



# Western Beef Development Centre

## From Grain to Grass – What are the Costs?

### Introduction

As Saskatchewan emerges from the era of freight rate subsidies, producers are struggling to find alternative, profitable opportunities for their land base. Particularly hard hit are eastern Saskatchewan and western Manitoba producers. However, one opportunity may be in seeding forages on previously annually cropped land. In the spring of 2000, the Western Beef Development Centre (WBDC) entered into a project with Saskatchewan Agriculture and Food (SAF) and Lorne Christopherson, a producer in northeastern Saskatchewan. This three-year project is examining the economics of converting productive cropland to perennial forages vs. continuing to grain farm this type of land.

### 1<sup>st</sup> Year – 2000

In the first year of the project, spring 2000, 278 of 370 acres of cropland, known as “Granrude’s,” was seeded to a meadow brome-alfalfa mixture. A nurse crop of oats was also seeded with the grass-legume mixture and baled as greenfeed in the fall of 2000. The nurse crop of oats was used to generate some revenue from the land in the establishment year of the project. The additional 92 acres of Granrude’s was seeded to Liberty Tolerant canola in

2000, to further provide additional income in the first year of the project. In the fall of 2000, a shallow dugout was constructed in the middle of Granrude’s, to be used as the primary source of water for the pasture. That fall, the entire 370 acres was also perimeter fenced and cross-fenced into 5 separate paddocks, each of which had access to the centrally located dugout.

The returns and expenses from Granrude’s are being compared against “Dahl’s West,” an adjacent 230-acre piece of land, which has been annually cropped for many years. Dahl’s West and Granrude’s are classified as Kamsack/Shellbrook silty loam and are each assessed at approximately \$4,800 - \$5,200 per quarter, under the old assessment system.

Dahl’s West produced 54 bushels/acre of malt barley in the fall of 2000 and generated a \$35.75/acre net increase in cash position for Christopherson. Granrude’s 278 acres of oat greenfeed was baled in the early fall of 2000 and yielded 2.32 ton/acre. The remaining 92 acres of canola on Granrude’s yielded 24 bushels/acre. The overall net change in cash position for Granrude’s was -\$56.19/acre in 2000. The reason for this large per acre loss is

that these capital improvement costs were entirely expensed in one year rather than over the lifetime of the assets in question.

## **2<sup>nd</sup> Year - 2001**

In the spring of 2001, the remaining 92 acres of Granrude's was seeded to a meadow brome-alfalfa-oat mixture. Granrude's remaining 278 acres of meadow brome-alfalfa pasture (seeded in 2000), was rotationally grazed by 200 cow-calf pairs from June 10<sup>th</sup> to September 10<sup>th</sup> 2001, excluding the time period August 1<sup>st</sup>-10<sup>th</sup>. Grazing was valued at \$1.00/cow-calf pair/day. For this pasture to sustain 200 cow-calf pairs for eighty days, during a drought year is quite amazing. This stocking rate was achieved because of the young age of the forage stand and the respectable moisture reserves in the soil at the beginning of the year. The cows were removed from the pasture on September 10<sup>th</sup>, because dugout water levels were low, not because there was a shortage of grass. Portions of the 278 acres of pasture did not even receive two rotations of grazing. This re-growth (which was baled) produced 100 round bales, each weighing 1800 lbs. This hay was valued at \$90/bale.

Two hundred cow-calf pairs grazed the 92 acres of Granrude's, which was seeded down to the meadow brome-alfalfa-oat mixture in the spring of 2001, from August 1<sup>st</sup> to 10<sup>th</sup>, 2001. This grazing was also valued at \$1.00/cow-calf pair/day. Given the dry conditions in 2001, it is still questionable as to the extent of establishment achieved by the meadow

brome-alfalfa mixture. Of further concern, has been the limited snow cover in this area of the province during the past winter, thereby impacting on the already low level of water present in Granrude's shallow dugout.

The 2001 change in cash position for the entire 370 acres that comprise Granrude's are shown in Table 1. Note that the seeding, fertilizer, herbicide, baling and forage establishment insurance costs are quite low. The reason for this is that most of these costs, which are averaged over the 370 acres that make-up Granrude's, were only incurred on the 92 acres seeded down in the spring of 2001.

Dahl's West, which produced 54 bushels/acre of malt barley in 2000, was seeded to flax (linola) in the spring of 2001. The flax was direct seeded at a rate of 1 bushel/acre, into standing barley stubble. In the fall of 2001, 18 bushels/acre of flax (excluding dockage) were harvested on Dahl's West. The 2001 change in cash position for the flax grown on Dahl's West is provided in Table 2. Tables 1 and 2 indicate that in year two of this project (2001), the change in cash position from grazing and baling on Granrude's, +\$20.54/acre, was greater than that earned from growing flax on Dahl's West, + \$9.66/acre, on a per acre basis. However, it still must be remembered that Granrude's had a change in cash position of -\$56.19/acre in 2000, which is much lower than the +\$35.76/acre earned that year on Dahl's West.

