JOURNAL OF THE NACAA

ISSN 2158-9429

VOLUME 9, ISSUE 1 - JUNE, 2016

Editor: Donald A. Llewellyn

A SUCCESSFUL YOUTH BEEF EXHIBITOR PROGRAM: REVIEWING HISTORY, INDUSTRY MILESTONES, EDUCATION, AND 35 YEARS OF CARCASS EXCELLENCE

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ABSTRACT

The Benton Franklin Fair in Kennewick, WA has held a youth Steer of Merit (SOM) carcass contest since 1979. Our objective was to review the SOM program and its impact on educating youth beef exhibitors. From 1979-2013, 1,753 youth-exhibited market steers were evaluated. To receive awards and other prizes, the exhibitors were required to attend the educational programs. Historical industry data were used for comparisons. Results indicate that hot carcass weight (HCW), USDA Quality Grade (QG), and USDA Yield Grade (YG) followed industry standards, but ribeye area (REA) decreased slightly. In conclusion, the Benton Franklin Fair SOM program has been an effective program in educating youth beef producers in production of superior beef animals.

INTRODUCTION

HISTORY

Since 1948, the Benton Franklin Fair located in Kennewick, Washington has provided a venue for youth beef producers (both 4-H and FFA) to exhibit their steers and take part in educational programs focused on producing high-quality and wholesome beef products. Part of the educational effort has been the Benton Franklin Fair's "Steer of Merit" (SOM) program. Since the inception of the program in 1979, it has followed the "Washington Steer of Merit" (WSOM) criteria developed by Extension faculty at Washington State University (WSU) in the mid-1970s. While the minimums for SOM criteria (average daily gain (ADG), hot carcass weight (HCW), USDA quality grade (QG), USDA yield grade (YG), and ribeye area (REA)) have changed several times to stay consistent with industry standards, the basic structure of the program has remained constant.

The first Benton Franklin SOM contest was held in 1979 with input and support by WSU Extension, individual cattle producers, the Franklin County Cattlemen's Association, the Benton Franklin Fair Market Stock Committee, and WSU Meat Science Faculty. Since 1980 the Benton Franklin SOM program has been coordinated by two individuals, Jean Smith WSU Extension Educator (1980—2010; now retired), and Dr. Don Llewellyn, Regional Livestock Specialist, WSU Extension (2011—present) with continued support from volunteers and local cattle producers. Both youth exhibitors and breeders of market steers have been recognized for the production of superior carcasses.

PHILOSOPHY

The philosophy of SOM programming has been to teach 4-H and FFA youth beef exhibitors that the value of a market steer is based on carcass value (a combination of quality grade, yield grade, and carcass size (Maddock 2011) and feed conversion, rather than how the animal placed in the show ring. The program has varied over the 35 years of its history, but the emphasis has remained in teaching youth exhibitors how to produce a high quality product for consumers. The overall goals of the SOM program are that economically important traits be evaluated in a methodical and scientific manner and that educational programming is provided to assist and encourage youth exhibitors to meet industry standards with their animals. Busboom & Unruh (1992) and Busboom et al. (2003) noted the purpose of the SOM program:

1. "To create an awareness of current market demands."
2. "To recognize exhibitors and breeders for producing high-value carcasses."
3. "To provide information about carcasses produced in youth shows."

4. “To identify selection, breeding, nutrition, and management practices that result in desirable carcasses.”
5. “To improve the educational value and public image of youth shows.”

EDUCATIONAL PROGRAMMING

Based on the aforementioned philosophy, the SOM educational programming consisted of several components:
• Annual presentation of SOM criteria
• Explanation as to how those criteria are consistent with industry standards during the respective time periods
• Live demonstrations and classroom activities showing why or why not individual animals meet or do not meet the industry standards
• Presentation of educational materials in a variety of forms to support the educational process (i.e. yearly steer of merit results data sets, data summaries, Extension Fact Sheets, slide presentations, and oral and PowerPoint presentations)

In order to receive prize money and other awards for carcasses achieving SOM status, the exhibitors must be present for the educational programming and awards ceremony as required by the award sponsors. The proportion of exhibitors receiving educational programming and information has been greater than 90% of all beef exhibitors.

