 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
NORTRON (PPI/PRE)	2	664	16.2	1.0	0	2	0	0	0	0	2	0	0	0
TOTAL-PPI&PRE	2	664	16.2	1.0	0	2	0	0	0	0	2	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	8	4210	102.7	2.0	1	5	1	0	1	1	7	0	0	0
GLYP 1.0 LB	2	1624	39.6	2.0	1	0	1	0	0	1	1	0	0	0
GLYP 1.125 LB	3	1452	35.4	2.0	0	3	0	0	0	0	3	0	0	0
PR+ST+UP+SEL+OIL	1	1092	26.6	3.0	0	0	1	0	0	0	0	1	0	0
OTHER COMBINAT.	1	900	22.0	3.0	0	0	1	0	0	0	1	0	0	0
BMX+STNG+UPBT+OL	1	288	7.0	3.0	0	0	1	0	0	0	0	1	0	0
SELECT	1	150	3.7	1.0	0	1	0	0	0	0	1	0	0	0
RR SELECT	1	40	1.0	1.0	0	0	1	0	0	0	1	0	0	0
TOTAL-POST	18	9756	238.0	2.1	2	9	6	0	1	2	14	2	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
OUTLOOK (LAYBY)	1	300	7.3	1.0	0	1	0	0	0	0	1	0	0	0
GLYP (PRE)	1	150	3.7	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	2	450	11.0	1.0	0	2	0	0	0	0	2	0	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	3	1788	43.6	2.0	0	1	2	0	0	0	2	1	0	0
RR CULTIVATIONS	3	632	15.4	1.0	1	0	1	0	1	1	2	0	0	0
TOTAL-OTHER	6	2420	59.0	1.5	1	1	3	0	1	1	4	1	0	0
TOTAL TREATMTS	**28**	**13290**	**324.1**	**1.8**	**3**	**14**	**9**	**0**	**2**	**3**	**22**	**3**	**0**	**0**

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

TABLE 20. WILKIN AND OTTER TAIL COUNTIES: 14 GROWERS REPORTED ON **8,777 ACRES.** OF THESE ACRES 8,777 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	7	12838	146.3	2.6	0	6	1	0	0	1	6	0	0	0
GLYP 1.0 LB	7	9473	107.9	2.3	1	4	1	0	1	1	6	0	0	0
GLYP 1.125 LB	1	2100	23.9	2.0	0	1	0	0	0	0	0	1	0	0
RR SELECT	2	620	7.1	1.0	1	1	0	0	0	1	1	0	0	0
GLYP+SELECT	2	270	3.1	1.0	0	2	0	0	0	1	1	0	0	0
GLYP+STINGER	2	230	2.6	1.0	0	2	0	0	0	1	1	0	0	0
TOTAL-POST	21	25531	290.9	2.0	2	16	2	0	1	5	15	1	0	0
D. OTHER WEED CONTROL METHODS:														
RR CULTIVATIONS	2	430	4.9	1.5	0	2	0	0	0	1	1	0	0	0
TOTAL-OTHER	2	430	4.9	1.5	0	2	0	0	0	1	1	0	0	0
TOTAL TREATMTS	**23**	**25961**	**295.8**	**2.0**	**2**	**18**	**2**	**0**	**1**	**6**	**16**	**1**	**0**	**0**

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

TABLE 21. NO RESPONSE COUNTY: 16 GROWERS REPORTED ON **9,598 ACRES** OF WHICH 2 GROWERS REPORTED NO HERBICIDE USED ON 1,580 ACRES AND 8,798 WERE ROUNDUP READY.

