

Saskatchewan Forage Market Report

As of January 2012



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1) Executive Summary

Coming out of 2011, forage prices remain lower than average in Saskatchewan. In 2010, the hay market was flooded with product due to excessive moisture, and in 2011, above average forage production only added to this already abundant supply.

Those that are in the livestock feeding sector are seeing the benefits of affordable forage available across the province. Those that are marketing the forage product, however, are dealing with a depressed market.

Demand for forages continues to be an unknown variable in the market equation. The Saskatchewan cow herd continued to decrease in 2011, but optimism and record prices in the beef industry appear to be sparking growth and possible retention for 2012. Hay exports were increased in 2011 as drought stricken areas in the southern United States imported some supplies of Saskatchewan hay and exports in the dehy and timothy markets also improved in 2011 slightly. However, there remains an abundance of hay in Saskatchewan, and it appears that demand did not place significant pressure on inventories.

Hay was a difficult product to move in Saskatchewan in 2011, and many producers retained product or sold it at a decreased price. In some situations, costs of cutting and baling were just covered. It appears that forage acres in some areas will continue to be converted into cropland as forage prices remain depressed.

Hay transportation rates increased through 2011 due to rising fuel costs and shop rates. This, along with the low hay prices, has discouraged the movement of hay long distances, with exception to those supplies that went into the southern US.

In 2011, some forage producers showed their entrepreneurial skills and ingenuity as they purchased round bales and converted them into large squares in order to access the demand for hay in the southern US. There may not have been a demand locally, but that didn't stop some producers from adapting their operations and practices in order to access a niche market.

The future of forage prices and supplies in 2012 are unknown, as many variables have yet to be determined, especially the weather. However, what is known is that the Saskatchewan forage industry is well positioned to continue to supply quality product to all end users, whether domestic or export. The industry is strong because of the producers that are a part of it and the networks of groups and organizations that ensure it is recognized and promoted as an important and critical industry in the province.

2) Recap of 2011 Growing Season in Relation to Forage Production

During the September 2011 survey, reports from around the province were all very similar. Abundant hay supplies were experienced in most areas and prices continued to be depressed. Above average hay yields in many areas, coupled with carryover feed stocks from 2010, resulted in an abundance of feed in the hay market.

Most areas had abundant moisture reserves from 2010 and timely rains that resulted in above average hay yields. Many areas also were graced with cooperative weather during cutting and baling and this resulted in a quality hay crop. Some areas of the province did experience flooding. This was largely due to excess moisture in 2010, coupled with excessive snow and rainfall in 2011. However, adequate to abundant hay supplies have been reported even in these areas. Hay land and pasture appeared to thrive on the remaining 2010 moisture reserves and timely rains in 2011 in many areas.

According to the yield estimates reported by the Saskatchewan Ministry of Agriculture Regional Forage Specialists, hay yields were above average in most areas for 2011. Based on these estimates, provincial hay yields were approximately 150% of the long-term average (Table 1).

Table 1. 2011 Saskatchewan Dryland Hay Yield Estimates (tons/acre)

Region	Report Date	Estimated 2011 Hay Yield	Long-Term Average for Region*
Tisdale	Sep 15	2.1	1.6
Prince Albert	Sep 15	2.0	1.5
North Battleford	Sep 15	1.4	1.4
Kindersley	Sep 15	1.5	1.1
Outlook	Sep 15	2.0	1.4
Watrous	Sep 15	1.9	1.4
Yorkton	Sep 15	1.9	1.5
Weyburn	Sep 15	2.0	1.3
Moose Jaw	Sep 15	1.9	1.3
Swift Current	Sep 15	3.0	1.3
Provincial Average		1.97	1.38

Source: Saskatchewan Ministry of Agriculture Regional Forage Specialists and Crop Reports

*Long-term yields based on combined available Saskatchewan Ministry of Agriculture data, 1984 to 1997 and 2008 to 2011

The 2011 Final Crop Report estimates topsoil moisture conditions on hay land and pasture as three percent surplus, 61 percent adequate, 29 percent short, and seven percent very short (see Appendix A for the 2011 Hay and Pasture Topsoil Moisture Conditions map provided by the Saskatchewan Ministry of Agriculture). It also estimates that livestock owners have surplus winter hay supplies going into winter, but that winter straw supplies will be short in some areas, especially the southeast. All areas, except for parts of the northwest and northeast, reported some type of straw shortage for some producers. All areas reported that producers have adequate supplies of hay, greenfeed, and feed grain, except for the southeast that reported two percent short.

Much like 2010, hay supplies were very abundant during the summer of 2011 and average forage prices have remained relatively low across most of the province. In September, grass and alfalfa/grass averaged \$53/tonne. This low price trend continued throughout the fall and into winter. For example, grass and alfalfa/grass hay prices averaged \$50-60/tonne from September through to December. The lower prices in that average were reported later into the fall, with

the higher end being reported earlier on. The reduction in asking prices that was seen through the fall was likely a result of producers lowering prices in an attempt to move hay inventories. Several hay advertisements remained listed month after month with no movement. In many scenarios, producers were unable to move their hay. This can be attributed to the abundant supply of forages and the fact that most producers have all the feed they need and more.

Optimism continues to grow in the beef industry as producers look towards the 2012 growing season. The fall of 2011 saw record prices on many levels in the beef industry. Although prices are up and optimism is blooming, expansion is still on hold. Cattle numbers in Saskatchewan are down slightly again this year (3.06 million head July 1, 2011 as opposed to 3.1 million head July 1, 2010 – Statistics Canada). This is largely due to the high cull cow values and bred cow values that are enticing producers to sell animals. Reports indicate that the average age of producers continues to increase. Those that do not have the next generation to enter the business are taking the opportunity to cash out while the market is high. Reports from auction markets affirm this as they report that dispersal sales continue in many areas. Other producers are taking advantage of high cull cow prices and are cutting deeper into their cow herd and culling harder than usual. The increases seen in bred cow and heifer prices are a positive signal for expansion, however it is unknown if the extent of retention is greater than the extent of liquidation. The optimism in the beef industry and the increased prices are anticipated to result in herd expansion at some point. Some marketers are anticipating that expansion could start in 2012. This would be an important factor for the forage industry, as beef cattle are an important consumer of forages. However, it is safe to assume that 2012 will not see a dramatic increase in demand for forages from the beef sector.

Other livestock sectors continue to demand forages as well. However, much like the beef industry, the demand is not enough to compensate for the abundant supply.

Mild weather was experienced in the fall and into early winter, with the exception of a short period of colder temperatures in November. This allowed many livestock producers to extend fall grazing and, thus, reduce demands for winter feed. Cold weather and snow hit most of Saskatchewan mid-January, and forced many producers to begin feeding their herds again. Many producers have reported that hay from 2010 is still being fed, and that 2011 hay supplies have not been needed yet.

Again, during this survey, several reports indicated that straw was a difficult product to source and that it was not in abundant supply in many areas. As more and more producers decide to spread straw behind the combine rather than drop it to bale, this commodity will continue to be more difficult to source. This was made even more challenging in areas that flooded in the spring and subsequently had little or no straw produced. Even though hay prices remain significantly depressed, straw prices are strong.

In 2011, forage prices have remained depressed and at what some call “a market floor price” in many areas. The cost of cutting and baling forage is estimated at \$39/tonne (Saskatchewan Ministry of Agriculture), and to sell baled hay below this price is not feasible. Even so, in some cases hay has been sold below this value in order to move the product and pay expenses. Because of the extremely low prices, some producers did opt to leave hay fields unharvested to retain the value of the residue, snow catch, and/or grazing. Forage production in 2012 and the resulting forage supply will have a significant impact on price levels going forward.

3) Field Pest Impact and Projections for Forages

Field pests can have devastating impacts on forage production with the type of field pest and the resulting severity of the impact variable from year to year and region to region.

Gophers (Richardson's Ground Squirrels) can cause problems on forage land in localized areas within the province, particularly with respect to forage crop establishment in the spring. However, the Saskatchewan Ministry of Agriculture Crop Reports in early 2011 reported that gophers were not causing excessive damage in many areas and that there appeared to be a population decline. The southwest region and more recently the west-central and east-central regions are generally the most affected regions. However, most areas in 2011 including these areas did not see the same population expansion as compared to normal. According to data from rodenticide sales, the "gopher rebate program" and reports from field staff and producers confirm that gopher populations appear greatly reduced in many areas of Saskatchewan in 2011. This is attributed to several factors including predation, disease, producers' control efforts, and unfavourable climatic conditions. The wet and cool conditions that were experienced in many areas this past spring are assumed to have increased mortality in gophers.

During the 2011 growing season, grasshoppers were not a significant problem due to the cool wet conditions. According to the Saskatchewan Ministry of Agriculture, the wet and cool climatic conditions in Saskatchewan in the spring of 2011, especially in southern regions, were not favourable for grasshopper development. The exceptions were areas that did not receive as much precipitation, including the northwest regions, and subsequently experienced higher populations of grasshoppers. The 2012 grasshopper forecast predicts a low risk for this pest in most areas of Saskatchewan. It indicates high risk areas for infestations mainly in the northwest (Meadow Lake) and the southwest (near the U.S. border) portions of the province. Lighter potential infestations are noted in the central (Watrous) and west-central (Kindersley) areas. Most areas of the province, however, are forecasted to have none to very light populations in 2012 due to the low populations experienced this past season (see Appendix A for the 2012 Grasshopper Forecast map from the Saskatchewan Ministry of Agriculture). Grasshoppers can affect perennial forage production and establishment through defoliation, most prominently when spring moisture conditions are low and the temperature is warm. The actual severity of grasshopper infestations in 2012 will depend primarily on these weather conditions.

The alfalfa weevil has traditionally only been a problem in the southeast portion of the province, but with the increase of populations in 2009, it was determined necessary by Saskatchewan Ministry of Agriculture and Agriculture and Agri-Food Canada to conduct insect sweeps across the province. This was intended to help determine those areas with a potential higher risk to alfalfa weevil. 2009 saw the weevil spread to areas north (Foam Lake) and west (Assiniboia). 2010 experienced a reduction in these populations and their spread due to excess moisture conditions. This past growing season started out similar to 2010 with cool wet conditions in the spring. The results were unexpected however, as 2011 saw a rise again in alfalfa weevil populations in many parts of the province (see Appendix C for 2010 and 2011 Alfalfa Weevil Survey Maps). The southeast, although very wet, had high populations with extremely high populations found near Churchbridge and Radville. Considerable biomass was lost in alfalfa fields that were not cut early. Field pest specialists indicate that these areas are at greater risk for high populations in 2012 and remedial action may be necessary, such as cutting early,

spraying, and controlled burning. Higher populations were also noted in the Yorkton area; however, producers seemed to be able to avoid biomass loss by cutting early. In 2010, alfalfa plant bugs were reported as a problem in several alfalfa fields in northeast Saskatchewan; however, in 2011, pea aphids were the most prevalent pest insects but it was assumed that damage from them was minimal.

For more detailed pest and disease information, please refer to Appendix B for the 2011 Saskatchewan Forage Insect and Disease Report presented to the Saskatchewan Advisory Council on Forage Crops on December 12, 2011, as well as Appendix C for the Saskatchewan Forage Insect Survey 2010 and 2011 published December 30, 2011.