OBJECTIVE

The objective of this paper is to review the history of the Benton Franklin Fair SOM program and its impact on the production of superior beef animals through meeting industry standards and on educating youth beef exhibitors in sound management practices for their steer projects to meet those standards.

METHODS

From 1979 until 2013, a total of 1,753 youth-exhibited market steers have been evaluated for the SOM program. Carcasses were evaluated based on SOM criteria including hot carcass weight (HCW), ribeye area (REA), USDA Quality Grade (QG), USDA Yield Grade (YG), and average daily gain (ADG) in effect during the respective time periods. The changes in SOM criteria over time were instituted to remain consistent with industry standards (Table 1) and have followed the Washington Steer of Merit and its updates as developed by Washington State University Exension (McReynolds & Johnson, 1978; Busboom & Unruh, 1992; Busboom et al., 2003).

Trait[1]	1979-1980	1981	1982-1985	1986	1987-1989	1990-1991	1992	1993-2000	2001	2003 to Present
HCW	550 lb. minimum	*	*	550 lb. minimum 900 lb. maximum	600 lb. minimum 850 lb. maximum	600 lb. minimum 900 lb. maximum	*	*	*	600 lb. minimum. 900 lb. maximum
Minimum REA	1.8 in^2/100 lbs. of HCW	*	*	*	*	*	Calculated on sliding scale	*	Calculated on sliding scale up to minimum of 13.0 in^2	Calculated on sliding scale up to minimum of 13.1 in^2; (HCW x 0.012) + 3.8; for carcasses up to 775 lbs.; larger REA not required for carcasses heavier than 775 lbs.
Fat thickness at 12th rib	0.10 or less/100 lbs. of HCW	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A
USDA QG	Low Choice Minimum	*	*	*	*	*	*	*	*	Low Choice Minimum
USDA YG	2.9 or lower	*	*	*	*	*	*	*	*	2.9 or lower for Low Choice 3.4 for Average/High Choice 3.9 for Prime
ADG	Not Required	2.25 lbs./day	2.0 lbs./day	*	2.5 lbs./day	*	*	2.5 lbs./day Must be fed a minimum of 100 days	*	2.6 lbs./day Must be fed a minimum of 100 days before the show.

Table 1. Washington Steer of Merit criteria and changes 1979 to present.

HCW = hot carcass weight; REA = ribeye area; USDA QG = USDA Quality Grade; USDA YG = USDA Yield Grade; N/A = not applicable to the period; * indicates no change from the previous year’s criteria.

This paper will focus on the comparisons between carcass traits recorded at the Benton Franklin Fair during 1979-1991 (Group 1) with subsequent years, including 1992-1995 (Group 2), 1996-2000 (Group 3), 2001-2005 (Group 4), and 2006-2013 (Group 5). SPSS was used to conduct statistical analyses on the data. In order to determine whether the means of the control group (Group 1) were statistically different from each comparison group (Group 2-5), Independent Samples T-tests were conducted. This test was appropriate because the groups were differentiated by time periods; thus none of the samples overlapped. Assumptions were checked to ensure the test was appropriate to use for comparison with each of the groups. Differences between groups were considered significantly different at the $P<0.05$ level. While ADG is a WSOM criteria, it was not included in the data analysis because it was not reported in the industry data and therefore was not available for comparison.

The National Beef Quality Audit (NBQA; Lorenzen et al., 1993; Boleman et al., 1998; McKenna et al., 2002; Garcia et al. 2008; Moore et al. 2012) has been conducted five times from 1991-2011 and serves as a comprehensive survey that evaluates beef industry efforts to improve beef quality. The NBQA provides extensive beef industry data which allows for the comparison between SOM carcasses and industry carcass averages.

To provide an additional assessment of the economic impact of the programming, carcasses were valued using current premiums and discounts (USDA, 2016; Smith, 2016). Carcass values were generated for steers based on the mean carcass characteristics of all steers evaluated. Steer values were compared between year groups and also between those steers that met all of the SOM requirements. Means and statistical results for HCW, REA, YG, and QG for the entire data set are presented in Tables 2, 3, 4, and 5.