					NO. OF GROWERS REPORTING									
					WEED CONTROL						CROP INJURY			
TREATMENT	NO. RPTG.	ACRES TRTED	% OF TOTAL	Ave # App	NR*	EXC	GD	FR	PR	NR	None	Slt	Mod	Sev
A. SOIL APPLIED HERBICIDES:														
RR NO HERB	2	1580	16.5	1.0	2	0	0	0	0	2	0	0	0	0
NORTRON (PPI/PRE)	1	600	6.3	1.0	0	0	1	0	0	0	1	0	0	0
RR NORT (PPI/PRE)	1	310	3.2	1.0	0	0	0	0	1	0	1	0	0	0
TOTAL-PPI&PRE	4	2490	25.9	1.0	2	0	1	0	1	2	2	0	0	0
B. POSTEMERGENCE HERBICIDES:														
GLYP 0.75 LB	6	5849	60.9	1.7	1	5	0	0	0	1	5	0	0	0
GLYP 1.125 LB	1	4425	46.1	3.0	0	0	1	0	0	0	1	0	0	0
GLYP OTHER LB	3	4040	42.1	3.0	1	1	0	0	1	1	2	0	0	0
GLYP 1.0 LB	4	3260	34.0	2.3	1	3	0	0	0	1	3	0	0	0
BM+ST+UP+ASS+OIL	1	2400	25.0	3.0	0	1	0	0	0	0	0	1	0	0
RR STINGER	1	1000	10.4	2.0	1	0	0	0	0	1	0	0	0	0
GLYP+STINGER	1	364	3.8	2.0	0	1	0	0	0	0	1	0	0	0
GLYP+ASSURE II	1	120	1.3	2.0	0	1	0	0	0	0	1	0	0	0
TOTAL-POST	18	21458	223.6	2.2	4	12	1	0	1	4	13	1	0	0
C. PREEMERGE & LAY-BY HERBICIDES:														
GLYP (PRE)	1	800	8.3	1.0	0	1	0	0	0	0	1	0	0	0
TOTAL-PRE&LAY-BY	1	800	8.3	1.0	0	1	0	0	0	0	1	0	0	0
D. OTHER WEED CONTROL METHODS:														
CON CULTIVATIONS	1	800	8.3	1.0	0	1	0	0	0	0	1	0	0	0
RR CULTIVATIONS	2	592	6.2	1.0	2	0	0	0	0	2	0	0	0	0
TOTAL-OTHER	3	1392	14.5	1.0	2	1	0	0	0	2	1	0	0	0
TOTAL TREATMTS	**26**	**26140**	**272.3**	**1.8**	**8**	**14**	**2**	**0**	**2**	**8**	**17**	**1**	**0**	**0**

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

Table 22. Total sugarbeet acreage operated by survey respondents in 2011.

		Acres of sugarbeet										
County	Respondents	<50	50-99	100-199	200-299	300-399	400-599	600-799	800-999	1000-1499	1500-1999	2000+
		% of respondents										
Cass	8	-	-	12	12	12	50	-	12	-	-	-
Chippewa	9	-	11	22	11	11	-	22	11	11	-	-
Clay[1]	20	-	5	5	15	20	25	15	10	5	-	-
Grand Forks	13	-	8	8	8	8	31	23	-	8	8	-
Kandiyohi	4	-	-	50	-	-	-	25	-	25	-	-
Kittson	13	-	8	8	15	23	15	15	-	8	-	8
Marshall	14	-	-	29	7	-	36	21	-	7	-	-
Norman[2]	12	-	-	8	17	-	42	-	17	8	-	8
Pembina	15	-	-	13	7	7	20	13	13	13	7	7
Polk	53	2	6	2	7	13	30	25	4	6	2	4
Renville[3]	11	18	18	18	9	-	18	-	9	-	9	-
Richland	9	-	-	-	11	11	22	33	-	22	-	-
Stevens[4]	6	17	-	17	17	-	-	33	-	-	17	-
Traill	12	-	-	-	25	33	33	8	-	-	-	-
Walsh	13	8	23	15	-	15	31	8	-	-	-	-
Wilkin[5]	14	-	7	21	7	7	7	14	14	14	7	-
No Response	16	-	6	19	12	-	19	6	25	12	-	-
Total	242	2	6	11	10	11	25	16	7	7	3	2

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County

Table 23. A summary of the worst weed problem responses in conventional sugarbeet for the past 25 years.