4) Current Saskatchewan and Neighbouring Transportation Costs

At the time of this survey, the transportation industry in Saskatchewan indicated that costs have increased due to increased fuel costs and shop rates during the fall as compared to the average of \$5.75/loaded mile reported in the September 2011 forage survey. As seen in Table 2, rates average \$5.89/loaded mile or in the range of \$131/hr for short hauls. Companies not using an hourly rate indicated that they use a \$/bale rate, which ranged between \$2/bale+\$0.25/mile/bale - \$4/bale. Transport companies noted that if fuel costs continue to rise, inevitably transportation rates will follow, and subsequently, the cost of transporting hay in 2012 will be very dependent on any price fluctuations.

Several transport companies noted that business this fall was extremely busy due to the abundance of feed supplies to haul in many areas. This, added with the extended nice weather into the late fall and early winter, resulted in most bales being hauled off of fields or at least stacked on the field. Access to bales has been relatively easy as most areas have not received large amounts of snowfall. There have been some indications of hay still sitting out in the fields, however in these cases it was reported this is due to the inability of finding a buyer for the product. Most areas have abundant local feed supplies again resulting in shorter hauls. Some longer hauls have been going to Alberta, but these are minimal. For the most part, there is not a lot of movement of hay out of Saskatchewan at this time, with exceptions in the southern portions of the province that are reportedly moving hay into drought stricken areas of the United States.

Table 2. Transportation Costs for Forages in Saskatchewan

Location	Rate in \$/loaded mile (long hauls)	Rate in \$/hr (short hauls)
North	6.25	175.00
Northeast	6.00	125.00
Northwest	5.50	
West	6.25	
Central	6.80	133.00
East	6.00	106.00
South	5.50	
Southeast	5.00	125.00
Southwest	5.75	120.00
Average	5.89	131.00

A survey was also conducted in neighbouring provinces to help shed light on hay and feed transportation costs in Alberta and Manitoba. This information provides a gauge on transportation costs for hay being exported out of province, an important variable in overall forage price determination. Throughout Alberta and Manitoba current rates are reported in the range of \$5.00-\$6.30/loaded mile, with an average of \$5.83/loaded mile. Compared to the average rate reported in the September 2011 forage survey of \$5.71/loaded mile, there has been a slight increase for transportation in our neighbouring provinces. As was the case in Saskatchewan, transporters also attribute this increase to rising fuel prices. Short hauls are reported at \$100.00-125.00/hour with an average of \$113.00/hour. Refer to Table 3 for current hay transportation rates in regions of Alberta and Manitoba.

Table 3. Transportation Costs for Forages in Alberta (AB) & Manitoba (MB)

Location	Rate in \$/loaded mile (long hauls)	Rate in \$/hr (short hauls)
Northern AB	6.30	120.00
Northeastern AB		110.00
Eastern AB	6.00	125.00
Southern AB		108.00
Western MB	6.00	100.00
Central MB	5.00	
Average	5.83	113.00

During the September 2011 forage survey there were reports of demand for Saskatchewan hay going to the drought stricken areas of the southern US. These reports have been confirmed for the period since September. According to some hay producers and hay exporters in southern Saskatchewan, several loads of large squares crossed the border through the fall on route to the southern US. This was possible as many States suspended their transportation laws and regulations for hauling hay to help the drought stricken States gain access to much needed feed during the drought (see <http://www.gotexan.org/HayHotlineHome/HayWaiverInformation.aspx>). These State transport waivers are allowing round bales to be hauled through some States and have increased load size and weight specifications in others. It appears that these transport waivers

continue to be renewed every few months and, according to the Texas Department of Agriculture, they will hopefully continue to be renewed until the drought is over. Primarily large square bales were being hauled and continue to be hauled due to reduced load shifting as they are more conducive to transport. This is also due to some unsuspected transport regulations in certain States. This preference for large squares has made it a real niche demand as most hay is produced in round bales in Saskatchewan. However, some hay producers have reported that round bales were being converted into large squares in order to access this market.

Trucks on back-hauls continue to be used as a source of transportation. According to some hay exporters and hay brokers, it costs an estimated \$110-200.00/tonne to transport hay from Saskatchewan to the southern U.S. This is dependent on the back-haul and specific destination. There were reports of sales at the stack of \$88-150.00/tonne for some Saskatchewan hay during the September 2011 forage survey. Buyers then had the cost to transport the hay to their destination. Since then, according to some hay exporters, delivered prices have been reported as high as \$360-380.00/tonne delivered to Texas.

5) Current Saskatchewan Forage Prices

Table 4 reports the current prices for various types of forages in Saskatchewan derived from this survey. Numbers presented are collected from various sources including the fall 2011 and winter 2011/2012 Saskatchewan Ministry of Agriculture Feed and Forage Listing Service, hay and straw listings in the Western Producer from September 2011, weekly through January 25, 2012, as well as contact with feedlots, auction marts and hay growers/brokers throughout Saskatchewan.

In general, sources contacted during this survey indicated that prices remain very low as compared to average. The hay market became depressed in 2010 due to widespread abundant production flooding the market. Winter feed stocks carried over from 2010 and remaining in some areas in the spring and abundant production in many areas again in 2011 have resulted in a large supply of hay in Saskatchewan. During the spring and summer the market outlook was anticipating low prices, as yields appeared to be above average in most areas. Prices in the September 2011 survey averaged \$53/tonne for baled grass and alfalfa/grass hay and \$72/tonne for alfalfa. This remained very similar from the January 2011 survey which averaged \$52-67/tonne for the same products one year ago. Since September 2011, the market has adjusted to reflect actual supply with the result being further reduced prices. Prices for baled hay averaged \$51-64/tonne during this survey. In some cases a premium price is being paid above the average and can be attributed to exceptional quality or sales to a long-term customer. Second cut dairy quality alfalfa did average significantly higher (\$98/tonne).

There were significantly more asking prices than buying or settled prices. This was likely because of the fact that there has been very little movement of hay in most areas, even though abundant supplies are available. Most of the asking prices were compiled from September to January, and in several cases, product did not move. In 2010, hay producers and exporters may have assumed that hay prices reached a low point, but 2011 showed that the market had not hit bottom yet as prices reduced even further for first cut products.

Table 4. Saskatchewan Forage Prices as of January 25, 2012

Forage Type	# of Traders	Quantity (T)	High (\$/T)	Low (\$/T)	Weighted Average (\$/T)
Grass Hay	49	27,912	77	40	51
Alfalfa					
1 st Cut	52	18,160	83	48	64
2 nd Cut	16	7,868	145	77	98
Alfalfa Grass Mixed Hay	121	60,026	83	29	54
Organic Hay	11	2,569	67	43	60
Greenfeed	15	3,145	66	40	54
Clover	10	2,191	62	51	53
Straw – Cereal	39	13,589	55	28	42
Straw – Pulse	9	4,447	62	40	43

LEGEND: T = tonne (all prices in CDN \$ per metric tonne (\$/T))

Grass- Straight grass forage is less predominant than mixed stands of grass and legumes. However, auction marts in Saskatchewan seem to prefer high percentage grass hay (80-90% grass component) for young calves coming through their facilities. The wide range of prices seen in grass hay is largely due to the variability in quality of this commodity. Auction marts commented that they try to source high quality grass hay (thus demanding a higher price), while other users (feedlots or cow calf producers) can often utilize the lower quality, lower priced types of this product in their rations.

Certified Organic Hay- Several prices for certified organic hay were accessed during this survey. The asking prices for certified organic hay have decreased slightly since the January 2011 survey. During the January 2011 survey, asking prices averaged \$69/tonne, holding a slight premium over conventional forages. However, the September 2011 survey revealed a \$62/tonne average for organic hay, and during this survey asking prices average \$60/tonne, reducing this premium. This may suggest that more growers are marketing this certified organic product, and in order to

move product during these times of abundant forage supply, growers are forced to lower prices similar to the conventional hay market. The organic forage market is still relatively small with demand largely met by on farm supplies through seeded buffer strips and areas generally unfit to grow organic field crops. Clarity of organic forage and livestock production standards are still needed to create a stable, defined market for this commodity.

Greenfeed- In 2010, there was a significant supply of greenfeed, as unseeded acres during the spring were used to grow greenfeed. There was significantly less greenfeed found on offer this year compared to 2010 across the province. Although conditions were wet again this spring, and there were unseeded acres due to flooding, greenfeed acres seeded were down. This is likely due to the fact that flooded acres in many areas were not dry enough to seed in time, even for greenfeed. Also, some of the producers that did seed greenfeed opted to combine it instead and access the high feed grain market. This was then exemplified by the cooperative harvest weather in the fall that allowed most crops to be harvested and subsequently did not enter the feed market.

Clover- A few asking prices were found again for clover during this survey. However, clover remains a relatively uncommon feed source in Saskatchewan. Producers continue to focus on perennial forages that require fewer inputs as compared to a biennial like clover. Also, much of the product listed during this survey was mixed product of alfalfa, grass, and/or clover. Very little straight clover product was advertised. Feedlots and auction markets continue to use very little to none of this product, and it appears that producers grow clover for their own feed rather than as a marketed product.

Straw- The price of straw continues to rise in Saskatchewan. Reports from auction markets, feedlots, and producers noted that straw continues to be a difficult product to source in some areas. In some situations, where working relations are good and agreements have been long-standing, straw continues to move at an affordable rate. However, in most cases, prices are increasing. This is largely due to a changing mindset and awareness. Crop producers are realizing the benefits of spreading straw back on the land. They are also aware of the inconvenience, real or perceived, that may occur if dropped straw to be baled remains in the field until spring. These aspects are resulting in fewer farmers willing to drop straw to be baled, and in situations where they are willing, a higher price to compensate for the above issues is being required. During this survey, the price of straw averaged \$42-43/tonne. At these prices, straw is in the same range as low quality hay in this current market. As a result, some producers reported that they will use their older hay as bedding instead of purchasing straw.

Standing Forages- In the September 2011 price scan, standing forages averaged \$19/tonne. These relatively low prices were a result of abundant forage production throughout the province. Standing forage prices remained low throughout the final months of 2011 as a result of baled forage prices. With the cost of cutting and baling estimated at approximately \$39/tonne (Saskatchewan Ministry of Agriculture, http://www.agriculture.gov.sk.ca/avg1107_pg9), it is understandable that standing forage prices would be less than \$20/tonne, given the current baled forage prices. Also, because yields were generally above average again this year, few producers needed to source additional hay. Some producers reported that they were unable to sell their standing forage due to this lack of demand. In cases where standing forage was sourced in 2011, prices were between \$17-23/tonne depending on past agreements. The exceptions to these standing forage prices were those in the dehy industry, which averaged

\$34/tonne in 2011. This is largely due to the requirement for 100% alfalfa crop in good condition, which is more difficult to source in Saskatchewan than mixed grass hay crops.

Silage- The price of barley silage reflects the price of feed barley, and because feed barley prices have continually been on the increase since the fall of 2010, barley silage prices have also increased. The price of silage is captured by surveying feedlots across the province. In September 2011, feedlots surveyed expected to price barley silage in the \$43-57/tonne range for 2011, with an average of \$48/tonne. These prices were largely reflective of the increasing feed barley prices. At that time the price of feed barley ranged from \$3.50-3.80/bushel and climbing. The January 2012 barley price is reported at approximately \$4.00-4.50/bushel, and as feed barley prices go up, the cost of barley silage generally increases as well. As a result, during the January 2012 survey, a slightly higher range was discovered for barley silage between \$44-59/tonne with an average of \$51/tonne.

