

BISON BENCHMARK PROJECT YEAR TEN - Gerard Woynarski Project Consultant

INTRODUCTION

The Saskatchewan Bison Association (SBA) and the Canadian Bison Association (CBA), support collecting current cost of production and herd performance information for the bison 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 production and 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 tenth year of the project and provides suggestions as to how the information can be used.

The SBA and CBA acknowledge the financial support from the Saskatchewan Ministry of Agriculture. Without their contribution and the support of bison producers this project would not be possible. Thank you to all those producers who have contributed to the benchmark project over the past ten years. Without your support the programs success would not be possible.

THE PROCESS

On the foundation of feedback from producers participating in the program as well as people using the information, an updated plan was established for 2020, the data collection format was refined, bison producers to provide data were identified, and data was collected through farm visits and/or long distant phone conversations from January 1, 2020 to August 15, 2020. (NOTE: Due to the COVID-19 impact, the data collection process was extended somewhat for this year.) 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 46 farms participated in the benchmark project in 2020 and provided information on 136 bison enterprises. Data was collected from 46 enterprises involved in bison cow-calf operations, 58 enterprises were backgrounding operations, and 32 enterprises were finishing operations. The data included herd profile, production costs and investment requirements.

Although ten years of data has been collected, in addition to the current year's results the most recent 3-year average production costs and performance measures are

represented in this report. The 3-year average is considered a reasonable historic comparison as it represents the more recent economic and market conditions in the bison industry.

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, 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

COW-CALF

Category (No. of Cows)	2019 <u><100 & >100</u>	Under 100		100 Plus	
		2019	2017-19 3-Yr Av	2019	2017-19 3-Yr Av
Number of Farms:	46	26	28	20	22
Av # of Cows	124	60	58	207	199
Weaning Rate %	86.7	88.9	86.0	83.8	83.5
Av Wean Weight – Bulls	510	523	502	493	487
Av Wean Weight – Heifers	462	474	454	434	443
Av Days from Birth to Wean	281	285	280	276	268
Mortality % in Cow Herd	1.57	1.52	1.93	1.63	1.48
Total Feed Costs Per Cow	\$514	\$538	\$543	\$481	\$492
Cash Operating Cost Per Cow*	\$945	\$1025	\$1110	\$840	\$910
Cost of Production Per Cow**	\$1099	\$1186	\$1298	\$986	\$1056
Av Cash Return Per Cow	\$51	\$22	\$337	\$89	\$444
Av Net Return Per Cow	(\$104)	(\$140)	\$149	(\$56)	\$298
Av Capital costs per head	\$3323	\$4007	\$4349	\$2433	\$2281
Av Breeding Herd Value Per Cow	\$3551	\$3573	\$4179	\$3524	\$3999
Av Pasture Acres Per Cow	8.2	8.9	9.5	7.2	7.4

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

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

AGE DISTRIBUTION OF COW HERD (2018 vs 2019)

	<u>Under 100 Cows</u>				<u>100 Plus Cows</u>			
	<u>2018</u>		<u>2019</u>		<u>2018</u>		<u>2019</u>	
Total No. of Cows	56		60		193		207	
No. Cows < 5 Yrs	20	36%	25	36%	62	32%	71	32%
No. Cows 5-12 Yrs	20	36%	23	36%	80	42%	83	41%
No. Cows 13-17 Yrs	11	20%	10	20%	33	17%	34	17%
No. Cows > 17 Yrs	5	8%	3	9%	18	11%	18	9%
Av Age of Bulls	5		6		5		6	
Bull-to-Cow Ratio	15		16		16		16	

WEANING PERFORMANCE (2018 vs 2019)

	Early Wean (Prior to Dec 1 st)					
	All Farms		Under 100		100 Plus	
	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>
No. of Farms	4	4	n/a	n/a	3	3
Weaning Rate %	88.3	86.0	n/a	n/a	91.1	82.4
Av Wean Weight – Bulls	440	483	n/a	n/a	452	457
Av Wean Weight – Heifers	403	436	n/a	n/a	411	411
Av Days - Birth to Wean	210	220	n/a	n/a	212	221
Av Weaning Date	Nov 13	Nov 10	n/a	n/a	Nov 20	Nov 10

NOTE: n/a = less than 3 farms in data set

Normal Wean (Dec 1st to End Feb)

	All Farms		Under 100		100 Plus	
	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>
No. of Farms	34	33	18	19	16	14
Weaning Rate %	83.1	86.8	83.0	88.2	83.3	84.9
Av Wean Weight – Bulls	492	508	504	520	480	493
Av Wean Weight – Heifers	447	462	455	471	438	450
Av Days - Birth to Wean	266	273	266	272	267	275
Av Weaning Date	Jan 12	Jan 17	Jan 15	Jan 18	Jan 10	Jan 16

