

ADOPT Final Report-Project #20090476

Project Identification

1. **Project Title:** Annual Forages Species Demonstration
2. **Project Number:** 20090476
3. **Producer Group Sponsoring the Project:** Saskatchewan Forage Council (SFC)
4. **Project Location(s):**
 - Estevan, SK- Chad Ross
 - Rosetown, SK-Don and Wayne Russell (Jadoway Farms Ltd.)
 - Nokomis, SK-Rick Hards
5. **Project start and end dates:** April 2010-February 2013 (Extension was granted due to wet weather resulting in seeding of the third site being delayed until 2012)
6. **Project contact person and contact details:**

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Objectives and Rationale

7. Project Objectives

This project demonstrated annual forage species for fall and winter grazing at three sites in Saskatchewan. The species included were: oats, barley, Golden German millet, and corn. The oats, barley and millet were swath grazed while the corn was grazed standing. The objective of this project was to help producers determine if annual forages for fall and winter grazing is a viable option for their operation, and which forage species are suitable for conditions in their area.

8. Project Rationale

Regional Forage Agrolgists and the Saskatchewan Forage Council continue to receive inquiries from producers about the various crop options for fall and winter grazing. This demonstration gave producers the opportunity to view both cool season and warm season forage species on five acre plots on operations in Saskatchewan in order to evaluate the applicability of these species for their own operations. This project demonstrated the research conducted at several locations in Saskatchewan during 2002-2004 and published in 2007 by May et al: "The suitability of cool and warm-season annual

cereal species for winter grazing in Saskatchewan". Can. J. Plant Sci. 87:739-752. That study concluded that oats and barley are somewhat lower risk forage crops due to their relatively stable yield over years and locations. The range of yields for the warm season crops (millet, corn) is greater compared to oats and barley. Therefore warm season crops are higher risk. When the agronomics and environmental conditions are not suitable, yields of warm season crops can be disappointing. However, when the agronomics and environmental conditions are favourable, yields can be rewarding.

Methodology and Results

9. Methodology

The project was conducted at three producer co-operator sites:

- Estevan, SK- Chad Ross
- Rosetown, SK-Don and Wayne Russell (Jadoway Farms Ltd.)
- Nokomis, SK-Rick Hards

Lorne Klein, Charlotte Ward, John Hauer, and Nadia Mori, Forage Specialists with the Saskatchewan Ministry of Agriculture took the lead with planning and set-up, co-ordination, data collection, field observations, and sharing the results.

The Estevan and Rosetown sites were seeded during the spring of 2010. A third site at Earl Gray was not seeded in 2010 or 2011 due to excess moisture. This site was replaced by a site at Nokomis that was seeded in 2012. The sites each included four (4) treatments of approximately five (5) acres each.

Treatments included:

1. Corn (Fusion RR at Estevan, Hyland 8LSR06 RR at Rosetown, Pioneer P7213 RR at Nokomis);
2. Golden German Millet;
3. Barley (variety – Cowboy);
4. Oats (variety – Baler)

Proso millet was also included as a treatment by the cooperator at the Estevan site. A pre-seed burn-off with glyphosate was used at all sites as a weed control method with corn being sprayed again with glyphosate after seeding (approximately four weeks post seeding). All three sites were seeded with an air seeder and the recommended blend of fertilizer applied (based on soil tests). Yield estimates for all sites were determined by clipping 5-10 quadrats prior to crop swathing, or at crop maturity (for corn). The table below shows the seeding and clipping dates for all three sites.

Seeding and Clipping Dates for ADOPT Annual Forages Project at Estevan, Rosetown and Nokomis

Activity	Corn	Golden German Millet	Barley	Oats	Proso Millet
Estevan Site					
Seeding	May 18/2010	June 28/2010	June 28/2010	June 28/2010	June 28/2010
Clipping	Sept 19/2010	Sept 19/2010	Sept 5/2010	Sept 5/2010	Sept 5/2010
Rosetown Site					
Seeding	June 3/2010	June 3/2010	June 3/2010	June 3/2010	n/a
Clipping	Oct 22/2010	Sept 8/2010	Aug 25/2010	Aug 25/2010	n/a
Nokomis Site					
Seeding	June 11/2012	June 11/2012	June 28/2012	June 28/2012	n/a
Clipping	Aug 23/2012	Aug 23/2012	Aug 23/2012	Aug 23/2012	n/a

At the Estevan site, barley, oats, and both millet crops were swathed and then grazed during the winter of 2010/2011. At the Rosetown site, the barley was swathed and silaged, while the oats and millet were swathed and grazed during the winter of 2010/2011. The barley, oats and millet were all swath grazed at the Nokomis site in the winter of 2012/2013. The corn was grazed standing at all three sites over the fall/winter following seeding.