Year	PIWE[1]	FXTL	COLQ	WIOA	WIBW	WIMU	KOCZ	COCB	SMWE	EBNS	COMA	LASA	VELE	WAHE	RAWE
	% of responses														
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	24	0	19	0	0	0	33	5	10	2	0	0	0	0	-
2009	25	0	41	0	0	0	23	2	2	0	0	-	0	2	2
2010	31	0	21	0	0	0	38	0	0	-	3	-	0	0	0
2011	33	0	20	4	0	0	27	0	2	-	2	-	0	0	0

[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, WAHE=waterhemp, and RAWE=ragweed.

Table 24. Worst weed problem in conventional sugarbeet by county in 2011.

County	Responses	KOCZ[6]	COLQ	PIWE	COMA	BIWW	SMWE	WIOA	YENU	No Prob.
		% of responses								
Cass	1	-	-	-	100	-	-	-	-	-
Chippewa	0	-	-	-	-	-	-	-	-	-
Clay[1]	0	-	-	-	-	-	-	-	-	-
Grand Forks	2	50	50	-	-	-	-	-	-	-
Kandiyohi	0	-	-	-	-	-	-	-	-	-
Kittson	1	100	-	-	-	-	-	-	-	-
Marshall	5	20	20	40	-	-	20	-	-	-
Norman[2]	1	-	100	-	-	-	-	-	-	-
Pembina	3	33	-	-	-	33	-	33	-	-
Polk	26	27	15	38	-	4	-	4	4	8
Renville[3]	0	-	-	-	-	-	-	-	-	-
Richland	0	-	-	-	-	-	-	-	-	-
Stevens[4]	0	-	-	-	-	-	-	-	-	-
Traill	3	33	33	33	-	-	-	-	-	-
Walsh	3	-	33	67	-	-	-	-	-	-
Wilkin[5]	0	-	-	-	-	-	-	-	-	-
No Response	0	-	-	-	-	-	-	-	-	-
Total	45	27	20	33	2	5	2	5	2	5

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County
[6]KOCZ=kochia; COLQ=common lambsquarters; PIWE=pigweed species; COMA=common mallow; BIWW=biennial wormwood; SMWE=smartweed; WIOA=wild oat; YENU=yellow nutsedge.

Table 25. A summary of the worst weed problem responses in RR sugarbeet for the past 4 years.

Year	Response	None	COCB[1]	KOCZ	COLQ	FXTL	PIWE	RAWE	SMWE	VELF	WIBW	WIOA	WAHE	RR Crops
		% of responses												
2008	57	54	0	7	7	0	16	-	0	0	5	4	2	5
2009	178	39	2	3	30	0	12	2	1	1	2	2	3	2
2010	246	30	2	4	23	1	17	2	2	1	5	2	5	2
2011	205	29	1	4	16	2	20	7	1	0	3	2	11	3

[1] COCB=common cocklebur; KOCZ=kochia; COLQ=common lambsquarters; FXTL=foxtail species; PIWE=pigweed species; RAWE=ragweed; SMWE=smartweed; VELF=velvetleaf; WIBW=wild buckwheat; WIOA=wild oat; WAHE=waterhemp; RR Crops=Roundup Ready crops.

Table 26. Worst weed problem in RR sugarbeet by county in 2011.