RESULTS AND DISCUSSION

GROUP 1 (1979-1991) AND GROUP 2 (1992-1995)

When comparing steers judged at fairs from 1979-1991 (Group 1) to steers judged at fairs from 1992-1995 (Group 2), there was a significant difference in HCW, REA, and YG (Table 2). There was no statistical difference in QG between carcasses from Group 1 and Group 2. The HCW of the animals increased (P=.03) from the benchmark years and were heavier when compared to average HCW reported in the 1995 National Beef Quality Audit (NBQA) by Boleman et al. (1998). The YG scores were also higher (P<0.001) during 1992-1995 compared to Group 1. The 1991 NBQA noted that in general fatter carcasses had higher quality grades (Lorenzen et al., 1993). However, when comparing Group 1 to Group 2, the significant increase in YG (indicating fatter cattle) did not increase quality grade scores. The increase in HCW and YG represent a trend to bigger and fatter cattle. This increase was likely due to a push toward cattle that would yield more meat and marble better. Ribeye area decreased (P=.01), an undesirable trend, however the 1995 NBQA (Boleman et al., 1998) also observed a decrease in REA compared to the 1991 NBQA (Lorenzen et al., 1993). The lack of change in QG and the unexpected decrease in REA suggest that genetics in use at the time may have limited progress.

	Groups by Year Group 1 (1979-1991)			Group 2 (1992-1995)			95% CI for Mean	
Trait	M	SD	n	M	SD	n	Difference	t
HCW	754.5	75.51	757	764.1	61.18	228	-.10, 19.13	.03
REA	13.7	1.59	756	13.4	1.48	227	-.50, -.04	.01
YG	2.2	.73	756	2.5	.74	228	.20, .41	P<0.001
QG	9.4	.82	756	9.5	.88	228	-.07, .18	.19

Table 2. Results of t-test and descriptive statistics for carcass traits by year groups (1979-1991 and 1992-1995).
HCW = hot carcass weight; REA = ribeye area; YG = USDA Yield Grade; QG = USDA Quality Grade; M = mean; SD = standard deviation; n = number of observations.

GROUP 1 (1979-1991) AND GROUP 3 (1996-2000)

When comparing steers judged at the fair from 1979-1991 to steers judged at the Benton Franklin Fair from 1996-2000, there were significant increases in HCW, REA, YG, and QG (Table 3). Increases in HCW (P<0.001), REA (P=.03), and QG (P<0.001) is considered a positive step towards improving carcass trends. While the increase (P<0.001) in YG may not have been desirable, the average YG for Group 3 (1996-2000) was less than the average YG reported in the 2000 NBQA (McKenna et al., 2002). In addition, the Group 3 steers had larger REA, and slightly lower HCW compared to those reported by McKenna et al. (2002).

	Groups by Year Group 1 (1979-1991)			Group 3 (1996-2000)			95% CI for Mean	
Trait	M	SD	n	M	SD	n	Difference	t
HCW	754.5	75.51	757	773.4	69.19	239	8.50, 29.14	P<0.001
REA	13.7	1.59	756	13.9	1.69	239	-.01, .46	.03
YG	2.2	.73	756	2.5	.72	239	.19, .40	P<0.001
QG	9.4	.82	756	9.8	1.19	239	.24, .56	P<0.001

Table 3. Results of t-test and descriptive statistics for carcass traits by year groups (1979-1991 and 1996-2000).
HCW = hot carcass weight; REA = ribeye area; YG = USDA Yield Grade; QG = USDA Quality Grade; M = mean; SD = standard deviation; n = number of observations.

GROUP 1 (1979-1991) AND GROUP 4 (2001-2005)

When comparing steer carcasses from 1979-1991 to those exhibited at the fair from 2001-2005 (Table 4), there were significant differences in HCW (P<0.001), and REA (P=0.01). Yield grade and QG were not significantly different. Group 4 HCW and REA both significantly increased compared to Group 1 (P<0.001 and P=.01, respectively). Because HCW and REA are used in calculating YG, the increases may have influenced YG and the fact that the cattle were leaner likely kept QG from increasing. The HCW of Group 4 steers kept pace with averages of the industry and REA of the Group 4 steers exceeded the averages of the industry by 0.7 in^2 (Garcia, et al., 2008).