During the winter grazing periods, livestock grazing was recorded at each site (number of days and number of animals) for each treatment to determine grazing days per acre. Utilization following grazing and harvest efficiency of each crop was visually estimated. Yield information was analyzed to provide the basic economics of each treatment.

10. Final Results

Pictures of the various treatments from all sites can be found in Appendix A.

Forage yields from all three sites are summarized in the table below.

ADOPT Annuals Project – Dry Matter Forage Yield (lbs/ac)

Site	Corn	Golden German Millet	Barley	Oats	Proso Millet
Estevan	8007	4552	2351	2043	3490
Rosetown	9880	5300	6800	8700	n/a
Nokomis	11532	4312	3508	3317	n/a
Average Yield 3 sites (lbs)	9806	4721	4220	4687	n/a
Percent Yield Variation*	36%	21%	97%	124%	n/a

*Yield variation is calculated as the difference between highest yield and lowest yield divided by the average of those two values

Estevan Site:

Due to the excessive moisture in the Estevan area in 2010, seeding was delayed on all crops except for the corn. Although cereal crops were not sitting in water, the high precipitation amount seemed to encourage disease. Both the oat and barley crops were badly infected with leaf and root diseases. The late seeding date and the disease had a negative effect on the yield of these cereals. On the other hand, the ample rainfall seemed to have favoured the warm season crops (corn and millet) which did not have a disease problem. A true comparison at this site is difficult due to the spread in seeding dates. What we can conclude at this site is that late seeding of cereals (late June) does not appear to work well.

An estimate of grazing days provided by each crop at the Estevan site is not available. Approximately 300 head of cattle grazed all five crops at once after significant damage was done due to a large numbers of snow geese feeding on the crops. This high animal density, small acreage grazing system did not allow for accurate capture of useful grazing data.

At the Estevan site, the oats, barley and Proso millet were clipped 70 days post-seeding (September 5, 2010); Golden German millet was clipped 84 days post-seeding (September 19, 2010) and the corn was clipped 123 days post seeding (September 19, 2010). The photos included in Appendix A for the Estevan site show the progress of the standing crops to September 4, 2010.

Economic analysis of the Estevan site was based on clipping weights for all five crops and costs per acre based on producer estimates. The table below provides a breakdown of total cost per acre and cost per pound of dry matter yield at the Estevan location in 2010.

ADOPT Annuals Project – Estevan Site Costs (2010)

	Fusion RR Corn	Golden German Millet	Cowboy Barley	Baler Oats	Proso Millet
Dry matter yield (lbs/ac)	8007	4552	2351	2043	3490
Total cost* (\$/acre)	\$152.10	\$96.70	\$81.31	\$81.31	\$84.70
Cost/pound dry matter (cents/lb)	1.9	2.1	3.5	4.0	2.4

** Costs include: fertilizer; inoculant; herbicide; seed; harvest, spraying and seeding operation costs and a flat rate land cost/acre*

As shown above, although the corn was the most costly to seed, the high yield resulted in the lowest cost per pound of dry matter produced. The highest cost crops in 2010 at Estevan were the cool season cereal crops. As described earlier, the late seeding date and wet conditions led to disease and lower than expected yields of the cereals. Oats and barley are comparable in terms of cost per acre and on an average year when sown as recommended the cost per pound of dry matter produced would be lower if higher yields were realized. Golden German millet was slightly more costly to seed than the cool season cereals but had a lower cost per pound of dry matter produced.

Rosetown Site:

Seeding of all treatments at this site occurred within the recommended time frame (all crops seeded June 3, 2010). Yields of all forages were encouraging at this site and disease did not appear to be a problem. Five acre plots of each crop were seeded into sandy loam soil. The site chosen was a corn field (approximately 200 acres total with the non-project acres all sown to corn). The field included numerous Carragana/Siberian Elm/Maple windbreaks.