Many of the feedlots produce their own silage on their own land to a great extent. In those situations, most feedlots use a formula that incorporates the current barley price to set the value.

From consultation with several dairy operations it was discovered that alfalfa silage remained lower than barley silage, at \$36/tonne, and that this was largely reflective of the affordable price for alfalfa in the hay market.

Dehy Alfalfa- Production capacity continues to decline in western Canada. Alberta has one plant currently operating and Saskatchewan recently had a seasonal plant close down. Although forage acres continue to appear to be declining due to high prices in the grain and oilseed sector and depressed hay prices, companies did not have trouble procuring forage acres this year. This was largely due to the ample production supply that was available in 2011 and because some processors are able to provide their supply from their own forage stands. The average price paid for alfalfa standing crop in 2011 was \$34/tonne. This was much higher than the 2011 grass and alfalfa/grass standing crop average of \$19/tonne, largely due to the fact that straight alfalfa fields are less abundant in Saskatchewan, of higher quality, and have access to more market opportunities with exports versus conventional mixed hay fields. At this time, standing crop prices for 2012 are not available, but processors anticipate that it should remain stable until forage supplies are reduced. Increasing energy and transportation costs continue to have a negative effect on this industry in Canada, as well as the continually decreasing cow herd numbers and abundant supply of affordable hay. However, demand for dehy product appears to remain strong in the United States, Asia and the United Kingdom, with interest continuing to grow in the Middle East. Table 5 provides average dehy product prices in Saskatchewan for 2011.

Table 5. Saskatchewan Dehy Product Prices for 2011

Product Type	Price \$/T
*Dehy Pellets	223
**Sun-cured Pellets	210

(prices in \$ per metric tonne (\$/T))

*Dehy Pellets – alfalfa pellets made from standing alfalfa

**Sun-cured Pellets – alfalfa pellets made from baled alfalfa

Export Timothy: There is very little activity within western Canada in the export timothy market. The main players, however, remain in Alberta and Saskatchewan. Due to the high cost of freight, most companies source timothy locally.

Export companies are reporting that timothy yield was good. Very good quality was also reported by all companies and this was attributed to warmer temperatures and drier conditions during harvesting. Companies continue to access markets in the United States, primarily the dairy and equine industries. An increase in demand from the U.S. was noted largely due to the drought in the southern states. International markets for timothy continue to include Pacific Rim countries, with a large portion going to Japan. Markets and exports are growing in other countries including Korea, Indonesia, Europe and the Middle East.

Table 6 shows the average delivered prices paid for 2011 timothy crop in Alberta and Saskatchewan.

Table 6. Timothy Prices for 2011 Crop in AB & SK

Timothy Quality Level	Price \$/T
Horse Hay or Supreme	232
Premium	209
Choice or Low Premium	190
Standard	161
Utility	122
Off-Grade	93

(prices in \$ per metric tonne (\$/T))

6) Regional Forage Pricing Trends

Southwest: Reports from sources in this area including the Saskatchewan Ministry of Agriculture (SMA) Regional Forage Specialist indicate a surplus of hay. In many areas of this region, hay yields were two to three times greater than average. In some areas, straw is still in short supply, similar to other regions. Forage prices for this area were estimated between \$40-70/tonne in September 2011, and reports indicate that this is still the case. Higher quality hay or straight alfalfa seems to be demanding the top of that range. Most producers had carryover hay stocks from 2010, and this combined with above average supply in 2011 has made selling hay very difficult. There are reports of hay being transported from this area into the US. In one report, almost 2,000 bales were trucked down in multiple loads. This is helping to reduce supply, but has had little effect on the overall market. The demand from the southern States appears to be tapering off, but this will depend on the moisture received in these areas in the upcoming months. Auction markets report that cow dispersal sales continue in this area, also reducing the demand for hay. Livestock producers were also able to extend fall grazing into the winter in some areas, as above normal temperatures were experienced through December 2011. As a result, less feed than normal was fed during this period and it appears that there will be significant carryover after the winter feeding period.

South-central: The SMA Regional Forage Specialist in this region and reports from other sources indicate that there is a surplus of hay and that straw remains a difficult product to source. Production was well above average for producers in this region (150-200% above normal yields). Some locales did experience unfavourable haying conditions and, as a result, put up lower quality feed. However, in general quality was improved from last year due to favourable environmental conditions during haying operations in most areas. Reports indicate that hay is selling anywhere between \$55-70/tonne. There are also reports of hay heading south to Texas and Oklahoma from this area, but again, shipments were not substantial enough to drastically reduce the abundant supplies. Moisture levels going into 2012 are good and this is anticipated to translate into good forage yields on both pasture and hay land, as long as flooding is avoided. Winter feeding was also delayed in this region due to the warm December and carryover of feed supplies is anticipated in 2012.

Southeast: The SMA Regional Forage Specialist in this region and reports indicate an abundance of hay. Flooding was reported for certain areas in this region, but even so, the 2011 hay supply appears to be greater than normal. Hay fields were cut a little later in this region due to the late spring rains, and quality was slightly lower as a result of crops being more mature. The SMA Regional Forage Specialist also reported that alfalfa weevils were a problem in this area, and as a result, major leaf loss was experienced in hay fields that were not cut until August. Straw also appears to be in short supply in this region, and this is thought to be compounded by the flooding and unseeded acres in the area. Prices remain in the \$55-70/tonne range. There were also reports of hay being trucked into the States from this region. Apparently this was still focused on large squares, leaving the round bale market unaffected. One report indicated that some producers were unrolling round bales to convert them into large squares to truck south. The quantity of round bales used for this process is unknown, but it is assumed that not a significant number of bales were used to have much of an effect on the current local hay market. The SMA Regional Forage Specialist also noted that the limited snowfall thus far into the winter is positive as the area is going into 2012 with surplus topsoil moisture and any snowfall will add to spring flooding concerns.

East-central: The SMA Regional Forage Specialist and reports from sources in the area indicate an adequate to surplus supply of hay. Reports did note that several areas in this region experienced flooding. However, some of the flooded unseeded acres were used to seed greenfeed, and subsequently greenfeed supplies were greater than normal. The wet spring also resulted in late forage growth, but cooperative weather during haying operations made for quality hay. Straw appears to be in short supply and is hard to come by in this area, largely attributed to the flooding and unseeded acres. However, much like other areas, sourcing straw is becoming a difficult task even with seeded acres in close proximity. Prices are in the \$40-66/tonne range for hay with the higher prices related to good quality. It was also noted that large square bales are being purchased to move into the southern US. Again, the quantity marketed into these areas to date and through the winter is unknown, but it is assumed it will not have a drastic effect on the local hay market. Winter feed stocks should be adequate with above normal supply of hay and greenfeed, especially after the limited demand for feed in the early winter months. Much like the southeast, producers in this region are also hoping that excessive moisture is avoided during the first half of 2012 to reduce the risk of flooding.

Northeast: The SMA Regional Forage Specialist and reports from sources in the area indicate surplus supplies of hay. Yields were once again above average for this region. This was result of

adequate moisture reserves from 2010 and timely spring rains. The cooperative weather in the summer helped producers get the hay put up with little rain, resulting in good quality feed supplies. Prices for hay in the area are in the range of \$45-55/tonne, depending on quality. There is very little movement of hay in this region. Forage acres in the area did decline slightly as producers broke up land to sow cash crops. This trend is expected to continue into 2012 as hay prices remain depressed and cash crops become a more viable option for producers.

North-central: Reports from this area indicate a surplus of hay supplies. Straw supplies appear to be adequate as well. Hay prices in the area are in the \$45-50/tonne range however, excellent quality hay may be higher (estimated at \$50-70/tonne). Quality is better than last year in most cases. Winter feed stocks will likely be carried over into 2012 due to the above normal temperatures in December.

Northwest: Reports from sources in the northwest, including the SMA Regional Forage Specialist, indicate a surplus of hay and adequate straw. The spring saw frost in several areas in May, which definitely set back the alfalfa. Some areas did not receive any rain until into June, and this impacted maturity date. Once the rains came, hay fields grew and bloomed and average to slightly above average yields were taken off in most cases. Hay prices are reported in the \$55-66/tonne range. It was reported that this area did not see any product being trucked into the States, and that the cost of trucking and preference for large squares limited this option.

West-central: The SMA Regional Forage Specialist and reports from sources in the area indicate that hay supplies are abundant due to the above average hay yields. Moisture was adequate to above adequate in most areas resulting in 1.5 times greater yield than average. There were some dry pockets that did not receive adequate moisture and yields suffered as a result, but these were isolated areas. Quality is much better this year compared to last year due to improved weather conditions during cutting and baling. A lot less hay was rained on in the swath this year. The abundance of hay has kept hay prices low. It was reported that prices are in the range of \$40-60/tonne. Winter feed stocks are expected to remain into 2012 due to the abundant supply and the above normal temperatures in December. Straw supplies appear to be adequate in the area.

7) Current Alternative Feedstuff Prices

Producers are always searching for low cost feed and forage options and alternatives to meet animal nutritional requirements. Alternative feeds derived from annual crop production or ethanol production may provide options for producers but these decisions vary from year to year. These feeds may be used to completely replace or supplement forages in cow/calf rations or in feedlots and backgrounding operations. In a year when forages are extremely abundant and affordable, producers may not look to alternative feedstuffs as readily to supplement rations, but rather choose to feed more hay. In general, prices for these commodities are based on the current market prices for forages and feed grains. Table 7 reports prices for various alternative feedstuffs.

Table 7. Alternative Feedstuff Prices and Availability

Commodity	Price	Details	Availability
Grain Screening Products			
Screenings	\$155/T	#1 cracked wheat or durum	Some availability
Screenings	\$18/T	Light screenings, mainly chaff	Some availability
Screenings	\$86/T	Oat hulls	All contracted
	\$20/T	Loose	All contracted
Oilseed Products			
Canola meal and pellets	\$195/T	36% CP	Some availability
Commodity	Price	Details	Availability
Legume Products			
Alfalfa pellets	\$210/T	15-16% CP	Some availability
Grain Screening Pellets			
Grain pellets	\$169/T	12-16 % CP 63-80% TDN	4 week order wait at most facilities, good availability
Fortified grain pellets	\$186/T	12-17% CP 63-80% TDN with vitamin/mineral mix	4 week order wait at most facilities, good availability
Ethanol Production Byproducts			
Wet Distillers grains	\$31/T	33-35% DM 29-35%CP	Some availability
Dry Distillers grains	\$203/T	32-38% CP 69-76% TDN	Some availability
Distillers syrup	\$25/T	31% CP 82% TDN	All contracted

LEGEND: T = tonne (prices in \$ per metric tonne (\$/T))

Based on survey of companies in Saskatchewan as of January 25, 2012

Screenings- Grain merchants & large terminals generally have screenings contracted with feedlots or feed mills well in advance, leaving only small loads of this commodity available in most areas. Prices are up from last year due to increased feed grain prices. Grain merchants reported that screenings were easily sourced in the fall, but are now becoming increasingly difficult to source in 2012.

