

## **BISON BENCHMARK PROJECT YEAR SEVEN - Gerard Woynarski Project Consultant**

### **INTRODUCTION**

The Saskatchewan Bison Association (SBA), the Bison Producers of Alberta (BPA) and the Canadian Bison Association (CBA), recognize the importance of current cost of production and herd performance information for the industry. Updated information provides producers with the ability to compare their bison business performance with the performance of others and identify areas where they could improve and enhance profitability. Current production and financial performance information is important to assist new entrants plan entry into the industry, present producers to expand their business, and is helpful for financial institutions to evaluate business proposals as they capitalize the bison industry.

This report summarizes the results of the seventh year of the project, provides suggestions as to how the information can be used and how more producers can get involved.

The SBA, BPA and CBA acknowledge the financial support from the Saskatchewan Ministry of Agriculture and Alberta Department of Agriculture. Without their contribution and the support of bison producers this project would not be possible.

### **THE PROCESS**

Under the continued guidance of an advisory committee an updated plan was established for 2017, the data collection format was refined, bison producers to provide data were identified, and data was collected through farm visits from January 1, 2017 to July 31, 2017. The data was analyzed and participants had their information compared to data collected. To preserve the confidentiality of individual producer data, the results of at least three producers were required in each data set.

### **THE RESULTS & DATA COLLECTED**

A total of 54 farms, who participated in the benchmark project in 2017, provided information on 131 bison enterprises. Data was collected from 53 enterprises involved in bison cow-calf operations, 45 enterprises were backgrounding operations, and 33 enterprises were finishing operations. The data included herd profile, production costs and investment requirements.

Although seven years of data have been collected, the most recent 5-year average production costs and performance measures are evaluated.

## COW-CALF ENTERPRISES

Herd profile data for the cow-calf enterprise includes items such as: breeding herd size (cows and bulls), breeding herd death loss, culled animals, replacements, calving and weaning dates, number of calves weaned and weights, average calf sale prices and weights, weaning dates, whether or not a producer pregnancy tests, whether or not a producer de-horns, whether or not a producer sells breeding stock, bull-to-cow ratio and age distribution of cow herd. In addition, this year the pasture acre average per cow and the breeding herd value per cow performance measures were collected and are reported in this article.

## KEY PERFORMANCE MEASURES

Category (No. of Cows)	COW-CALF				
	2016	Under 100		100 Plus	
	<u>&lt;100 &amp; &gt;100</u>	<u>2016</u>	<u>5-Yr Av</u>	<u>2016</u>	<u>5-Yr Av</u>
Number of Farms:	53	30	25	23	23
Av # of Cows	114	60	56	186	217
Weaning Rate %	83.1	83.0	86.5	83.3	85.1
Av Wean Weight – Bulls	469	471	473	465	474
Av Wean Weight – Heifers	424	429	428	417	429
Av Days from Birth to Wean	276	277	282	276	274
Mortality % in Cow Herd	2.69	3.26	2.46	1.95	2.19
Total Feed Costs Per Cow	\$449	\$466	\$392	\$427	\$376
Cash Operating Cost Per Cow*	\$968	\$1063	\$801	\$843	\$699
Cost of Production Per Cow**	\$1147	\$1264	\$966	\$995	\$805
Av Cash Return Per Cow	\$944	\$863	\$486	\$1049	\$566
Av Net Return Per Cow	\$764	\$662	\$321	\$897	\$460
Av Capital costs per head	\$2850	\$3641	\$3147	\$1818	\$1419
Av Breeding Herd Value Per Cow	\$3755	\$3756	N/A	\$3754	N/A
Av Pasture Acres Per Cow	7.6	7.9	N/A	7.2	N/A

NOTES: \* - Cash Operating Costs does not include labor & depreciation

\*\* - Cost of Production includes cash operating costs plus labor & depreciation

## AGE DISTRIBUTION OF COW HERD (2016)

	<u>Under 100 Cow</u>	<u>% Herd</u>	<u>100 Plus Cows</u>	<u>% Herd</u>
Total No. of Cows	60		186	
No. of Cows < 5 Yrs	19	32%	50	27%
No. of Cows 5-12 Yrs	22	36%	77	41%
No. of Cows 13-17 Yrs	12	20%	41	22%
No. of Cows > 17 Yrs	7	12%	18	10%
No. of Bulls	4		12	
Av Age of Bulls	6		6	
Bull-to-Cow Ratio	15		16	

## WEANING PERFORMANCE (2016)

	Early Wean (Prior to Dec 1 <sup>st</sup> )		
	All Farms	Under 100	100 Plus
No. of Farms	7	4	3
Weaning Rate %	82.0	79.6	85.3
Av Wean Weight – Bulls	454	447	464
Av Wean Weight – Heifers	408	399	421
Av Days from Birth to Wean	207	194	224
Av Weaning Date	Nov 11	Nov 6	Nov 18