The millet and oats were swathed on October 7, 2010, which was 126 days post-seeding. This was done late as the cooperator had a busy harvest schedule and had difficulty making a special trip to the demonstration site. The site supervisor reported that the oat crop was coarse and mature at swathing. The millet was also mature but was cleaned up very thoroughly by the cattle when grazed. The barley was swathed and silaged in late August, while the corn was left standing to be grazed. Grazing at the Rosetown site was done in a similar manner to the Estevan site. 300 cows of approximately 1300 lbs each were put on the entire 200 acre corn field (which included the test plots) on October 30, 2010. The producer estimated that the cows remained on the site until February 8, 2011, or for 70 days in total. Grazing days cannot be estimated for each individual crop based on this usage and are therefore unavailable.

It is important to note that the barley and oats were clipped 83 days post-seeding (August 25, 2010), while the millet was clipped 97 days post-seeding (September 8, 2010) and the corn 141 days post-seeding (October 22, 2010). The Estevan site saw clippings taken just under two weeks earlier for the oats, barley and millet yield estimates and just over two weeks earlier for the corn samples. It is unknown how large an effect this difference in harvest dates may have had on the overall yield data for each site.

In order to compare costs between the three sites, the total cost per acre calculated for the Estevan site has been used to calculate cost per pound of dry matter produced at both the Rosetown and Nokomis site. Although land costs would tend to differ from region to region within the province, input costs would be comparable.

ADOPT Annuals Project – Rosetown Site Costs (2010)

	8LSR06 RR Corn	Golden German Millet	Cowboy Barley	Baler Oats
Dry matter yield (lbs/ac)	9880	5300	6800	8700
Total cost* (\$/acre)	\$152.10	\$96.70	\$81.31	\$81.31
Cost/pound dry matter (cents/lb)	1.5	1.8	1.2	0.9

** Costs include: fertilizer; inoculant; herbicide; seed; harvest, spraying and seeding operation costs and a flat rate land cost/acre*

All crops cost less than two cents per pound of dry matter at Rosetown as a result of greater dry matter yields in general. In this case, the Golden German millet was the high-cost crop on a dry matter basis, while the oats came in at the lowest cost, at just under one cent per pound of dry matter.

On May 5, 2011, the Regional Forage Specialist returned to the site to gain a better understanding of how efficiently the four crops were utilized over the winter months. Photos of each plot in the spring of 2011 are included in Appendix A. The barley had been cut and put up as silage the previous fall, with only aftermath grazing done on the plot. The Golden German millet was grazing in swaths and was well-utilized and cleaned up by the cattle. There was more litter left behind after swath grazing the oats crop. The crop was heavy and coarse and left a great deal of residue on the field. There was also a large amount of corn stalk material left behind from the corn grazing demonstration. The Forage Specialist reported that there was a lot of stalk growth and not much grain in the corn cobs in the Rosetown area in 2010 and that if the producer had turned the cattle out again in the spring of 2011, some of the corn litter would have been cleaned up further.

Nokomis Site:

The cereal crops were seeded over two weeks later than the corn and Golden German millet at the Nokomis site in 2012. In July the producer cooperated reported the plots were progressing well although the oats appeared to have poor germination rates. The corn was seeded at 5 lbs/ac, well below the 15 lbs/acre rate recommended by Annex Agro, the seed supplier. The producer felt the crop would have been more uniform if seeded at a higher rate, however corn yields at this site were higher than at any other demonstration site. As with the Estevan site, the later seeding of the cereal crops did not favour production and as a result yielded lower than expected had seeding been possible earlier in June. The Saskatchewan Ministry of Agriculture Forage Specialist supervising this site had difficulty providing an accurate representation of actual yields due to lack of uniformity in the thickness of the stands and in row spacing. The yield results listed in the table below are her best estimate under the circumstances.

Again the total cost per acre calculated for the Estevan site has been used to calculate cost per pound of dry matter produced at the Nokomis site. Rising input and seed costs between 2010 and 2012 would certainly have had an impact on the total cost per acre, however numbers have been left as-is for the sake of comparison.