Canola meal & Canola pellets- Price is based off of the price of soybeans and soybean meal and can fluctuate daily. The price provided in the report is lower than last year. Some locations noted that most of this product is contracted into the US dairy feed market, but that small loads for local producers are sometimes available.

Alfalfa pellets- The price for these pellets is up slightly from last year due to increased market demand from exports. A standard dehy pellet, geared towards beef production, is readily available, but trucking costs often limit utilization. Primarily, dehy pellets are used by feed mills to go into specific rations.

Fortified grain screening pellets- The price of fortified grain screening pellets has gone up compared to prices from last year at this time. Again, this is largely due to the increase in feed grain prices that occurred in the past year. Most processors of this commodity indicate that demand is steady, but that supplies of screenings are tight in 2012. Most suppliers estimate a four week wait for delivery of this commodity.

Feed Grains- Prices for feed grains have continually been on the increase since the fall of 2010. Even since this past summer, prices continued to creep higher. The price of corn was extremely high through most of 2011 in the US, but did taper off through the fall. Feed barley has continued to increase in Canada, even through the fall, but the reduction in corn prices is assumed to be slowing this increase. Last year feedlots were seeing barley prices around \$3.50/bushel, and this extended through much of 2011. Now they are seeing prices at approximately \$4.00/bushel. As prices for feed grains continue to increase and prices for forages remain relatively affordable, there has been a decrease in feed grain use for livestock rations and an increase in forage use where possible. Some producers that have traditionally used feed grains to supplement hay when hay prices were high are now feeding more hay as supplies are abundant and prices are affordable.

A price survey in December 2011 showed feed grain prices as follows:

Feed Barley – December provincial average - \$185/T (\$4.03/bu)

Feed Wheat – December provincial average - \$194/T (\$5.27/bu)

Feed Durum – December provincial average - \$191/T (\$5.19/bu)

Feed Oats – December provincial average - \$180/T (\$2.78/bu for #2 or better)

8) Adjoining Jurisdictions Forage Price Trends

As transportation costs continue to limit the distance that forages can be moved, supply and demand for forages from the adjoining provinces and States will continue to have a minimal effect on the Saskatchewan forage market as a whole. Occasionally, however, demand from the northern US States dictates the forage prices in southern Saskatchewan or likewise for the eastern and western areas of the province when demand is high in Manitoba or Alberta.

Most of the Canadian Prairies saw adequate to abundant moisture throughout 2011, including parts of the northern United States. Forage production was average to above average in most areas. As a result, hay supplies were abundant, limiting the movement of Saskatchewan hay into Alberta, Manitoba, or the northern US. However, several southern States including Texas, Oklahoma, and Kansas to name a few, experienced severe drought through 2011. The drought was so severe that many livestock producers were forced to sell cows due to a lack of pasture and feed. This resulted in an immense demand for forage in that area. Most of the pull was from nearby States that could provide forage, but the demand spread north including Montana and North Dakota, and even from southern Alberta, Saskatchewan, and Manitoba. The demand

was mostly for large squares to facilitate transportation of hay long distances and to meet US transportation requirements. This drought resulted in increased hay prices in many States, with the greatest increases experienced in the south. Prices of \$360-380/tonne were reported for hay delivered to Texas from Saskatchewan. Hay prices also increased in the local markets of the northern States as hay product was pulled south. The amount of hay that actually ended up going south from Saskatchewan and the other Prairie Provinces is unknown, but reports indicated that this movement did occur to some degree. This demand did not result in an overall price increase for hay in Saskatchewan due to the abundant local hay supply and export preference for large squares. Reports also indicate that hay sales south did not have a significant influence on local hay markets in Alberta or Manitoba.

Table 8 shows the forage prices from listings in Alberta, Manitoba, Montana and North Dakota. Prices from the Alberta government listing were sourced only from the eastern side of the province and only from the western side of the province from the Manitoba government listing. Listings from Montana and South Dakota reflect those from northern counties.

Table 8. Forage Prices in Adjoining Jurisdictions

Forage Type	Alberta Listing	Manitoba Listing	Montana State Listing	North Dakota State Listing
Alfalfa	\$66-110/T (5 offers)	\$72-132/T (4 offers)	\$110-140/T (3 offers)	\$72-108/T (3 offers)
Alfalfa/grass	\$42-73/T (13 offers)	\$44-88/T (15 offers)	\$58-97/T (4 offers)	\$51-86/T (4 offers)
Grass	\$44-70/T (3 offers)	\$48-73/T (4 offers)	\$76-92/T (3 offers)	\$38-81/T (4 offers)
Straw	\$33-49/T (4 offers)	\$31-41/T (5 offers)	\$49/T (1 offer)	\$59/T (1 offer)
Greenfeed	\$42-66/T (4 offers)	\$66-72/T (3 offers)	\$70-81/T (2 offers)	\$76/T (1 offer)

As of January 25, 2012. All prices converted to Can\$/tonne.

The USDA weekly hay reports monitor settled prices for hay across auction houses in individual states. Table 9 shows the USDA prices for the week ending January 20, 2012

(http://www.ams.usda.gov/mnreports/to_gr310.txt & http://www.ams.usda.gov/mnreports/bl_gr310.txt).

Table 9. USDA Hay Prices

Forage Type	Eastern Wyoming	Central & Western Wyoming	Western South Dakota	Montana
Alfalfa				
Premium	\$205-259	\$183-199	\$108-162	\$183-216*
Good	\$194-248	\$124-129	\$92-113	\$92-119
Fair	-	-	\$86-92	\$81-97
Utility	-	-	\$75	-
Grass	\$119	\$135-162	\$70-75	\$81-108
Alfalfa/Grass	\$129	\$183-199	\$65-119	\$50-82
Straw	\$59-81	\$59-70	-	\$49-54
Timothy	-	-	-	\$162-194*
Greenfeed	\$119	\$129-140	\$70	-

All prices converted to Can\$/tonne. FOB stack in medium to large square bales and rounds unless otherwise noted.

*Small squares

Wyoming, South Dakota – hay trade very slow with many people reporting they are sold out for the year. Most hay moving is previously bought hay and a good percentage is moving south to the drought stricken areas. Demand is very good with very good buying inquiry noted in all areas. Very short supplies noted in most areas.

Montana – hay prices not well tested due to very few current sales. Prices reflect previously contracted hay sales. Trade activity is mostly light to inactive. Demand is moderate to good. Weather has been very cooperative which has kept the supplemental feeding to a minimum.

9) 2012 Provincial Forage Market Projections

According to the final Crop Report for the 2011 growing season issued by Saskatchewan Ministry of Agriculture (October 13, 2011), moisture conditions on hay land and pasture are rated as three percent with surplus moisture, 61 percent adequate moisture, 29 percent short, and seven percent very short. The surplus areas are localized in the southeast portion of the province, with the majority of the east side of the province being adequate. The short areas are concentrated primarily on the west side of the province, with localized areas central and northeast. The largest areas with the greatest deficits are in the northwest, with smaller localized areas in the central and southwest portions of the province. See Appendix A for a map of Hay and Pasture Topsoil Moisture Conditions.

SMA Regional Forage Specialists report that, similar to last year, there were very few calls regarding seeding of forages during the fall of 2011. In an average year, one call a day can be expected during the fall. This, along with other reports from across the province, continues to indicate a reduction in forage acres being seeded. Sources across the province have also reported forage acres that are being taken out of production to sow cash crops. It is projected

that forage acres will continue to decline in 2012 due to decreased cow numbers and depressed hay prices.

SMA Regional Forage Specialists agree that hay supplies are abundant in most places and that winter feed stocks will likely be carried over in 2012. Livestock producers were able to feed less feed than normal during late fall and into early winter due to above normal temperatures. If the winter is not extremely cold and long, it is inevitable that 2011 hay supplies will carry into 2012.

The one uncertain factor that always looms is environmental conditions in the upcoming growing season. The majority of the east side of the province is going into spring with adequate moisture, but the majority of the west side of the province is short. If adequate snow levels are not accumulated over the winter, and if rain is not adequate in the spring, the west could see a reduction in forage yields in 2012. If the east side of the province receives excessive snow levels this winter and excessive rain in the spring, flooding could again be an issue in these areas. As in all years, forage production in 2012 is going to be determined by the weather. And this will ultimately affect hay prices. The other variable to monitor will be beef herd numbers, as overall demand will factor into price discovery for forages.

10) Forage Seed Prices

Table 10 presents an inventory of commonly purchased forage seed prices compiled by surveying the major retail companies in the province. Three classes of forages are presented: grass, legume and native species. All prices are for certified #1 seed unless otherwise stated.

The native seed prices that are provided from retailers are generally spot prices as prices can fluctuate from day to day depending on availability.

For more on the forage seed industry, please refer to Appendix B for the 2011 Seed Production Committee – Industry Report presented to the Saskatchewan Advisory Council on Forage Crops on December 12, 2011.

Table 10. Forage Seed Prices in Saskatchewan as of January 25, 2012

Class	Species	Average Price \$/lb	High	Low
Grasses	Carlton Smooth brome	3.52	3.89	3.39
	Smooth brome (common)	3.34	3.59	3.17
	Fleet Meadow brome	3.44	3.49	3.29
	Meadow brome (common)	3.30	3.39	3.09
	Hybrid brome	3.79	3.99	3.69
	Russian Wildrye	5.46	6.99	4.89
	Tall Fescue	2.49	2.69	2.09
	Fairway Crested wheatgrass	3.04	3.19	2.99
	Kirk Crested wheatgrass	2.95	3.09	2.89
	Crested wheatgrass (common)	2.71	2.79	2.66
	Legumes	Alfalfa hay type	4.09	4.29
Alfalfa pasture type		3.89	4.09	3.67
Alfalfa (common)		3.44	3.79	2.99
Cicer milk vetch		3.89	4.17	3.65
Sainfoin		3.00	3.09	2.90
Alsike Clover		2.65	2.79	2.59
Sweet Clover		2.83	2.99	2.49
Sweet Clover (common)		2.44	2.49	2.29
Native	Western Wheatgrass	5.52	7.64	4.54
	Northern Wheatgrass	7.37	8.57	6.25
	Slender Wheatgrass	3.10	3.99	2.54
	Green Needlegrass	5.44	5.69	5.15
	June Grass	24.40	28.50	17.65
	Canada Wildrye	8.23	9.30	7.25
	Purple prairie clover	33.21	44.53	21.59

(prices in \$ per pound (\$/lb))