### **Normal Wean (Dec 1<sup>st</sup> to End Feb)**

	<b>All Farms</b>	<b>Under 100</b>	<b>100 Plus</b>
No. of Farms	40	23	17
Weaning Rate %	83.3	83.4	83.2
Av Wean Weight – Bulls	468	473	462
Av Wean Weight – Heifers	424	434	411
Av Days from Birth to Wean	281	285	275
Av Weaning Date	Jan 17	Jan 20	Jan 14

### **Late Wean (Mar 1<sup>st</sup> Plus)**

	<b>All Farms</b>	<b>Under 100</b>	<b>100 Plus</b>
No. of Farms	6	3	3
Weaning Rate %	82.9	84.0	81.8
Av Wean Weight – Bulls	491	493	488
Av Wean Weight – Heifers	441	435	447
Av Days from Birth to Wean	330	324	337
Av Weaning Date	Mar 21	Mar 17	Mar 26

## **OTHER FACTORS**

**Pregnancy Testing:** Of the total cow-calf farms that participated in the 2016 benchmark project, 32% pregnancy tested their cows with an overall average weaning rate of 82.8%, compared to 37% in 2015 with an overall average weaning rate of 85.9%.

For those cow-calf farms in 2016 that did not pregnancy test, the weaning rate was 84.1%, compared to 85.5% in 2015 for similar farms.

**De-horning:** In 2016, 19% of the total cow-calf entities in the benchmark project de-horned their animals, compared to 22% in 2015.

**Breeding Stock Sold:** Of the 53 cow-calf farms for 2016, 17% of the operations sold breeding stock, compared to 20% in 2015. The average number of animals sold for breeding was 1.4% of total animals on the farm in 2016, while it was 3% in 2015.

## BACKGROUNDING ENTERPRISES

Herd profile data for the backgrounding enterprise includes: number of acres pastured, number and average weight of backgrounders purchased or retained from own herd, average backgrounder purchase/retained price, days on grass/feed, number of backgrounders sold and retained, average shipping weight, and selling price.

### KEY PERFORMANCE MEASURES:

Category (No. of Backgrounders)	BULLS				
	2016 <u>&lt;100 &amp; &gt;100</u>	2016 <u>&lt;100</u>	2012-16 <u>5-Yr Av</u>	2016 <u>&gt;100</u>	2012-16 <u>5-Yr Av</u>
Number of Farms:	23	16	19	7	7
Av No. of Backgrounders	89	51	54	177	169
Av Wt of Purchased & Retained Head	464	460	486	472	455
Av Shipping Weight (Lbs)	812	796	800	848	825
Mortality Rate %	0.59	0.73	0.56	1.24	0.59
Days on Grass &/or Feeders	255	258	228	247	248
Av Daily Gain (Lb/day)	1.38	1.32	1.41	1.54	1.50
Av. Backgrounder Cost Per Head	\$2044	\$2016	\$1415	\$2109	\$1343
Total Cost of Production Per Head	\$2566	\$2527	\$1850	\$2633	\$1753
Av Total Cost per Lb Gained	\$1.54	\$1.58	\$1.47	\$1.47	\$1.14
Total Cost of Feed Per Head	\$222	\$212	\$210	\$244	\$218
Av Feed Cost per Lb Gained	\$0.65	\$0.64	\$0.68	\$0.67	\$0.61
Av Cash Return Per Head	\$548	\$531	\$383	\$588	\$458
Av Net Return Per Head	\$417	\$391	\$289	\$475	\$381
Av Capital Costs Per Head	\$1813	\$2074	\$1620	\$1215	\$970

Category (No. of Backgrounders)	HEIFERS				
	2016 <u>&lt;100 &amp; &gt;100</u>	2016 <u>&lt;100</u>	2012-16 <u>5-Yr Av</u>	2016 <u>&gt;100</u>	2012-15 <u>5-Yr Av</u>
Number of Farms:	22	16	19	6	6
Av No. of Backgrounders	78	48	53	158	159
Av Wt of Purchased & Retained Head	415	414	435	416	417

Av Shipping Weight (Lbs)	707	699	696	728	756
Mortality Rate %	0.57	0.30	0.33	1.27	0.61
Days on Grass &/or Feeders	269	275	242	252	287
Av Daily Gain (Lb/day)	1.10	1.05	1.12	1.24	1.20
Av. Backgrounder Cost Per Head	\$1661	\$1647	\$1135	\$1699	\$1098
Total Cost of Production Per Head	\$2157	\$2133	\$1530	\$2221	\$1523
Av Total Cost per Lb Gained	\$1.75	\$1.74	\$1.54	\$1.77	\$1.30
Total Cost of Feed Per Head	\$189	\$168	\$166	\$245	\$225
Av Feed Cost per Lb Gained	\$0.67	\$0.62	\$0.65	\$0.80	\$0.68
Av Cash Return Per Head	\$489	\$491	\$312	\$485	\$397
Av Net Return Per Head	\$339	\$327	\$211	\$370	\$318
Av Capital Costs Per Head	\$2111	\$2275	\$1736	\$1408	\$1023

## FINISHING ENTERPRISES

Herd profile data for the finishing enterprise consists of: number of feeders purchased and placed on feed, average weight of feeders purchased, feeder purchase price, days on feed, number of head sold and retained, average finish/shipping weight at farm, selling price, weight at plant (if available), hot hanging weight, and slaughter age (birth date to slaughter date).