	Groups by Year Group 1 (1979-1991)			Group 4 (2001-2005)			95% CI for Mean	
	M	SD	n	M	SD	n	Difference	t
HCW	754.5	75.51	757	787.4	68.51	160	20.20, 45.59	P<0.001
REA	13.7	1.59	756	14.1	2.22	160	.05, .78	.01
YG	2.2	.73	756	2.3	.90	160	-.05, .25	.10
QG	9.4	.82	756	9.5	.80	160	-.09, .19	.25

Table 4. Results of t-test and descriptive statistics for carcass traits by year groups (1979-1991 and 2001-2005).
HCW = hot carcass weight; REA = ribeye area; YG = USDA Yield Grade; QG = USDA Quality Grade; M = mean; SD = standard deviation; n = number of observations.

GROUP 1 (1979-1991) AND GROUP 5 (2006-2013)

When comparing steers judged at the Benton Franklin Fair from 1979-1991 to steers judged at the fair from 2006-2013, there were significant differences (P<0.001) in HCW, REA, YG, and QG (Table 5). The results show the Steer of Merit program steers from 2006-2013 significantly increased HCW, YG, and QG, while REA decreased. The significant decrease in REA is undesirable and unexpected. Hot carcass weights for the Group 5 steers were approximately 37 lbs. lighter than the average of the industry during that time period. The REA measurements for the Group 5 steers were also slightly less than the industry average of 13.76 in^2 in 2011. The USDA YG of the Group 5 steers remained below the industry average (2.7 vs. 2.9; Moore et al., 2011).

	Groups by Year							
	Group 1 (1979-1991)			Group 5 (2006-2013)			95% CI for Mean	
Trait	M	SD	n	M	SD	n	Difference	t
HCW	754.5	75.51	757	793.0	72.73	370	29.16, 47.73	P<0.001
REA	13.7	1.59	756	13.3	1.45	370	-.65, -.27	P<0.001
YG	2.2	.73	756	2.7	.66	370	.41, .58	P<0.001
QG	9.4	.82	756	9.9	.91	366	.38, .60	P<0.001

Table 5. Results of t-test and descriptive statistics for carcass traits by year groups (1979-1991 and 2006-2013).
HCW = hot carcass weight; REA = ribeye area; YG = USDA Yield Grade; QG = USDA Quality Grade; M = mean; SD = standard deviation; n = number of observations.

Average HCW have significantly increased since benchmark years. This increase indicates a trend toward larger cattle that will yield more beef product per carcass. Yield grade has also tended to increase when compared to benchmark years. This could be viewed as unfavorable because higher YG indicates higher fat and wastage. However, all five previous National Beef Quality Audits (Lorenzen et al. 1993, Boleman et al. 1998, McKenna et al. 2002, Garcia et al. 2008, Moore et al. 2012) have showed a trend toward higher QG as YG increases. Average SOM YG have also been consistently lower than YG reported by any NBQA. Ribeye area has tended to increase since 1996 with the exception of Group 5 (2006-2013) where REA decreased. This decrease in REA was unexpected and may suggest more emphasis needs to be put on the importance of larger REA in the future and selection of favorable genetics to meet that goal is indicated.

Quality grades have generally tended to increase, however increases have been inconsistent. Platter et al. (2003) reported that as marbling increased, consumer acceptance increased. Not only do consumers value highly marbled beef, but premiums are often paid for high quality carcasses. Steer of Merit carcasses have generally trended toward more desirable carcass traits, with the exception of increasing yield grades.

To understand the results of our review, it is essential to acknowledge the history of cattle type changes that have defined the beef industry. Intense selection for early maturing small-framed cattle during the early 20th Century gave way to selection for increased size in the 1960s, but was limited by the genetics available. In 1965, the utilization of USDA Yield Grades demonstrated the need for cattle that were not overfat at slaughter. In response, the 1970s and 1980s were defined by the desire to increase frame size. An emphasis was placed on increasing muscling in the 1980s and 1990s with the goal of producing more saleable product. Recently, a more balanced approach to selection and cattle type is apparent in the industry (Ritchie, 2013).