County	Responses	None	COCB[6]	KOCZ	COLQ	FXTL	PIWE	RAWE	SMWE	VELF	WIBW	WIOA	WAHE	Other[7]
		% of responses												
Cass	8	38	-	12	-	-	-	25	-	-	-	-	12	12
Chippewa	8	12	-	-	12	-	-	12	-	-	-	-	63	-
Clay[1]	19	16	-	-	11	5	42	-	11	-	-	-	5	11
Grand Forks	11	27	-	9	27	-	9	-	-	-	9	9	-	9
Kandiyohi	4	-	-	-	-	-	-	-	-	-	-	-	100	-
Kittson	10	30	-	10	10	-	30	-	-	-	-	10	-	10
Marshall	10	30	-	-	10	-	30	-	-	-	-	20	-	10
Norman[2]	12	17	-	-	33	8	17	17	-	-	-	-	8	-
Pembina	14	43	-	7	-	-	29	-	-	-	14	-	-	7
Polk	33	36	3	-	24	3	21	9	-	-	3	-	-	-
Renville[3]	11	-	-	-	9	-	18	9	-	-	-	-	55	9
Richland	9	33	-	-	22	-	33	-	-	-	-	-	11	-
Stevens[4]	5	-	-	-	40	-	20	-	-	-	-	-	40	-
Traill	10	70	-	10	-	-	10	10	-	-	-	-	-	-
Walsh	12	50	-	8	8	-	-	-	-	-	8	-	8	17
Wilkin[5]	14	7	7	-	29	-	29	7	-	-	14	-	-	7
No Response	15	40	-	13	13	7	7	20	-	-	-	-	-	-
Total	205	29	1	4	16	2	20	7	1	0	3	2	11	5

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Incluеds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County
[6] COCB=common cocklebur; KOCZ=kochia; COLQ=common lambsquarters; FXTL=foxtail species; PIWE=pigweed species; RAWE=ragweed; SMWE=smartweed; VELF=velvetleaf; WIBW=wild buckwheat; WIOA=wild oat; WAHE=waterhemp.
[7] Other=RR corn(1), RR soybean(1), RR canola(4), common mallow(2), biennial wormwood(3)

Table 27. 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									
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
2009	14	7	12	21	2	1	1	30	5	1
2010	14	6	8	5	2	1	3	53	5	1
2011	7	5	15	7	<1	1	1	54	3	<1

Table 28. Most serious production problem in conventional sugarbeet by county in 2011.

County	Responses	No Problem	Emerg/Stand	Aphanomyces	Rhizoctonia	Weeds	Herbicide Injury	Weather	Other[2]
		----------% of responses----------							
Cass	1	-	100	-	-	-	-	-	-
Grand Forks	2	-	-	-	50	50	-	-	-
Kittson	2	-	-	-	-	-	-	100	-
Marshall	4	-	-	50	-	25	-	25	-
Norman[1]	1	-	100	-	-	-	-	-	-
Pembina	3	-	-	-	33	-	-	33	33
Polk	26	8	4	8	23	31	4	11	11
Traill	2	-	-	-	50	50	-	-	-
Walsh	3	-	67	-	-	-	-	33	-
No Response	1	-	-	-	100	-	-	-	-
Total	45	4	11	9	22	24	2	18	9

[1] Includes Manohmen County
[2] Other= fusarium (1); late planting (1); spray application timing (1); spray drift (1)

Table 29. Most serious production problem in RR sugarbeet by county in 2011.

County	Responses	No Prob.	Emerg/ Stand	Rhizo- mania	Aphan- omyces	Rhizoc- tonia	CLS[6]	Root Maggot	Weeds	Herbicide Injury	Labor Mangmt	Weather	Other[7]
		----------% of responses----------											
Cass	8	-	12	-	50	12	-	12	-	-	-	12	-
Chippewa	8	12	-	-	25	12	-	-	-	-	-	50	-
Clay[1]	18	5	-	5	28	39	-	5	-	-	-	11	5
Grand Forks	11	-	-	-	9	73	-	-	-	-	9	9	-
Kandiyohi	4	-	-	-	25	75	-	-	-	-	-	-	-
Kittson	10	-	-	20	20	60	-	-	-	-	-	-	-
Marshall	9	-	-	-	67	33	-	-	-	-	-	-	-
Norman[2]	10	10	10	-	20	30	-	-	-	-	-	10	20
Pembina	12	17	17	-	17	17	-	8	-	-	8	8	8
Polk	33	12	-	9	18	43	3	-	3	-	-	6	6
Renville[3]	11	9	55	-	9	27	-	-	-	-	-	-	-
Richland	9	11	-	11	34	22	-	-	-	-	-	22	-
Stevens[4]	6	-	-	-	17	33	17	-	-	-	-	33	-
Traill	9	-	-	-	11	67	-	-	-	-	-	22	-
Walsh	12	17	8	-	8	42	-	-	-	-	-	25	-
Wilkin[5]	13	-	8	8	15	31	8	-	8	-	-	23	-
No Response	15	20	7	-	27	20	-	-	-	-	-	27	-
Total	198	8	7	4	22	37	2	2	1	0	1	14	3