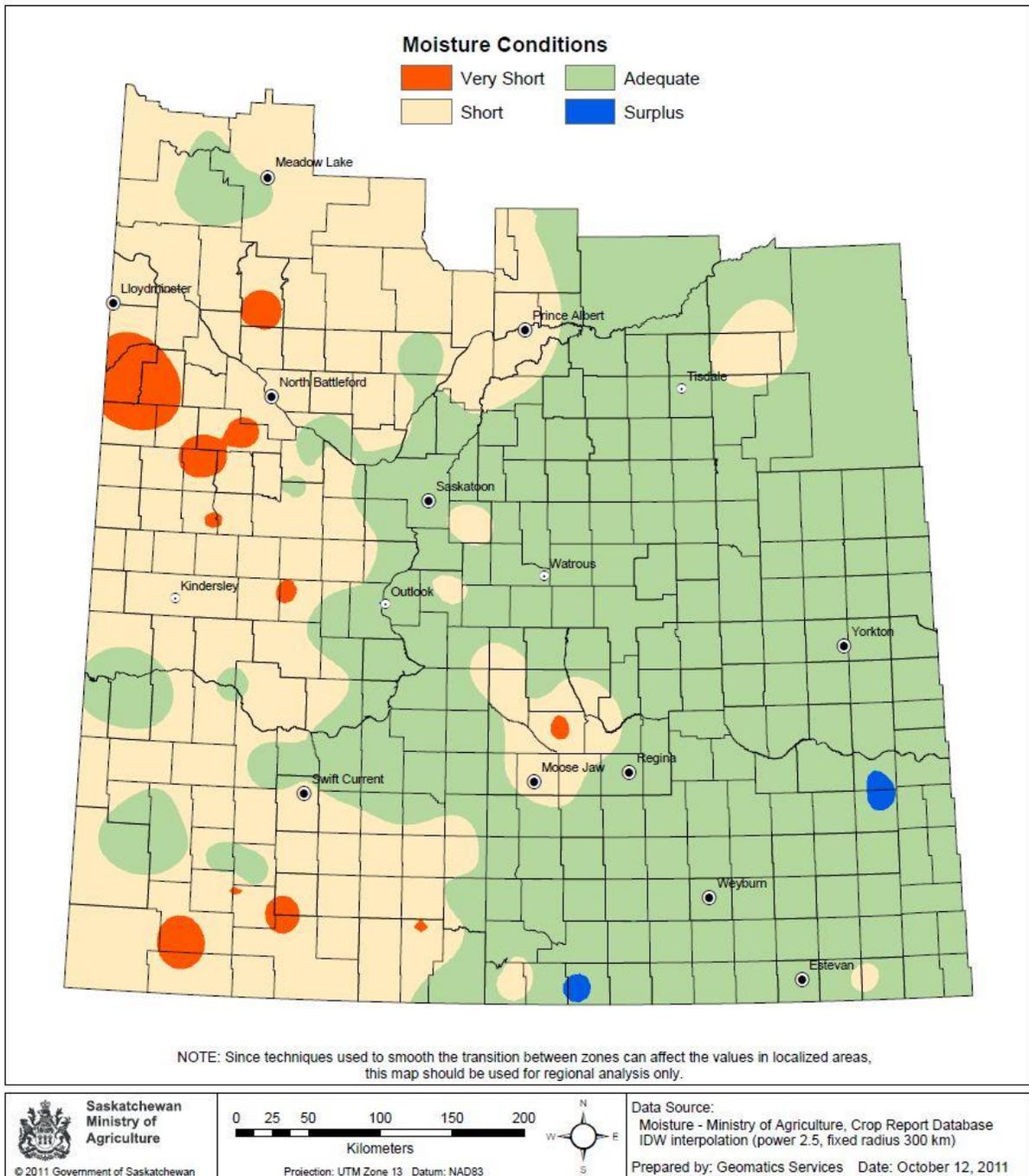
Appendix A: Saskatchewan Ministry of Agriculture Forecast Maps

2011 Hay and Pasture Topsoil Moisture Conditions

2012 Grasshopper Forecast

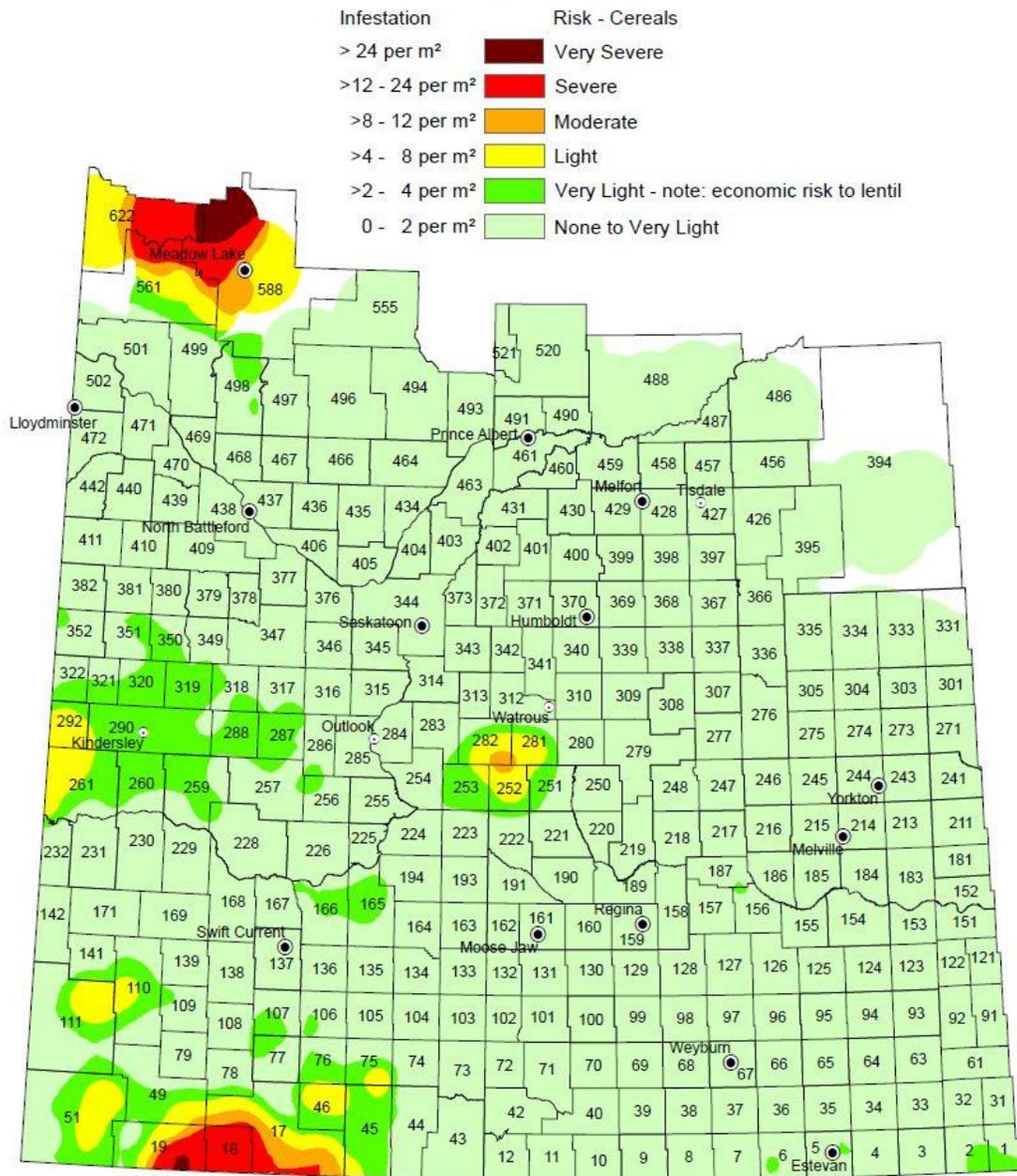
Hay and Pasture Topsoil Moisture Conditions

October 11, 2011



2012 Grasshopper Forecast

based on adult grasshopper counts



NOTE: Since techniques used to smooth the transition between zones can affect the values in localized areas, this map should be used for regional analysis only.

 <p>Saskatchewan Ministry of Agriculture</p> <p>© 2011 Government of Saskatchewan</p>	 <p>SCIC SASKATCHEWAN CROP INSURANCE CORPORATION</p>	<p>Data Source: Grasshopper Count - Saskatchewan Crop Insurance Corporation Field Staff</p> <p>Prepared by: Geomatics Services Date: November 14, 2011</p>
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Appendix B: Saskatchewan Advisory Council on Forage Crops Reports

2011 Saskatchewan Forage Insect and Disease Report

2011 Seed Production Committee – Industry Report

2011 Forage Insect and Disease Report

Presented to the Saskatchewan Advisory Council on Forage Crops

December 12, 2011 - Saskatoon

Forage Insects:

Contributions from: Dr. Juliana Soroka (AAFC, Saskatoon), Lorne Klein (Sask. Ministry of Agriculture, Weyburn), Clayton Myhre (PickSeed, Nipawin)

A Forage Insect Survey was conducted in 2011, coordinated by Dr. Juliana Soroka (AAFC, Saskatoon) and conducted by Regional Services Branch Forage Crop Specialists. Samples are currently being processed by AAFC. This survey was initiated due to concerns of increasing distribution and numbers of alfalfa weevil (Coleoptera: Curculionidae - *Hypera postica* (Gyll.) noted in the Province but the survey also includes information on other alfalfa insects – pest and beneficial.

Summary of Results: In 2010 48 alfalfa fields and in 2011 45 alfalfa fields across Saskatchewan were swept and the insects sent to Dr. Soroka's laboratory for identification. The excess moisture and generally cool weather in 2010 resulted in excellent alfalfa growth and poor insect development over the season. Alfalfa stands were lush and pest insect numbers were low over most of the province in this year. Even the highest alfalfa weevil numbers, 6.2 larvae/sweep near Cupar, SK, were much lower than published economic thresholds. In 2011 alfalfa weevil numbers in 33 of 45 fields were higher to much higher than found in the previous year, with five locations having weevil numbers greater than 30 larvae per sweep, and one field near Churchbridge having a high of 135 larvae / sweep. In 2010, samples from 19 locations had no alfalfa weevils, while in 2011, 10 locations were weevil-free. Most of these were in the western and northern areas of the province. The specialist parasitoid wasp *Bathyplectes curculionis* (Thomson) was reared from alfalfa weevil, a first Saskatchewan record. The numbers of *Bathyplectes* wasps and the numbers of locations from which they were collected were much lower in 2011 than in 2010, in inverse proportion to the number of weevils found in the two years.

Notes from the **North East Region** - Lesser clover leaf weevil (*Hypera nigrirostris*) was found in red clover fields in the northeast, with some spraying undertaken for control, although levels were generally lower than in years past. Brome grass seed midge (*Contarinia bromicola*) continues to be a concern.

Report to the Insects and Diseases Committee
Saskatchewan Advisory Council on Forage Crops
D.W. Goerzen, Executive Director
Saskatchewan Alfalfa Seed Producers Development Commission
December, 2011

Insects and diseases in Saskatchewan alfalfa leafcutting bee populations

The alfalfa leafcutting bee, *Megachile rotundata*, is an important pollinator of alfalfa for seed production in western Canada. Infestations of the chalcid parasitoid *Pteromalus venustus* are currently a problem in some alfalfa leafcutting bee populations. Another factor which may limit alfalfa leafcutting bee production is the occurrence of chalkbrood disease, *Ascosphaera aggregata*.