Late Wean (Mar 1st Plus)

	All Farms		Under 100		100 Plus	
	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>	<u>2018</u>	<u>2019</u>
No. of Farms	13	9	8	6	5	3
Weaning Rate %	85.9	86.7	86.5	89.9	84.9	80.3
Av Wean Weight – Bulls	521	525	528	525	511	527
Av Wean Weight – Heifers	468	475	471	478	463	470
Av Days - Birth to Wean	312	337	345	338	258	334
Av Weaning Date	Mar 27	Mar 18	Apr 4	Mar 23	Mar 15	Mar 9

OTHER FACTORS

Weaning Rates Comparisons With And With Out Pregnancy Testing

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>3-Yr Av</u>
All Cow-Calf Farms	51	51	46	52
% of Preg Testing	22%	25%	24%	24%
Wean Rates w/Preg Test	82.7%	84.8%	91.7%	86.4%
Wean Rates w/o Preg Test	84.1%	84.0%	85.1%	84.4%

De-horning:

In 2019, 7% of the total cow-calf entities in the benchmark project de-horned their animals, compared to 8% in 2018, 18% in 2017, and 19% in 2016. The average over the most recent past 3 years is 11%.

Breeding Stock Sold:

In 2019, 15% of the total cow-calf operations in the benchmark project sold breeding stock, compared to 16% in 2018, 18% in 2017, and 19% in 2016; an average of 16.3% from 2019 to 2017, inclusive. The average number of animals sold for breeding was 1.7% of total animals on the farm in 2019, compared to 3.7% in 2018, 4.0% in 2017, and 1.4% in 2016. This is an average of 3.1% over the most recent past 3 years.

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:

BULLS

Category (No. of Backgrounders)	2019	2019	2017-19	2019	2017-19
	<100 & >100	<100	3-Yr Av	>100	3-Yr Av
Number of Farms:	27	21	19	6	5
Av No. of Backgrounders	83	55	54	180	192
Av Wt of Purchased & Retained Head	500	499	487	504	480
Av Shipping Weight (Lbs)	852	859	837	827	853
Mortality Rate %	0.85	0.80	0.85	1.01	0.84
Days on Grass &/or Feeders	254	253	258	258	269
Av Daily Gain (Lb/day)	1.40	1.43	1.39	1.28	1.42
Av. Backgrounder Cost Per Head	\$1744	\$1751	\$2083	\$1717	\$2052
Total Cost of Production Per Head	\$2314	\$2356	\$2650	\$2167	\$2521
Av Total Cost per Lb Gained	\$1.74	\$1.83	\$1.76	\$1.41	\$1.28
Total Cost of Feed Per Head	\$247	\$254	\$236	\$225	\$240
Av Feed Cost per Lb Gained	\$0.72	\$0.72	\$0.69	\$0.71	\$0.65
Av Cash Return Per Head	(\$97)	(\$94)	\$49	(\$110)	\$82
Av Net Return Per Head	(\$237)	(\$245)	(\$90)	(\$209)	(\$20)
Av Capital Costs Per Head	\$2783	\$3075	\$2785	\$1761	\$1584

Category (No. of Backgrounders)	HEIFERS				
	2019 <u><100 & >100</u>	2019 <u><100</u>	2017-19 <u>3-Yr Av</u>	2019 <u>>100</u>	2017-19 <u>3-Yr Av</u>
Number of Farms:	31	24	21	7	4
Av No. of Backgrounders	76	50	51	163	216
Av Wt of Purchased & Retained Head	446	442	438	461	457
Av Shipping Weight (Lbs)	740	739	723	745	748
Mortality Rate %	1.18	1.34	0.92	0.64	0.49
Days on Grass &/or Feeders	255	251	259	268	255
Av Daily Gain (Lb/day)	1.16	1.19	1.13	1.07	1.16
Av. Backgrounder Cost Per Head	\$1292	\$1284	\$1700	\$1317	\$1732
Total Cost of Production Per Head	\$1834	\$1866	\$2223	\$1725	\$2192
Av Total Cost per Lb Gained	\$1.99	\$2.15	\$1.97	\$1.45	\$1.60
Total Cost of Feed Per Head	\$207	\$211	\$190	\$195	\$243
Av Feed Cost per Lb Gained	\$0.73	\$0.74	\$0.69	\$0.69	\$0.84
Av Cash Return Per Head	(\$222)	(\$225)	(\$62)	(\$213)	(\$53)
Av Net Return Per Head	(\$369)	(\$387)	(\$209)	(\$308)	(\$134)
Av Capital Costs Per Head	\$2993	\$3373	\$3000	\$1690	\$1788