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County
[6]CLS=Cercospora leaf spot
[7]Other= late planting (2); fusarium (1); proper seed bed (1); pulling bolters (1); bolters (1)

Table 30. Weeds in sugarbeet suspected of being resistant to glyphosate in 2011.

County	No. of Responses	COLQ[6]	WAHE	RRPW	WIBW	RAWE	COMA	CUDO	SMWE	Canola	PAAM
		----------% of responses----------									
Cass	3	-	33	-	-	67	-	-	-	-	-
Chippewa	4	-	75	25	-	-	-	-	-	-	-
Clay[1]	4	-	-	-	25	-	25	25	25	-	-
Grand Forks	4	25	-	-	25	25	25	-	-	-	-
Kandiyohi	1	-	100	-	-	-	-	-	-	-	-
Norman[2]	4	25	25	-	-	25	-	-	-	25	-
Polk	2	-	-	-	-	100	-	-	-	-	-
Renville[3]	5	-	80	-	-	-	-	-	-	-	20
Richland	1	-	100	-	-	-	-	-	-	-	-
Stevens[4]	1	-	100	-	-	-	-	-	-	-	-
Wilkin[5]	3	-	33	-	-	67	-	-	-	-	-
Total	32	6	41	3	6	25	6	3	3	3	3

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County
[6] COLQ=common lambsquarters; WAHE=waterhemp; RRPW=redroot pigweed; WIBW=wild buckwheat; RAWE=ragweed; COMA=common mallow; CUDO=curly dock; SMWE=smartweed; PAAM=palmer amaranth

Table 31. Sugarbeet acreage that was hand-weeded and sugarbeet acreage having suspected glyphosate resistant weeds in 2011.

County	Respondent acres planted	Hand-weeded	Having suspected glyp. resistant weeds
		----------% of planted acres----------	
Cass	3,471	0	<1
Chippewa	4,409	<1	4
Clay[1]	9,940	0	3
Grand Forks	7,457	6	9
Kandiyohi	2,186	0	14
Kittson	8,581	3	0
Marshall	6,250	11	0
Norman[2]	8,679	2	<1
Pembina	12,235	<1	0
Polk	32,329	3	<1
Renville[3]	4,387	7	4
Richland	6,613	0	<1
Stevens[4]	3,174	0	1
Traill	4,773	6	0
Walsh	4,100	7	0
Wilkin[5]	8,777	2	<1
No Response	9,598	0	0
Total	136,959	3	1

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County

Table 32. Cost of hand weeding in 2011.

		Dollars per acre														
County	Respondents	0[6]	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	8	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chippewa	9	89	-	11	-	-	-	-	-	-	-	-	-	-	-	-
Clay[1]	20	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Forks	13	85	-	-	-	-	-	-	15	-	-	-	-	-	-	-
Kandiyohi	4	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kittson	13	92	-	-	-	8	-	-	-	-	-	-	-	-	-	-
Marshall	14	93	-	-	-	-	7	-	-	-	-	-	-	-	-	-
Norman[2]	12	92	-	-	-	-	8	-	-	-	-	-	-	-	-	-
Pembina	15	93	-	-	7	-	-	-	-	-	-	-	-	-	-	-
Polk	53	89	-	-	-	4	4	2	-	-	-	-	-	-	-	2
Renville[3]	11	73	18	-	-	-	-	9	-	-	-	-	-	-	-	-
Richland	9	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stevens[4]	6	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Traill	12	92	-	-	-	-	-	-	-	-	8	-	-	-	-	-
Walsh	13	92	-	-	-	8	-	-	-	-	-	-	-	-	-	-
Wilkin[5]	14	93	7	-	-	-	-	-	-	-	-	-	-	-	-	-
No Respons	16	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	242	92	1	<1	<1	2	2	<1	<1	0	<1	0	0	0	0	<1