ADOPT Annuals Project – Nokomis Site Costs (2012)

	P7213 RR Corn	Golden German Millet	Cowboy Barley	Baler Oats
Dry matter yield (lbs/ac)	11532	4312	3508	3317
Total cost* (\$/acre)	\$152.10	\$96.70	\$81.31	\$81.31
Cost/pound dry matter (cents/lb)	1.3	2.2	2.3	2.5

**Costs include: fertilizer; inoculant; herbicide; seed; harvest, spraying and seeding operation costs and a flat rate land cost/acre*

As with the Estevan site, the corn produced the most dry matter per dollar spent at the Nokomis site. With similar results from the two sites where the corn was seeded early and cereal seeded in late June, it can be concluded that it is not economically sound to seed cool season cereals in late June for swath grazing. Baler oats produced the greatest dry matter per dollar spent at the Rosetown site when seeded on June 3, but was the least efficient in terms of cost per pound of dry matter produced in both Estevan and Nokomis, on two different years when seeded on June 28.

Beginning December 8, 2012, the crops at the Nokomis site were grazed using temporary electric fencing to limit access to plots by cattle. Due to concerns over potentially high nitrate levels in the feeds, testing was done on October 29, 2012 and the barley test showed high nitrate levels (0.54% NO₃ dry matter basis). Due to nitrate levels, access to barley was limited and cattle were supplemented with both tame hay and greenfeed. The Golden German millet and oats were grazed together, meaning individual results are not available for those crops, but the data from combined grazing of these two crops are listed in the table. Plots were grazed by beef cows averaging 1350 lbs. The table below details the grazing results for the Nokomis demonstration.

ADOPT Annuals Project – Nokomis Grazing Data (2012/2013)

	Corn	Golden German Millet	Barley	Oats
Grazing dates	Jan 17-28, 2013	Jan 3-9, 2013 Jan 9-17, 2013 (with oats)	Dec 8-20, 2012	Jan 3-9, 2013 Jan 9-17, 2013 (with GGM)
Grazing (days)	11	14	12	14
Number of head grazing	96	115 (6 days) 96 (8 days)	140	115 (6 days) 96 (8 days)
Plot size (ac)	8	4	14	7
Grazing days/acre*	132	133	120	133
Feed Supplemented (#bales)	11 tame hay	n/a	12 tame hay, 13 greenfeed	n/a

*Grazing days/acre does not include supplemented hay

The yields per acre from the clippings revealed that oats had the lowest dry matter yield, followed by barley. The combined grazing of oats and millet required no supplementation and delivered the most grazing days per acre. As oats and millet were not grazed individually we must rely on the clipping data which indicates that the millet yielded 995 pounds of dry matter per acre more than the oats. Corn provided similar grazing days per acre but the producer supplemented the corn with 1 bale of hay each day to compensate for low calcium levels in the feed (0.1% dry matter basis). The barley provided only 120 grazing days per acre, but was limit-fed due to concerns over high nitrate levels and the 140 head swath grazing the barley were fed an additional two bales of hay per day. Additionally, the producer swath grazed his cattle on a red millet crop he seeded himself. Although yield data is not available for

the red millet, the producer commented that he felt it was the most productive annual crop he seeded for grazing in 2012.

Discussion

Research conducted at several locations in Saskatchewan during 2002-2004 and published in 2007 by May et al: "The suitability of cool and warm-season annual cereal species for winter grazing in Saskatchewan" (Can. J. Plant Sci. 87:739-752), concluded that oats and barley are somewhat lower risk forage crops in terms of relatively stable yield over years and locations. The range of yields for the warm season crops (millet, corn) is greater compared to oats and barley. Therefore the warm season crops are higher risk.

May et al. concluded that corn produced high yields but had the largest variations in yield due to changes in environmental conditions. However, in this demonstration the cool season cereal crops showed the largest variation in production between the three sites. The very late seeding dates for the cereal crops at both the Estevan and Nokomis sites certainly contributed to this variation, making it difficult to determine if environmental conditions did create more risk for either warm season or cool season crops. Regarding the cool season cereal crops for swath grazing, the main conclusion reached during this demonstration is that late June seeding of these crops does not appear to be a good option for producers looking for a fall or winter alternative to feeding hay. Although environmental conditions and region within the province likely also contributed to the differences, yields at the Rosetown site (seeding date of June 3), were significantly higher when seeding was done over three weeks earlier.

The dry matter forage yield table confirms the importance of seeding date in relation to yield. Oats saw the largest variation between highest yielding site (Rosetown) and lowest yielding site (Estevan), with 124% difference between dry matter yields at these sites in the same year. Golden German millet was the most predictable in terms of dry matter yield, with 21% difference between highest yielding site (Rosetown) and lowest yielding site (Nokomis), in spite of seeding dates ranging from June 3 to June 28 for millet.