Occurrence of the chalcid parasitoid, *P. venustus*, was evaluated in the 2010 - 2011 winter survey of Saskatchewan alfalfa leafcutting bee populations. The parasitoid was detected in 0.35% (range 0.00 - 3.50% / sd 0.56%) of bee cells analysed from individual samples submitted by Saskatchewan alfalfa seed producers (n = 97). *P. venustus* was present in 56.7% of alfalfa leafcutting bee populations surveyed. Chalcid parasitoids have traditionally been controlled during the spring alfalfa leafcutting bee incubation period with dichlorvos resin strips; dichlorvos has been implicated in alfalfa leafcutting bee mortality and this compound is also among the organophosphate insecticides under review by the PMRA and the EPA. Research is currently being undertaken to identify and evaluate alternative compounds which might be efficacious for control of the chalcid parasitoid, *P. venustus*, in *M. rotundata* populations.

Occurrence of chalkbrood disease (*A. aggregata*) was also evaluated in the 2010 - 2011 winter survey of Saskatchewan alfalfa leafcutting bee populations. The disease was present at an extremely low level in bee cells analysed from samples submitted by Saskatchewan alfalfa seed producers (n = 97), with occurrence of the sporulating form of chalkbrood disease at 0.003% overall (range 0.00 - 0.32% / sd 0.032%) and occurrence of the non-sporulating form of chalkbrood disease at 0.016% overall (range 0.00 - 0.79% / sd 0.087%). Paraformaldehyde fumigation and bleach dipping treatment of alfalfa leafcutting bee nest material / alfalfa leafcutting bee cells are two methods currently utilized for control of a broad range of microflora, including *Ascosphaera* spp., occurring in alfalfa leafcutting bee populations.

Research to monitor parasitoid and disease levels in Saskatchewan alfalfa leafcutting bee populations and to develop strategies which will assist alfalfa seed producers in controlling these problems is ongoing.

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Forage and Turf Report for 2011

As presented to Western Committee on Plant Diseases

Oct 18, 2011, Kelowna, BC

B.D. Gossen

Disease situation

General

Wet conditions during the spring and early summer across large areas of the prairies resulted in an above-average forage crop. The wet conditions were likely conducive for foliar pathogens, and dry conditions after the first forage cut likely suppressed subsequent disease development, but no surveys or even informal assessments were conducted in any region.

Manitoba (Navreet Deol)

Forage and turf samples submitted to the MAFRI Crop Diagnostic Centre in 2011.

Crop	Symptom/ Disease	Causal agent	# Samples
Alfalfa	Common leaf spot	<i>Pseudopeziza medicaginis</i>	2
	Downy mildew	<i>Peronospora trifoliorum</i>	1
	Root rot	<i>Cylindrocarpon</i> sp.	1
	Spring black stem	<i>Phoma medicaginis</i>	1
	Stemphylium leaf spot	<i>Stemphylium</i> sp.	1
	Herbicide injury		1
	Nutrient deficiency		1
Bird's-foot trefoil	Botrytis flower blast	<i>Botrytis cinerea</i> .	1
Clover	Root rot	<i>Fusarium oxysporum</i>	1
Turfgrass	Anthracnose	<i>Colletotrichum graminicola</i>	2
	Leaf spot	<i>Dreschlera</i> sp.	2
	Herbicide damage		1

Saskatchewan (M. Tremblay, F. Dokken, B.D. Gossen) - Snow mold damage on fine turf was minimal. Infection was generally superficial and the turf recovered quickly. There were a few reports of leaf spots, and some concern (not confirmed) about ergot in seed production of grasses.

Alberta (C. Yoder) – There were reports of powdery mildew damage in red and alsike clover seed crops, stem eyespot damage to 2nd year creeping red fescue seed crops, and severe head smut in several fields of slender wheatgrass grown for seed in the Peace River region. No report was received from central or southern Alberta.

SASKATCHEWAN ADVISORY COUNCIL ON FORAGE CROPS

Seed Production Committee – Industry Report

December 12, 2011

Submitted by Michel Tremblay, Chair, SACFC Seed Subcommittee

Wet conditions persisted into the 2011 growing season, but by late spring/early summer, rainfall levels began to moderate. From mid summer on, temperatures were generally above normal and precipitation below normal. This weather pattern, in some cases, created less than optimal conditions for crop development, but generally provided good harvest weather.

Alfalfa yields varied by region. Northeast Saskatchewan yields were below average, with most fields producing 0-200 lbs/acre. Due to drier and warmer conditions during pollination, central Saskatchewan had average to above average alfalfa seed yields. Provincial average yields were 216 lb/ac (up to 400 lb/ac reported). Average leafcutting bee multiplication was 1.9 (range 1.7-2.2).

Red and sweet clover yields were average to above average, with yields of up to 600 lb/ac reported.

Table 1: Preliminary Acreage Data For Forage Crops in Western Canada*

Crop Kind	Total Acreage Inspected				Total
	MB	SK	AB	BC	
ALFALFA	7,428.28	16,660.00	20,028.00		44,116.28
BIRDSFOOT TREFOIL	4,720.00	290.00			5,010.00
BROMEGRASS	568.00	1,309.50	4,556.50		6,434.00
CANARYGRASS	158.00	877.15			1,035.15
CLOVER	920.00	1,060.35	1,620.00		3,600.35
FESCUE	2,699.20	135.00	6,587.08	1,001.00	10,422.28
RYEGRASS	22,556.50	1,253.55	264.00		24,074.05
TIMOTHY	12,765.00	2,221.55	8,486.00	2,583.00	26,055.55
WHEATGRASS		1,666.11	4,653.00		6,319.11

* The acreage listed above is not finalized and subject to change. Any use of this data should take this into consideration.

Cool temperatures and rain during pollination reduced the potential of the 2011 bromegrass crop, with yields from average to below average. Perennial ryegrass overwintered well, but flooding damage was common, and reduced yields. Perennial ryegrass yields were average to below average. The early season moisture favored timothy development, and yields ranged from average to up to 600 lbs/ac.

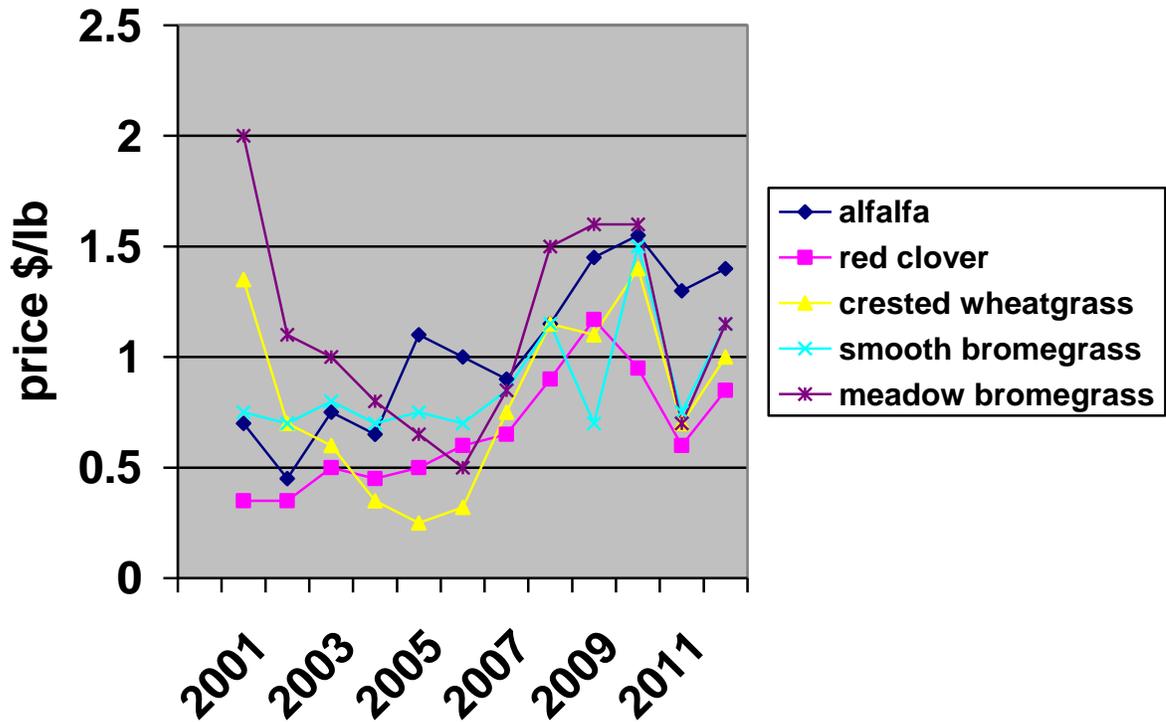


Figure 1. Saskatchewan forage seed prices (common seed, price to grower) for commonly grown species.

Forage seed prices have trended up in late fall of 2011, likely due in response to tightening supplies of forage seed. Relatively strong commodity prices in recent years have acted as a disincentive to increases in forage seed acres. The Saskatchewan Forage Seed Development Commission held their annual meeting on December 6 in Nipawin. Inspected acres of forage seed are down, and grower numbers have declined since last year. The SFSDC has research projects examining bromegrass midge control, pod sealant, and nitrogen fertility of forage seed grasses.

Appendix C: 2011 Saskatchewan Forage Insect Survey Report

Saskatchewan Forage Insect Survey 2010 And 2011

Juliana Soroka, Agriculture and Agri-Food Canada
Saskatoon Research Centre, Saskatoon, SK
December 30, 2011

Executive Summary: A two year survey of the insects in Saskatchewan alfalfa fields was conducted by Saskatchewan Ministry of Agriculture Forage Crop Specialists and analyzed by Agriculture and Agri-Food Canada entomologists. Alfalfa weevil was found in all regions of the province except the most northern and north western areas. Weevil numbers were much higher in 2011 than in 2010, and may have surpassed economic injury levels in some fields. The parasitic wasp *Bathyplectes curculionis* was also found, but its distribution was not well coordinated with that of the weevil. Alfalfa blotch leafminer presence was general throughout the province. In 2010 plant bugs, including lygus and alfalfa plant bugs, were the most frequently encountered pest insects, while in 2011 pea aphids were most prevalent. The surveys provided a snapshot of insect species and numbers present in forage alfalfa fields across the province.

Insects, particularly the alfalfa weevil, have been of growing concern to alfalfa hay producers of Saskatchewan for the last several years. The weevil, a long-time pest in south western Saskatchewan alfalfa fields, has recently spread across the province and into Manitoba. To determine the prevalence of this and other insect pests in the crop, in 2010 the Saskatchewan Ministry of Agriculture and Agriculture and Agri-Food Canada collaborated to conduct a survey of alfalfa fields across the province. The survey was repeated in 2011.

Ministry of Agriculture Forage Specialists sampled alfalfa fields across the province by sweep net and visual inspection of stems in the latter part of June and first part of July. Insects were collected from 10 walking sweeps at each of 10 locations per field using a standard 38 cm diameter insect sweep net. The insects were placed in plastic bags and sent to Dr. Julie Soroka at the Saskatoon Research Centre of AAFC. The forage specialists also examined three alfalfa stems at each of the 10 sites per field for evidence of feeding by the alfalfa weevil and in 2011 by the alfalfa blotch leafminer, an alfalfa pest new to the province. Dr. Soroka identified the insects and categorized them as pest, beneficial or other insects.