**Table 1: Costs and Returns – Granrude’s (2001)**

	<b>\$ Total</b>	<b>\$ Per Acre</b>
<b>Cultivated Acres: 370</b>		
<b>Revenues</b>		
Total Sales	27,000.00	72.97
Total Revenue	27,000.00	72.97
<b>Expenses</b>		
Seeding	3404.00	9.20
Fertilizer	2,024.00	5.47
Herbicide	598.00	1.62
Harvesting	800.00	2.16
Land Rent	11,100.00	30.00
Herd Health & Management	1200.00	3.24
Forage Establishment		
Insurance	276.00	0.75
<b>Total Expenses</b>	<b>19,402.00</b>	<b>52.44</b>
<b>Change in Cash Position</b>	<b>7,598.00</b>	<b>20.54</b>

As mentioned earlier, one of the major reasons for Granrude’s having a change in cash position of **-\$56.19/acre** in 2000, is that all forage seed, fencing and dugout costs incurred on this piece of land in 2000 were paid for with cash. Another option for producers is to not pay cash for these capital improvements. Often times, farming operations transitioning from “grain to grass” are forced to borrow the entire sum of money needed to cover these types of costs. These kinds of loans are typically paid back over a 2 to 5 year period.

Let’s assume Lorne Christopherson took out a 5-year loan (8.5% interest

**Table 2: Costs and Returns – Dahl’s West (2001)**

	<b>\$ Total</b>	<b>\$ Per Acre</b>
<b>Cultivated Acres: 230</b>		
<b>Revenues</b>		
Total Sales	31,303.00	136.10
Total Revenue	31,303.00	136.10
<b>Expenses</b>		
Seeding	2,760.00	24.00
Fertilizer	4,701.20	20.44
Herbicide	5,060.00	25.50
Harvesting	7,705.00	26.50
Land Rent	6,900.00	30.00
<b>Total Expenses</b>	<b>27,126.20</b>	<b>126.44</b>
<b>Change in Cash Position</b>	<b>4,176.80</b>	<b>9.66</b>

rate per annum) to pay for all of the forage seed, dugout and fencing expenses incurred on Granrude’s in 2000. By borrowing money to cover these costs, his combined change in cash position for 2000 and 2001 (Table 3), would have been much closer to break-even. The reason being that the forage seed, fencing and dugout costs are now paid for over a 5-year rather than 1-year time frame. Obviously this reduction in payments makes it easier to “make ends meet” during the first years of the land-use transition. However, now Lorne still has 3 years of payments left to make on the money borrowed to pay for these capital improvements.

**Table 3: Combined Change in Cash Position for Granrude's During 2000 and 2001 Using a 5-Year Loan for 2000 Forage Seed, Fencing and Dugout Costs**

	\$ Total	\$ Per Acre
<b>Cultivated Acres:</b>		
<b>370</b>		
<b>Revenues</b>		
Total Sales	61,675.20	166.69
Total Revenue	61,675.20	166.69
<b>Expenses</b>		
Total Seeding	12,204.52	32.99
Total Fertilizer	10,708.53	28.94
Total Herbicide	5,223.00	14.12
Total Baling & Harvesting Costs	13,289.99	35.92
Land Rent	22,200.00	60.00
Dugout Costs	512.00	1.38
Herd Health and Management.	1,200.00	3.24
Total Fencing & Labour Costs	2,846.94	7.69
Forage Establishment		
Insurance	1,110.00	3.00
<b>Total Expenses</b>	<b>69,294.98</b>	<b>187.28</b>
<b>Change in Cash Position</b>	<b>-7,619.78</b>	<b>-20.59</b>

### Conclusions

The combined change in cash position for the first two years of this project are -\$35.65/acre for Granrude's, versus +\$45.42/acre on Dahl's West.

As suggested earlier, this is not surprising given that all of the costs for

the forage seed, fencing and dugout have been expensed during the first two years of this project. Had the producer taken out a 5-year loan to cover Granrude's 2000 forage seed, dugout and fencing costs, his combined change in cash position for 2000 and 2001 would have hypothetically been - \$20.59/acre. It cannot be stressed enough that a farm operation attempting to transition a large portion of its land from grain to grass over a short time period will often times experience a shortage of cash flow. Obviously a farmer's decision, as to which strategy is used for overcoming these land-use diversification costs, will vary depending on their financial situation. Each of the potential strategies should still be penciled out so that the producer is aware of the predicted cash flows from various scenarios. It will be interesting to see how the returns on Granrude's and Dahl's West compare in 2002. Furthermore, in future articles it will be interesting to see how long it takes Lorne to recover the expenses that were incurred when transitioning Granrude's from "grain to grass."

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