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				
	2019 <u><100 & >100</u>	2019 <u><100</u>	2017-19 <u>3-Yr Av</u>	2019 <u>>100</u>	2017-19 <u>3-Yr Av</u>
Number of Farms:	16	10	13	6	5
Av No. of Feeders	107	57	50	189	167
Av Wt of Feeders Purchased	803	792	792	821	841
Av Shipping Wt at Farm (Lbs)	1210	1224	1203	1188	1210
Mortality Rate %	1.09	0.97	0.63	1.29	0.80
Shrinkage %	6.67	6.23	6.82	7.40	7.08
Dressing % at Plant	61.13	61.33	60.61	60.79	61.12
Dressing % Feedlot to Carcass	57.04	57.49	56.47	56.74	56.78
Hot Hanging Weight	691	704	680	669	687
Slaughter Age (Birth to slaughter - months)	26	28	28	24	24
Days on Feed	244	284	260	177	191
Av Daily Gain (Lb/day)	1.76	1.57	1.66	2.08	2.00
Av. Feeder Cost Per Head	\$2324	\$2323	\$2718	\$2325	\$2786
Total Cost of Production Per Head	\$3237	\$3306	\$3620	\$3122	\$3533
Av Total Cost per Lb Gained	\$2.31	\$2.37	\$2.21	\$2.26	\$2.07
Total Cost of Feed Per Head	\$514	\$571	\$474	\$418	\$393
Av Feed Cost per Lb Gained	\$1.30	\$1.35	\$1.16	\$1.21	\$1.10
Av Cash Return Per Head	\$721	\$723	\$600	\$718	\$689
Av Net Return Per Head	\$578	\$562	\$436	\$603	\$560
Av Capital Costs Per Head	\$1991	\$2104	\$2516	\$1802	\$1826

Category (No. of Finish Animals)	HEIFERS				
	2019 <u><100 & >100</u>	2019 <u><100</u>	2017-19 <u>3-Yr Av</u>	2019 <u>>100</u>	2017-19 <u>3-Yr Av</u>
Number of Farms:	16	13	13	3	3
Av No. of Feeders	92	58	51	240	180
Av Wt of Feeders Purchased	703	702	701	708	680
Av Shipping Wt at Farm (Lbs)	1008	1013	992	985	971
Mortality Rate %	0.74	0.82	0.45	0.39	0.31
Shrinkage %	6.51	6.37	6.89	7.09	7.90
Dressing % at Plant	61.68	61.66	61.81	61.73	63.06
Dressing % Feedlot to Carcass	57.64	57.71	57.53	57.33	58.07
Hot Hanging Weight	580	584	571	564	563
Slaughter Age (Birth to slaughter - months)	27	27	28	26	25
Days on Feed	276	290	279	212	228
Av Daily Gain (Lb/day)	1.16	1.12	1.09	1.32	1.31
Av. Feeder Cost Per Head	\$1824	\$1836	\$2238	\$1772	\$2130
Total Cost of Production Per Head	\$2681	\$2718	\$3037	\$2521	\$2808
Av Total Cost per Lb Gained	\$2.88	\$2.92	\$2.84	\$2.71	\$2.38
Total Cost of Feed Per Head	\$455	\$461	\$401	\$426	\$352
Av Feed Cost per Lb Gained	\$1.51	\$1.51	\$1.41	\$1.52	\$1.23
Av Cash Return Per Head	\$496	\$468	\$402	\$616	\$576
Av Net Return Per Head	\$326	\$289	\$233	\$486	\$455
Av Capital Costs Per Head	\$2316	\$2467	\$2525	\$1662	\$1733

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. When doing so, be sure you are comparing cost data from the same time periods.

Next Steps

The benchmarking program funding expires this year. The goal is to obtain additional funding to extend the program for another five years. In addition to the value created for producers, the production and financial benchmarks are important to all stakeholders. The plans are to continue to use the benchmarking data to support the Bison Forecasting Tool which was developed in 2017 and made available in early 2018. The Forecasting Tool allows producers to 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. The Bison Forecasting Tool can be found on the SBA and CBA websites.

We look forward to working with those who will continue to support the program in the future. For those individuals interested in the benchmark project, please contact Gerard Woyrnarski at 306-536-9841 or the SBA/CBA office at 306-522-4766 for additional information.