Changes in the way cattle are fed has evolved along with the change in type. Genetics and nutrition play an important role in how the cattle industry can achieve productions goals (Kelley, 2006). Superior genetics associated with the change in type of cattle dictate that feeding practices had to change concomitantly with the type of cattle being produced. Youth exhibitors along with all other cattle producers have had to respond to changes in the direction of the beef industry.

Participants in the SOM program also face many challenges that can limit progress. Financial limitations, resource and infrastructure limitations can pose challenges to the youth participants, and limit carcass trait improvement. The use of “composite” bred show steers may also affect genetic progress. Because Estimated Progeny Differences (EPDs) are different across breeds, crossbred (composite) animals do not generally have EPDs. The lack of EPDs on a sire or dam can make selecting a steer, with the genetic potential for superior carcass traits, difficult.

Youth exhibitors at the Benton Franklin Fair have demonstrated a record of success in producing steers that meet the goals of providing outstanding educational experiences as well as an acceptable product for beef processors and consumers. Over the course of the SOM program, many steers have met or exceeded the SOM criteria. Figure 1 summarizes the proportion of steers meeting the SOM criteria over time. There is a trend toward increasing number of steers qualifying for SOM throughout the course of the programming (1979-2013). With exceptions in years 2001-2004, the most substantial increases in steers qualifying for SOM have occurred since 2000 even though the requirements to attain SOM have become more rigorous since that time.

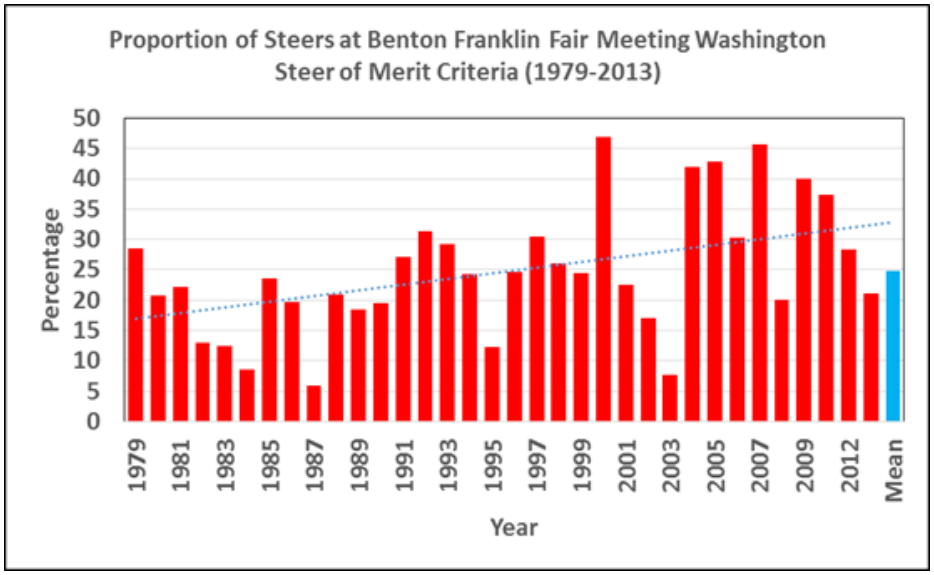

Figure 1. Proportion of steers from the Benton Franklin Fair Steer of Merit competition that have met the Washington Steer of Merit criteria (1979-2013).

Quality grade which takes into account marbling and maturity, and YG which incorporates, among other factors, HCW and REA play significant roles in the determination of carcass value. Figures 2 and 3 demonstrate the ability of the youth producers at the Benton Franklin Fair to produce steers with carcasses that meet or exceed the averages in the industry over time. While steers that met the SOM criteria all had the Ch- or better QG designation, the average of all steers produced in the SOM program from from 1979 until about 1997 did not match the averages of cattle attaining Ch- or better in the industry at that time (Figure 2.). This is likely explained by the quest for larger framed cattle during that period which were in demand for not only the industry, but also were the kind of cattle destined for the show ring. However, there was still a positive trend toward more steers meeting all the SOM requirements from 1979 to 1997 (Figure 1). The same trend continued for more steers meeting the SOM requirements from 1998 to 2013. The fact that show ring cattle typically reflect a more progressive interpretation of the beef industry's direction, also contributes to carcasses that may be too extreme to meet current market demand. Typically those larger framed cattle have higher yielding carcasses (lower YG), but are also leaner and were more challenged to grade USDA Choice. From 1998 to 2013 there was a trend for a greater proportion of all SOM program steers to meet or exceed the national averages for Ch- or better. With the exception of 2002-2004 this positive trend continued. Most recently, the greatest proportion of SOM program steers meeting the Ch- or better threshold have been observed (up to nearly 70% in 2013).