## KEY PERFORMANCE MEASURES:

Category (No. of Finish Animals)	BULLS				
	2016 <100 & >100	2016 <100	2012-16 5-Yr Av	2016 >100	2012-16 5-Yr Av
Number of Farms:	16	10	16	6	7
Av No. of Feeders	114	50	52	204	222
Av Wt of Feeders Purchased	795	782	772	816	812
Av Shipping Wt at Farm (Lbs)	1177	1176	1141	1179	1134
Mortality Rate %	0.35	0.50	0.38	0.10	0.31
Shrinkage %	6.63	6.63	6.99	6.63	6.35
Dressing % at Plant	60.54	61.19	60.65	59.76	60.14
Dressing % Feedlot to Carcass	58.43	56.54	56.09	56.25	56.60

Hot Hanging Weight	665	639	652**	663	662**
Slaughter Age (Birth to slaughter - months)	25	26	26**	25	24**
Days on Feed	228	245	212	199	181
Av Daily Gain (Lb/day)	1.70	1.61	1.76	1.83	1.80
Av. Feeder Cost Per Head	\$2702	\$2648	\$1858	\$2791	\$1889
Total Cost of Production Per Head	\$3475	\$3426	\$2580	\$3558	\$2568
Av Total Cost per Lb Gained	\$2.06	\$2.02	\$2.10	\$2.13	\$2.16
Total Cost of Feed Per Head	\$415	\$420	\$371	\$405	\$394
Av Feed Cost per Lb Gained	\$1.08	\$1.05	\$1.03	\$1.13	\$1.26
Av Cash Return Per Head	\$587	\$581	\$437	\$597	\$501
Av Net Return Per Head	\$461	\$458	\$331	\$467	\$409
Av Capital Costs Per Head	\$1656	\$1811	\$1786	\$1398	\$1008

**NOTE: \*\* - 2 year average only**

#### HEIFERS

Category (No. of Finish Animals)	2016	2016		2016	2012-16
	<u>&lt;100 &amp; &gt;100</u>	<u>&lt;100</u>	<u>2012-15</u>	<u>&gt;100</u>	<u>5-Yr Av</u>
Number of Farms:	17	14	17	3	4
Av No. of Feeders	83	50	47	237	253
Av Wt of Feeders Purchased	676	639	657	708	721
Av Shipping Wt at Farm (Lbs)	937	932	928	962	946
Mortality Rate %	0.27	0.29	0.27	0.17	0.36
Shrinkage %	6.59	6.40	7.14	7.08	6.86
Dressing % at Plant	61.86	61.97	62.07	61.19	61.39
Dressing % Feedlot to Carcass	57.60	57.52	57.33	57.66	57.60
Hot Hanging Weight	540	536	532**	558	558**
Slaughter Age (Birth to slaughter - months)	27	27	27**	25	25**
Days on Feed	250	253	221	233	192
Av Daily Gain (Lb/day)	1.08	1.07	1.27	1.13	1.20
Av. Feeder Cost Per Head	\$2058	\$2045	\$1411	\$2115	\$1552

Total Cost of Production Per Head	\$2762	\$2741	\$2074	\$2863	\$2171
Av Total Cost per Lb Gained	\$2.76	\$2.71	\$2.63	\$2.95	\$2.89
Total Cost of Feed Per Head	\$333	\$331	\$314	\$341	\$313
Av Feed Cost per Lb Gained	\$1.31	\$1.30	\$1.24	\$1.35	\$1.43
Av Cash Return Per Head	\$427	\$420	\$384	\$456	\$391
Av Net Return Per Head	\$280	\$273	\$261	\$313	\$288
Av Capital Costs Per Head	\$2372	\$2562	\$2004	\$1484	\$1027

**NOTE: \*\* - 2 year average only**

## **SYNTHESIS**

The performance measures above reflect the averages in each category. As a producer you are able to compare your bison business results to the averages in this report. By doing this you will be able to identify areas where you are doing very well and you can identify areas where you can improve your operations. For instance, if you have a feeder operation, you can compare your daily gains with the averages. This comparison will give you an indication as to how well you are doing. You can compare other variables as well. Be sure to you are comparing cost data from the same time periods.

## **Next Steps**

The benchmarking program will continue to create value to the bison industry as producers continue to participate. To this end, plans are to enhance the benchmarking project by using benchmark information in a Bison Forecasting Tool. The Tool will be designed so producers can input their own bison farm data, compare it to the benchmark results, and then create “what-if” scenarios to determine how changes in production and performance factors will impact returns. This forecasting tool is to be released in early 2018!

Thank you to all those producers who have contributed to the benchmark project over the past seven years. We look forward to working with those who will continue to support the program in 2018. For producers interested in participating in the benchmark project, please contact Gerard Woynarski at 306-536-9841 or the SBA/CBA office at 306-522-4766.