At the Rosetown site, when all crops were seeded within the recommended time frame, corn had the highest overall yield, but oats (0.9 cents/lb dry matter) and barley (1.2 cents/lb dry matter) forage were more economical. At less than one dollar per pound of dry matter produced, the oats grown at the Rosetown site led all crops at all sites in terms of dollars spend per pound of production. Golden German millet had the highest cost per pound of production at the Rosetown demonstration (1.8 cents/lb dry matter), and corn cost was 1.5 cents/lb dry matter. Results from the Rosetown demonstration may be more indicative of yields and costs under ideal seeding conditions.

Evaluation of cost to produce a pound of dry matter revealed corn as the lowest cost crop on average for the three demonstration sites (1.6 cents per pound of dry matter produced), based on yields from clippings. Golden German millet had the second lowest cost (2.0 cents/lb dry matter), followed by barley (2.3 cents/lb dry matter) and finally oats (2.5 cents/lb dry matter). These prices compare favourably to current hay prices and make these annuals a viable grazing option. According to the January 2013 Saskatchewan Forage Market Report produced by the Saskatchewan Forage Council, the

current average asking price for alfalfa-brome hay is \$63/tonne or 2.85 cents/lb. It is worth noting that these extensive grazing systems provide the additional benefit of returning nutrients to the soil as livestock graze the crops. Rising input costs could significantly impact the economic feasibility of growing annual crops for grazing and should be carefully considered prior to implementing a system for fall or winter grazing annuals.

The different clipping dates for the three sites must be taken into consideration when viewing the data from these demonstrations. The Rosetown site (2010) clippings were taken approximately two weeks later than clippings at the Estevan site (2010), which could have produced an overestimation yield variations between the two sites. All forages at the Nokomis site (2012) were clipped on August 23, 2012, which was significantly earlier for the corn and millet crops than either the Rosetown or Estevan site. Additionally, the four forage crops were all clipped on the same day for yield estimations at the Nokomis site, whereas the cool season forages were clipped at least two weeks prior to the warm season forages at the Rosetown and Estevan sites. The impact these different clipping times may have had on report yields is unknown.

The high nitrate levels in the barley and inadequate provision of calcium by the corn crop at the Nokomis site provide a reminder of the importance of testing feed and having alternate plans in place when using annuals for winter or fall grazing. Other considerations include ensuring access to a water source as well as adequate shelter for livestock that are swath grazing or grazing standing feed during inclement weather.

Extension/Promotion Activities:

The following extension activities were completed to communicate results and raise awareness of this demonstration:

- Signs placed at each of the sites.
 - Field day held at Estevan site on January 24, 2011 as part of the “Winter Grazing Feeding Tour” with 33 in attendance, including 26 producers and 7 industry representatives (Appendix B)
 - Field day at Rosetown site in collaboration with Southern Eagle Creek Watershed Group on August 4, 2010 with 25-30 people in attendance (Appendix B).
 - Site field day and presentation by Saskatchewan Ministry of Agriculture Forage Specialist Nadia Mori was held at Nokomis on December 10, 2012, as part of the Lanigan-Manitou and Lewis Creek AEGP “Winter Grazing Tour and Producer Workshop” (Appendix B), with 15 in attendance.
 - Information resulting from this demonstration was reported by Saskatchewan Ministry of Agriculture Forage Specialist Nadia Mori at the “Forage and Beef Update” workshops in Kenaston, SK on February 13, 2013 and Central Butte, SK on February 14, 2013.
 - Information regarding this project has been included on the Saskatchewan Forage Council website (average hits of 1500+ per month). With results now available, this information will be included in upcoming editions of the SFC *Forage and Livestock eNews* as well as other Saskatchewan Forage Council publications.
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11. Conclusions and Recommendations

The objective of this demonstration was to help producers determine if annual forages for fall and winter grazing are a viable option for their operation, and which forage species are suitable for conditions in their area.

Large yield variations in cool season annuals based on seeding dates demonstrated the economic value of planting annual crops within the recommended time frame. Cool season annuals (oats and barley) had the lowest cost per pound of dry matter only when seeded in early June. Seeded within the recommended time period, the oats grown at the Rosetown site demonstrated the lowest cost per pound of dry matter production of all crops across all sites.