The industry averages for the proportion of steers with a YG of 3 or lower ranged from approximately 74% in 1974 with an increasing trend to a high of 93% in 1995 (Figure 3). In subsequent years, the proportion of steers within the industry with an YG of 3 or lower has remained relatively stable. Throughout the course of the SOM program (1979-2013) the proportion of steers with YG 3 or lower has remained relatively constant at nearly 100%. Steers in the YG 1, 2, or 3 categories are very desirable at finishing and exhibit greater cutability than those with an YG 4 or higher designation. Other than the occasional over-fattened steer, the SOM program has demonstrated a propensity for high-yielding cattle.

Taken together, the increasing proportion of steers at the Benton Franklin Fair that meet all of the SOM requirements, the increasing proportion of all steers at the fair that grade Ch- or better, and the fact that nearly 100% of the steers are in the category of YG 3 or lower, all point to the ability of the youth exhibitors to produce steers that are acceptable for both the processor and consumer.

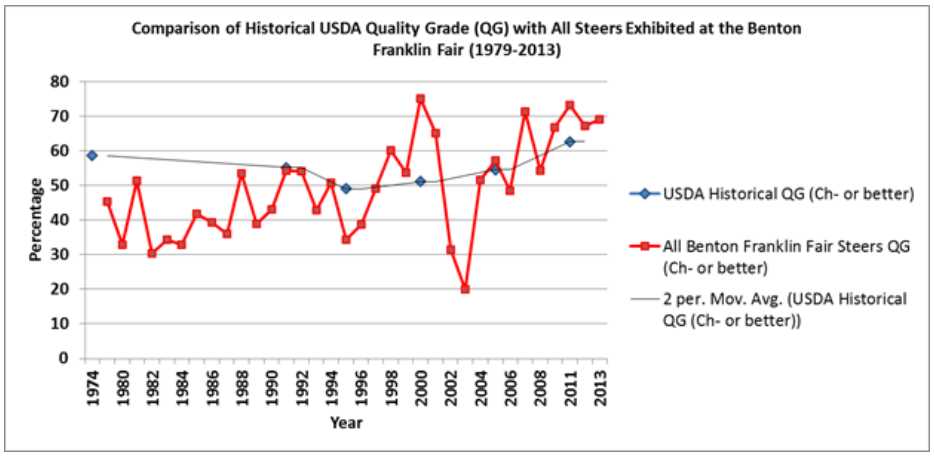

Figure 2. Comparison of historical USDA Quality Grade (QG) with all steers exhibited at the Benton Franklin Fair (1979-2013). (Abraham, 1977; Lorenzen et al., 1993; Boleman, et al., 1998; McKenna et al., 2002; Garcia et al., 2008; Moore, et al., 2012)