In total, 48 alfalfa fields were surveyed in 2010 and 45 in 2011, with an alfalfa content ranging from 50 to 100% per field. The scant snow cover prior to cold temperatures in the winter of 2009-2010 and the excess moisture and cool weather in the spring of 2010 resulted in poor insect population development over much of the province in that year. The milder winter of 2010-11 may have aided insect survival, for alfalfa weevils were found in greater numbers and in more locations in 2011 than in 2010 (Tables 1 and 2). The highest number of alfalfa weevils found in 2011 was in a field near Churchbridge, with 1350 larvae per 10 sweeps, while the highest number found in 2010 was 63 larvae per 10 sweeps at a field near Cupar. Twelve fields sampled in 2011 had alfalfa weevil numbers greater than 50 larvae per 10 sweeps, with only three of 48 fields reaching that level in 2010. Alfalfa weevils were present in 32 of 45 fields or 71% of the fields surveyed in 2011, while samples from 29 of 48 locations or 60% of fields had alfalfa weevils in 2010. In both years the lowest alfalfa weevil numbers were in the northern and north western areas of the province (Figures 1 and 2).

During the investigation the specialist parasitoid wasp *Bathyplectes curculionis* (Thomson) was reared from alfalfa weevil, a first Saskatchewan record. In total 26 *Bathyplectes* wasps were collected from 7 locations across the province in 2010; the greatest number of wasps per location, 9, was found at Cupar, which had the greatest number of alfalfa weevils (Table 1). In 2011 a total of 36 wasps was found at 8 locations; the greatest number per location, 19, was collected from a field near Maple Creek, the area of the province in which alfalfa weevils have been present the longest (Table 2). Although the wasp was found in most districts, if not actual fields, where alfalfa weevils were present, it was notably absent in the Yorkton area in 2011, where the alfalfa weevil infestation was heaviest (Table 2).

When considering the 30 alfalfa stems examined in each field, six of the 48 locations surveyed in 2010 had more than half of the stems exhibiting typical alfalfa weevil damage, while 12 of 45 fields had more than 50% of the stems damaged in 2011 (Tables 1 and 2). Damage was generally light, however, and in some cases may have been caused by grasshoppers or other weevils.

Because of the tremendous fluctuations in the price of hay, economic thresholds for alfalfa weevil in forage alfalfa are tenuous, and vary in format. The Ontario Ministry of Agriculture, Food and Rural Affairs recommends a threshold based on alfalfa height, with action necessary at weevil densities of 1 larva per 30 cm stem, 2 larvae per 40 cm stem, or 3 larvae at any length of stem. Iowa State University thresholds are 1 to 4 larvae per 30 cm stem when hay prices range from \$100/ton to \$40/ton, respectively. Other economic thresholds include 25-50% of leaves on the upper one-third of the stem showing damage (Bereza, 1977, Ontario Agdex 121/622), or 50-70% of terminals showing injury (Carpenter, 1970, J. Econ. Entomol. 63: 1602). Based on these numbers, it is likely that control of alfalfa weevil may have been warranted in several fields in 2011 but not in 2010.

In 2010 the most frequently encountered insect pests in 18 of 48 fields were lygus bugs (Table 3). Alfalfa plant bug (APB) was most numerous in 15 fields across the province in 2010, especially in the Tisdale and Kindersley districts (Table 3). As piercing sucking insects, lygus bug and alfalfa plant bug are not generally considered pests of forage alfalfa production, and economic thresholds for them in forage alfalfa are not known. However, heavy feeding by APB can stunt alfalfa growth and decrease fitness of the plant, and forage fields with high numbers of APB should be monitored for plant damage, especially in a drought year. Alfalfa weevils were the most frequently occurring pest insect species in five fields in 2010, notably in the south east. An assortment of insect pests including leafhoppers, grasshoppers, pea aphids, small black plant bugs (*Chlamydatus* spp.), and Sitona weevils (sweetclover weevil or clover root curculio) were the dominant insect pest in the remaining 10 fields surveyed in 2010.

2011 was the year of the aphid. Pea aphids were the dominant insect pest in 25 of the 45 fields sampled, while spotted alfalfa aphid, *Therioaphis maculata*, usually an infrequent alfalfa pest on the prairies, was the most numerous pest insect in an alfalfa field near Speers (Table 3). Although aphids were very common in 2011, the numbers found were unlikely to affect forage production, especially if crops were not drought-stressed. Second to aphids as the most commonly encountered pest insect in 2011, and generally much more abundant, was alfalfa weevil, the dominant herbivorous insect in 11 alfalfa fields. Lygus and alfalfa plant bug were most numerous in seven fields across the province, while leafhoppers dominated in one alfalfa field surveyed in 2011.

Most fields had an array of beneficial insect species in both years. Minute pirate bugs, efficient predators of pea aphids and other insects, were the most numerous beneficial insect in 27 fields in 2010 and 15 fields in 2011. An assortment of parasitic wasps dominated the beneficial insect category in 17 fields in 2010 and in 21 fields in 2011, and spiders were the most frequent predator in four fields in 2010 and seven in 2011. Other beneficial insects sampled were damsel bugs (the main predator in one field in 2011), ladybird beetles, syrphid fly larvae, rove beetles, big-eyed bugs, tiger beetles, and assassin bugs. In 2011 many sites had notable numbers of dragonflies and damselflies, possibly a reflection of high numbers of mosquitoes in the same samples.

In 2010, 15 of 35 samples of foliage submitted with the insects had evidence of alfalfa blotch leafminer – either stippling of leaves made by female flies, or the actual mines and larvae of the miners (Table 4). This pest insect reached the province from Manitoba about 10 years ago, and has been spreading west and northward since that time. In 2011 the stem samples examined in the field for alfalfa weevil damage were also examined for signs of alfalfa blotch leafminer presence, which was found in 32 of 42 locations. The only district not to have evidence of the fly was Prince Albert in both years, suggesting that it has spread throughout the province.

The surveys provided a snapshot of insect species and numbers present in forage alfalfa fields across the province. It is unlikely that insects were a production problem in 2010, but in 2011 high alfalfa weevil numbers in the south eastern corner of the province had the potential to decrease forage yields drastically, and if left unchecked may have compromised the crop's ability to produce economic yields of hay in 2012.

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Table 1. Alfalfa weevil and parasitic wasp *Bathyplectes curculionis* levels in alfalfa fields across Saskatchewan, 2010.

Location	Alfalfa weevils/ 10sweeps	% stems damaged	<i>Bathyplectes</i> /field	Location	Alfalfa weevils/ 10sweeps	% stems damaged	<i>Bathyplectes</i> /field
Shaunavon	0	0	0	Saskatoon	0.2	6.7	?
Vidora	0	0	0	Asquith	0	3.3	?
Maple Creek	7.1	0	0	Conquest	0.1	13.3	0
Swift Current	0	0	0	Elbow	3.2	3.3	5
Moose Jaw	52.9	90	0	Davidson	1.2	10	0
Chamberlain	21.3	87	0	Nokomis	6.2	16.7	0
La Fleche	0.1	10	0	Stalwart	0.5	10	0
Bengough	1.8	30	1	Raymore	10.3	100	5
Mortlach	56.0	93	0	Cutknife	0	0	0
Coronach	0.5	30	0	Neilburg	0	0	0
Gladmar	1.1	3.3	0	Lashburn	0	0	0
Estevan	13.0	17	0	Maidstone	0	0	0
Redvers	11.1	20	1	Edam	0	0	0
Cupar	62.9	93	9	N Battleford	0	0	0
Weyburn	22.8	30	1	Speers	0	0	0
Indian Head	11.5	73	4	Borden	0	0	0
Melville	7.1	33	0	Middle Lake	0	23.3	0
Preeceville	0.2	16.7	0	Wakaw	0.1	3.3	0
Norquay	3.8	20	0	Duck lake	0	20	0
Churchbridge	10.1	16.7	0	Canwood	0	10	0
Marengo	0	0	0	Star City	0	0	0
Lemsford	0.1	0	0	Rose Valley	0	0	0
Fiske	0.3	3.3	0	Arborfield	0.1	0	0
Coleville	0	3.3	0	Humboldt	0.2	0	0

Table 2 Alfalfa weevil and parasitic wasp *Bathyplectes curculionis* levels in alfalfa fields across Saskatchewan, 2011.

Location	Alfalfa weevils/ 10 sweeps	% stems damaged	<i>Bathypl- ectes</i> /field	Location	Alfalfa weevils/ 10sweeps	% stems damaged	<i>Bathypl- ectes</i> / field
Shaunavon	0	53	0	Saskatoon	0.7	0	0
Vidora	0.3	30	2	Grandora	0.1	0	0
Maple Creek	25.3	83	19	Macrorie	0.2	13.3	0
Swift Current	1.6	6.7	0	Elbow	10.5	10	0
Moose Jaw	314	3.3	0	Davidson	18.9	23.3	3
Chamberlain	179	70	0	Nokomis	22.1	36.7	0
La Fleche	10.9	36.7	2	Stalwart	8.2	30	0
				Raymore	59.3	76.7	1
Mortlach	132	3.3	0	Cutknife	0	10	0
Coronach	4.3	3.7	0	Neilburg	0	10	0
Gladmar	27.8	30	0	Lashburn	0	6.67	0
Estevan	270	96.7	2	Maidstone	0	10	0
Redvers	666	90	0				
Broadview	258	83.3	0	NBattleford	0.1	3.57	0
Weyburn	619	80	6	Speers	0	13.3	0
Indian Head	949	100	0				
Melville	243	76.7	0	Middle Lake	0	50	0
Preeceville	7.5	30	1	Wakaw	0.2	6.67	0
Norquay	112	63.3	0	Duck Lake	0.3	16.7	0
Churchbridge	1350	96.7	0	Debden	0	6.67	0
Marengo	0	6.7	0	Star City	0.1	16.7	0
Lemsford	0.1	0	0	Rose Valley	29.8	0	0
Fiske	0	0	0	Arborfield	0	0	0
Coleville	0	3.3	0	Humboldt	0	0	0

Table 3. Pest insects with the greatest number of individuals swept from alfalfa fields, Saskatchewan.