The warm season annuals (corn and Golden German millet) were more predictable in terms of yield and produced more forage per dollar spend on average than the cool season annuals. This advantage is largely thought to correlate with seeding dates. Corn produced the highest total dry matter yield at every site, but also had the highest input costs of any crop.

It appears that any of these annual crops could provide a good alternative to purchasing or baling hay to feed in fall and winter. The average prices to produce a pound of dry matter ranged from 1.6 cents (corn) to 2.5 cents (oats) during this project, with the added benefit of extensive grazing systems that return nutrients to the soil. Based on the varied results, producers should carefully consider if the environmental conditions are conducive to appropriate timing for sowing annual crops for grazing.

This project was also successful in allowing over 65 producers to compare four annual forage crops as grazing alternatives firsthand at three sites throughout the province, and the consolidated data available on the Saskatchewan Forage Council website will be useful to producers considering options for fall and winter grazing.

Supporting Information

12. Acknowledgements

The Ministry's support for the project was acknowledged on signage displayed at each site and in all communication/extension materials.

Industry/co-operator support has also been noted all project site signage and in all communication/extension materials.

Industry Support: Annex Agro Ltd. provided Pioneer Hi-Bred P7213 corn for the Nokomis site; Fedoruk Seed Farm provided Cowboy barley for the Nokomis site; Elmy's Friendly Acres provided Golden German millet for the Nokomis site.

In-kind support was provided by Saskatchewan Ministry of Agriculture Regional Forage Specialists to oversee these demonstration sites.

13. Appendices

Appendix A – Site Photos

Appendix B – Project Extension Activities

14. Abstract

The Saskatchewan Forage Council ADOPT project titled “Annual Forages Species Demonstration” involved collaboration with three cooperators in Saskatchewan and Saskatchewan Ministry of Agriculture Forage Specialists from 2010 through 2012. This demonstration allowed producers to determine if annual forages for fall and winter grazing are a viable option for their operation, and which forage species are suitable for conditions in their area. At sites located near Estevan, Rosetown and Nokomis Saskatchewan, two cool season annual forage crops (oats and barley) as well as two warm season annual forage crops (corn and Golden German millet) were sown in five acre plots and utilized for fall and winter grazing. The oats, millet and barley were swath grazed and the corn was grazed standing. Based on yield results and economic analysis, the cool season annual forages had the lowest cost per pound of forage produced when sown in a timely manner and under typical environmental conditions. Late seeding of cool season annuals at two sites in 2010 greatly diminished the productivity of these crops, resulting in much higher costs per pound of dry matter produced when compared to corn and millet. Corn had the highest total yield at all sites, as well as the highest input costs. Communication of demonstration results was carried out through field days and presentations at producer workshops with over 65 people viewing demonstration sites first-hand. The complete report and results will be included in the Saskatchewan Forage Council’s publications and website postings.

Finances

15. Budget Report

	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Total (\$)	Budgeted (\$)
Salaries and Benefits					
• Students					
• Postdoctoral / Research Associates					
• Technical / Professional Assistants					
Consultant Fees & Contractual Services					
Rental Costs					
• Rentals					
Materials / Supplies	\$3,832.98		\$1,650.00	\$5,482.98	\$6,870.00
Project Travel					
• Field Work					
• Collaborations/consultations	\$348.69		\$388.31	\$737.00	\$737.00
Other					
• Field Day	\$381.08		\$108.00	\$489.08	\$900.00
• Administration	\$212.50		\$107.32	\$319.82	\$425.00
• Miscellaneous					
Total	\$3,979.29		\$2,253.63	\$7,028.88	\$8,932.00

Materials/Supplies –seed, soil analysis, fertilizer, herbicide, fencing

Project travel – travel to attend field days

Field Day – communications, site preparation

Administration – project management and financial administration

Appendix A – Site Photos



Estevan site –Sept 4, 2010
Barley on left, Oats on right

Estevan site –Sept 4, 2010
Golden German Millet on left,
Barley on right



Estevan site –Sept 4, 2010
Oats on left, Corn on right



Estevan site – Sept 4, 2010
Proso millet on left, Corn on
right



Estevan Site Field day
January 27, 2011

Rosetown site – October 2010
Corn





Rosetown site October 2010
Oats swathed



Rosetown Site
Millet plot May 5, 2011
after swath grazing



Rosetown Site
Oat plot May 5, 2011
after swath grazing



Rosetown Site
Corn plot May 5, 2011
after winter grazing



Rosetown Site
Barley plot May 5, 2011
Barley was cut and silaged in
2010-only residue grazed