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County
[6]0 includes both 'No Response' and '0' responses

Table 33. Method of herbicide application in 2011.

Herbicide	Acres treated	Method of application: Band	Broadcast Ground	Broadcast Air
		----------% of acres treated----------		
Glyphosate (PRE)	4,868	0	95	5
Nortron / Other (PRE/PPI) Conv Beets	7,232	89	7	4
Nortron (PRE/PPI/) RR Beets	1,410	0	100	0
Outlook (Lay-By) Conv Beets	1,205	25	63	12
Stinger RR Beets	3,636	4	96	<1
Select Conv Beets	4,686	0	97	3
Select / Assure II RR Beets	8,388	0	100	<1
Betamix/Progress	6,171	11	80	9
Bmix/Prog+UpBeet	1,558	19	79	2
Bmix/Prog+UpBeet+Stinger+Oil	3,169	5	60	35
Bmix/Prog+UpBeet+Grass+Oil	1,445	2	98	0
Bmix/Prog+UpBeet+Stinger+Grass+Oil	19,848	14	69	17
Bmix/Prog+UpBeet+Stinger+Nortron+Oil	7,927	4	18	78
Bmix/Prog+UpBeet+Stinger+Nortron+Grass+Oil	**29,716**	**6**	**90**	**4**
Glyphosate (POST)	**235,219**	**2**	**94**	**4**
Glyphosate+Stinger	6,657	0	94	6
Glyphosate+Grass	2,643	0	100	0
Other Combinations Conv Beets	6,949	32	66	2
Total	352,727	5	88	7

Table 34. Percent of acres planted that were cultivated to control weeds in 2011.

	Roundup Ready Sugarbeet				Conventional Sugarbeet			
County	Number of Respondents	Acres Planted	Acres Cultivated	Acres Cultivated	Number of Respondents	Acres Planted	Acres Cultivated	Acres Cultivated
				% of acres planted				% of acres planted
Cass	8	3,313	527	16	1	158	316	200
Chippewa	9	4,409	3,143	71	0	-	-	-
Clay[1]	20	9,540	285	3	1	400	200	50
Grand Forks	11	5,755	0	0	3	1,702	1,202	71
Kandiyohi	4	2,186	600	27	0	-	-	-
Kittson	11	7,691	0	0	2	890	700	79
Marshall	10	3,960	114	3	6	2,290	1,386	61
Norman[2]	12	8,534	95	1	1	145	145	100
Pembina	14	11,542	1,890	16	3	693	404	58
Polk	33	15,812	1,721	11	27	16,517	16,244	98
Renville[3]	11	4,387	494	11	0	-	-	-
Richland	9	6,613	400	6	0	-	-	-
Stevens[4]	6	3,174	256	8	0	-	-	-
Traill	10	3,903	400	10	3	870	1,270	146
Walsh	12	3,340	632	19	3	760	1,788	235
Wilkin[5]	14	8,777	430	5	0	-	-	-
No Response	16	8,798	592	7	1	800	800	100
Total	210	111,734	11,579	10	51	25,225	24,455	97

[1]Includes Becker County
[2]Includes Mahnomen County
[3]Includes Faribault, Redwood, and Sibley Counties
[4]Inclueds Grant, Swift, and Traverse Counties
[5]Includes Ottertail County