2010		2011		2010		2011			
Location	Pest	No./10 sweeps	No./10 sweeps	Location	Pest	No./10 sweeps	No./10 sweeps		
Shaunavon	Lygus	7.8	Pea aphid	37.8	Saskatoon	Lygus	13.0	Pea aphid	115.2
Vidora	Lygus	10.5	Pea aphid	36.2	Asquith	Lygus	6.0	Pea aphid	150.5
Maple Creek	Grasshopper	11.5	APB	64.2	Conquest	Lygus	9.0	Pea aphid	90.8
Swift Current	Grasshopper	7.0	Pea aphid	223	Elbow	APB	87.5		
Moose Jaw	Alf weevil*	52.9	Alf weevil	314	Davidson	Leafhopper	18.3	Pea aphid	219.8
Chamberlain	APB	51.0	Alf weevil	180	Nokomis	Lygus	47.8	Pea aphid	197.0
LaFleche	Lygus	8.0	Pea aphid	46.5	Marengo	APB	83.0	Lygus	65.5
Mortlach	Alf weevil	56.0	Alf weevil	131	Lemsford	APB	13.8	Pea aphid	73.8
Coronach	APB	42.0	Pea aphid	71.5	Fiske	APB	40.3	APB	258.8
Bengough	Lygus	15.5			Coleville	APB	90.0	Lygus	79.8
Stalwart	Lygus	12.5	Lygus	23.2	Maidstone	Lygus	1.8	Pea aphid	497.0
Raymore	Lygus	17.0	Alf weevil	59.3	Cut Knife	Lygus	3.6	Pea aphid	137.5
Gladmar	APB**	10.3	APB	79.8	Neilburg	APB	1.3	Pea aphid	101.0
Estevan	Sitona	14.5	Alf weevil	270	Lashburn	<i>Chlamydatus</i>	1.7	Pea aphid	641.2
Redvers	Alf weevil	11.1	Alf weevil	666	Edam	Lygus	2.8		
Cupar	Alf weevil	62.9			N. Battleford	Lygus	6.5	Pea aphid	497.0
Broadview			Pea aphid	56.8	Speers	Lygus	13.1	S a aphid**	65.2
Weyburn	APB	41.5	Alf weevil	619	Borden	Pea aphids	4.1		
Indian Head	APB	32.0	Alf weevil	949	Debden	Leafhopper	24.0	Pea aphid	151.2
Melville	APB	10.5	Alf weevil	243	Middle Lake	Lygus	9.3	Pea aphid	167.8
Preeceville	Pea aphid	23.5	Leafhopper	97.5	Duck Lake	Leafhopper	57.8	Pea aphid	147.0
Norquay	<i>Chlamydatus</i>	34.3	Alf weevil	112	Fish Creek	Lygus	16.1	Pea aphid	77.8
Churchbridge	Alf weevil	10.2	Alf weevil	1348	Star City	APB	50.8	Pea aphid	58.0
					Rose Valley	APB	41.8	Pea aphid	37.0
					Arborfield	APB	91.8	Pea aphid	77.5
					Humbolt	Lygus	16.3	Alf weevil	24.0

* Alf weevil – alfalfa weevil ** APB – alfalfa plant bug ** S a aphid – spotted alfalfa aphid

Table 4. Alfalfa blotch leafminer presence in alfalfa fields across Saskatchewan, 2010-2011 (number of mined or stippled leaflets per 10 stems in 2010 and per 30 stems in 2011).

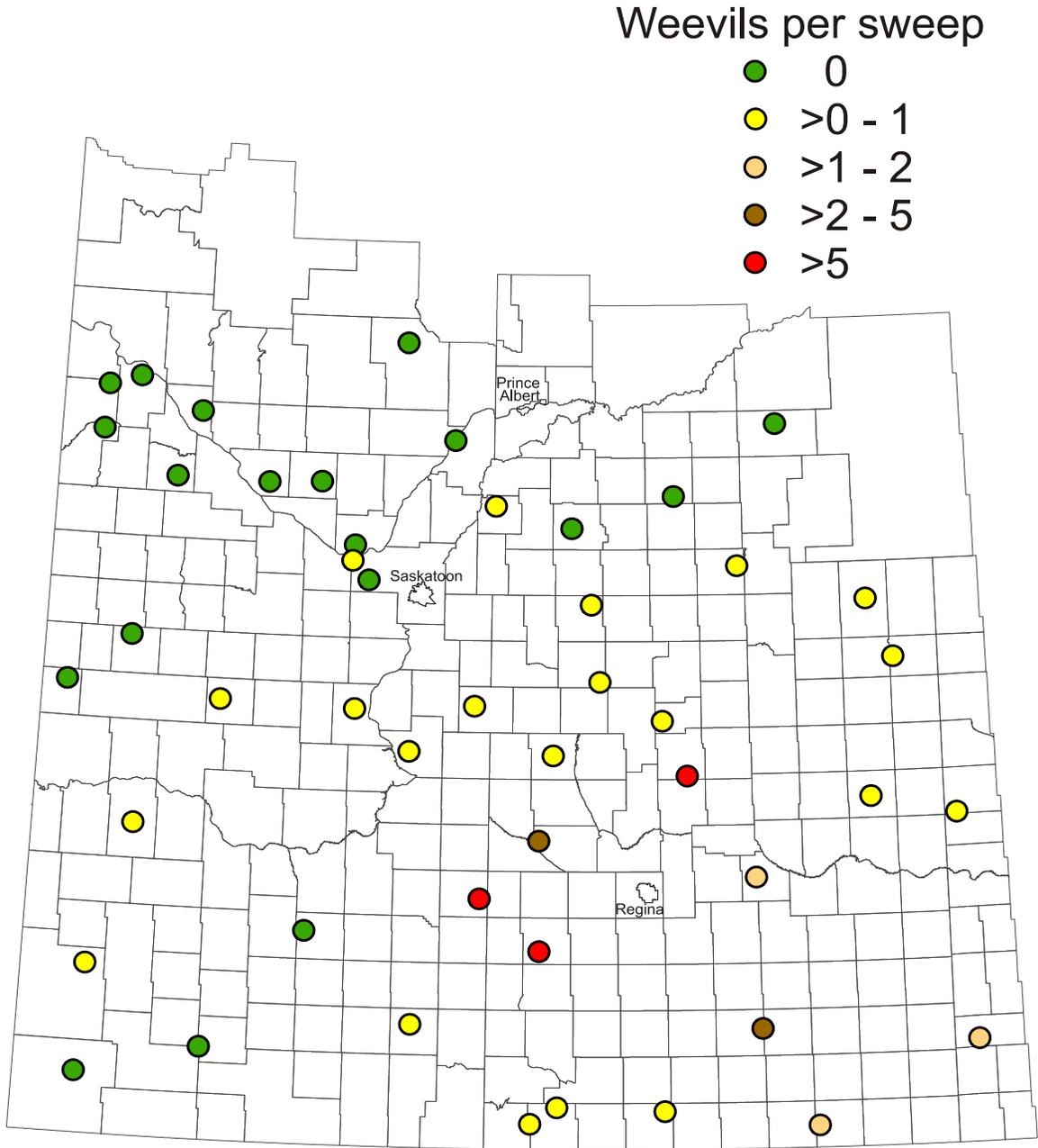
Alfalfa blotch leafminer					
	2010	2011		2010	2011
Shaunavon	0	1	Saskatoon	.	3
Vidora	0	5	Asquith	.	7
Maple Creek	0	5	Conquest	0	6
Swift Current	1	2	Elbow	1	2
Moose Jaw	5	14	Davidson	0	7
Chamberlain	7	8	Nokomis	2	8
LaFleche	1	0	Marengo	0	4
Mortlach	2	6	Lemsford	0	1
Coronach	1	1	Fiske	1	3
Bengough	0	.	Coleville	1	0
Stalwart	0	14	Maidstone	.	17
Raymore	1	22	Cut Knife	.	5
Gladmar	0	1*	Neilburg	.	7
Estevan	0	.	Lashburn	.	14
Redvers	0	.	Edam	.	.
Cupar	1	.	N. Battleford	.	0
Broadview	.	.	Speers	1	0
Weyburn	2	1*	Borden	.	.
Indian Head	0	0*	Debden	0	0
Melville	0	12	Middle Lake	0	0
Preeceville	1	10	Duck Lake	0	0
Norquay	0	20	Fish Creek	.	0
Churchbridge	.	25	Star City	.	4
			Rose Valley	.	4
			Arborfield	0	1
			Humbolt	0	0

. - not sampled for ablm

*- samples of 10 terminal leaflets

Figure 1. Distribution of alfalfa weevils across Saskatchewan 2010.

Alfalfa Weevil Survey 2010



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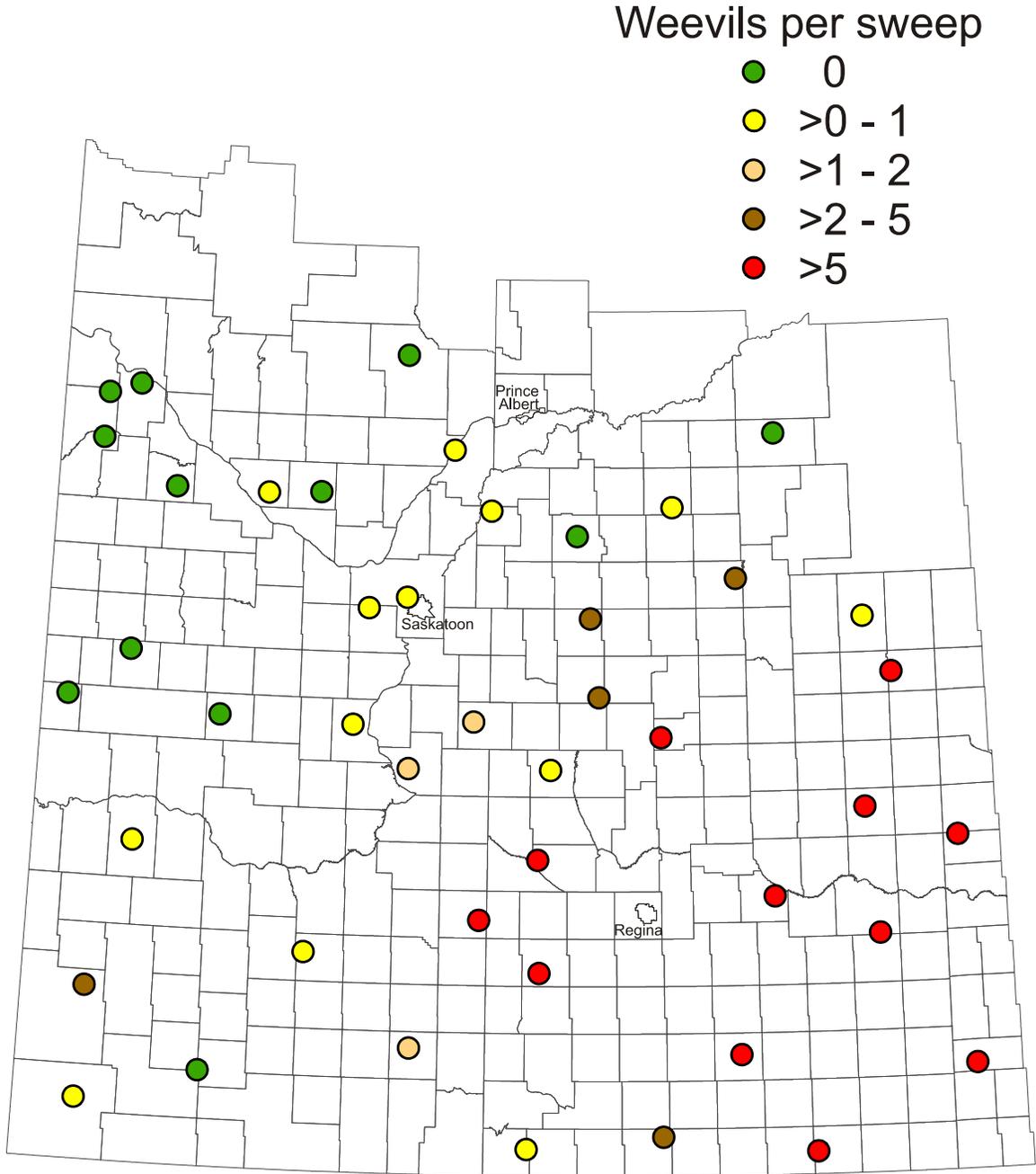
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Figure 2. Distribution of alfalfa weevils across Saskatchewan 2011.

Alfalfa Weevil Survey 2011



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