Nokomis Site
Standing corn for grazing
field day Dec 10, 2012



Nokomis site
Millet in swath
Dec 10, 2012



Nokomis site
Oats in swath
Dec 10, 2012



Nokomis site field day
December 10, 2012
Participants observed
swathed annuals and corn for
grazing

Appendix B – Project Extension Activities

Field Day Announcement - Rosetown Site (August 4, 2010)



SOUTHERN
EAGLE CREEK
WATERSHED GROUP



**Invites you to
Southern Eagle Creek Watershed / ADOPT
Field Day**

When – Wednesday August 4th, 2010

Time – 9 am (finish mid afternoon)

Location – Starting at Leam Craig's Farm

From Rosetown: 22 miles North on Highway 4 & 8 miles West on Ruthilda Road

From Biggar: 14 miles South on Highway 4 & 8 miles West on Ruthilda Road

Tour will include:

Nutrient and Yield Effects of Bale Grazing
Annual Forage Species Demonstration
Eco Buffer Demonstration Site
Aerial Mapping Presentation
Guest Speaker

Lunch will be provided

Please RSVP to Lexie Adamson by Monday August 2nd
eaglecreekwatershed@hotmail.com (email)

463-2748 (w)

831-6009 (c)

For more information on field day or Southern Eagle Creek Watershed
call Lexie or Leam Craig (948-2801)



Agriculture and
Agri-Food Canada

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Agriculture

**ADOPT
Agricultural Demonstration of Practises and Technologies**

Field Day Announcement - Estevan Site (January 27, 2011)



Winter Grazing Feeding Tour

Thursday January 27, 2011

Prairie Animal Health Centre, Estevan

Sign in and coffee 12:30 P.M., Presentations start at 1:00 P.M.

- **Water Systems 101: Basics of Water System Design**
- Etienne Soulodre, Sask. Watershed Authority
 - **ADOPT Forage Demonstration: Oats, Barley, Millets and Corn**
 - **ADOPT Cicer Milkvetch Establishment Demonstration**
 - **"Combine or Swath Graze" Calculator**
- Lorne Klein, Saskatchewan. Ministry of Agriculture
 - **Upper Souris River Watershed Protection Plan**
- Vicki East, Watershed Co-ordinator
 - **Agri-Environmental Group Plans and Funding Opportunities for Producers**
- Kylie McRae, Cornerstone AEGP and Ducks Unlimited Canada
 - **Sask. Forage Council ADOPT Projects**
- Cory Schellenberg, Saskatchewan Forage Council
- Vans depart at 2:30 P.M. for field tour**
- **Corn grazing, winter watering system and ADOPT forage demonstration**
- Chad and Crystal Ross
 - **Bale grazing and ADOPT cicer milkvetch demonstration**
- Brian and Rosalie Ross
- Vans arrive in Estevan at 5:00 P.M.**

In order to arrange for tour transportation, we need to know if you will attend.
Please register by 5:00 P.M. January 24. There is no fee to attend.
For more information and to register, call (306) 848-2857 or (306) 421-0863.

Sponsors:



Saskatchewan
Ministry of
Agriculture

LIVESTOCK

AGRICULTURE

Agri-Environmental Group Plan Events Calendar

Plan to Attend

Winter Grazing Tour and Producer Workshop

Nokomis (Legion Hall)

December 10, 2012 10 a.m.— 3:30 p.m.

Free Lunch at noon sponsored by the Lanigan-Manitou and Lewis Creek AEGPs

9:30—registration and coffee

10 a.m.-noon— Winter grazing annuals and ADOPT site tour

Noon-1 p.m.—free lunch

1 - 3:30 p.m. — speakers

Topics include:

Winter feeding site selection

Forage testing: a tool for beef producers

Soil testing and fertilizer applications

The alfalfa weevil

For more information and to register for lunch (by Dec 6th, 5 pm) please call Colleen at 946-6533.
In the event of bad weather, a presentation on the ADOPT project will be given at the Nokomis Legion Hall.



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