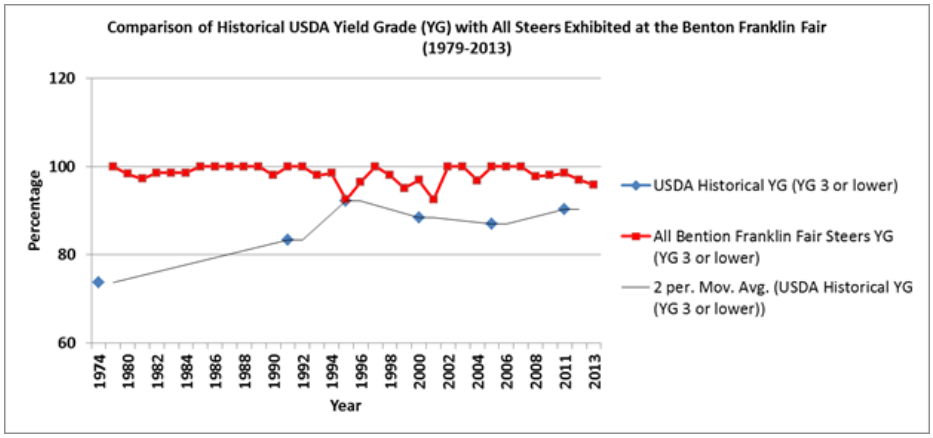

Figure 3. Comparison of historical USDA Yield Grade (YG) with all steers exhibited at the Benton Franklin Fair (1979-2013). (Abraham, 1977; Lorenzen, et al., 1993; Boleman, et al., 1998; McKenna et al., 2002; Garcia et al., 2008; Moore, et al., 2012)

Determination of carcass value was utilized to make comparisons between all steers and those that qualified for SOM for each of the year groups (Table 6). In present day dollars, YG for all steers resulted in a premium across all year groups, but was less in Group 5. This can be attributed to the quest for larger framed, leaner cattle in the early years of the SOM program. The groups for all steers received discounts for QG because the average QG did not quite achieve the desired low USDA Choice designation. Carcass value did increase throughout the year groupings, but was mainly due to an increase in HCW. A substantial increase in carcass value was observed for those steers that met all of the SOM requirements. Within year groups, carcass values increased about 7.3% at the inception of the program which represents an increase in value of about $107. Comparing those steers in Group 5 which met the SOM requirements with those that didn't meet the SOM requirements, an increase in approximately $143 was observed. Comparing the SOM steers in Group 5 with all steers in Group 1, the SOM steers had a $216 advantage in value. The increase in value of producing steers that qualifies for SOM represent more income for the exhibitor and reflects well on the educational process that provides a foundation on which youth producers build their steer projects.

Expected Carcass Value of All Steers By Year Groupings**

	Group 1 (1979-1991)	Group 2 (1992-1995)	Change*	Group 3 (1996-2000)	Change	Group 4 (2001-2005)	Change	Group 5 (2006-2013)	Change
HCW	$ 1,502.44	$ 1,521.38	$ 18.94	$ 1,539.91	$ 37.47	$ 1,567.93	$ 65.49	$ 1,579.00	$ 76.56
YG	$ 15.09	$ 15.28	$ 0.19	$ 15.47	$ 0.38	$ 15.75	$ 0.66	$ 12.85	$ (2.24)
QG	$ (41.50)	$ (42.02)	$ (0.52)	$ (42.53)	$ (1.04)	$ (43.31)	$ (1.81)	$ (43.61)	$ (2.11)
Totals	$ 1,476.03	$ 1,494.63	$ 18.60	$ 1,512.85	$ 36.82	$ 1,540.37	$ 64.34	$ 1,548.23	$ 72.20

Expected Carcass Value of Steers Meeting SOM Criteria By Year Groupings***

	Group 1 (1979-1991)	Group 2 (1992-1995)	Change	Group 3 (1996-2000)	Change	Group 4 (2001-2005)	Change	Group 5 (2006-2013)	Change
HCW	$ 1,555.24	$ 1,587.61	$ 85.17	$ 1,611.41	$108.97	$ 1,629.05	$126.61	$ 1,675.85	$173.41
YG	$ 27.86	$ 15.41	$ 0.32	$ 15.64	$ 0.55	$ 15.82	$ 0.72	$ 16.27	$ 1.18
QG	$ -	$ -	$ 41.50	$ -	$ 41.50	$ -	$ 41.50	$ -	$ 41.50
Totals	$ 1,583.10	$ 1,603.03	$126.99	$ 1,627.05	$151.02	$ 1,644.86	$168.83	$ 1,692.12	$216.09
Differences in Totals[1]	$ 107.07	$ 108.39		$ 114.21		$ 104.49		$ 143.88	

Table 6. Comparison of expected value of Benton Franklin Fair steers by year groups including those qualifying for Steer of Merit (SOM; 1979-2013).
*Change is the difference between the respective group and Group 1 averages for all steers
**Base carcass price for the average of all steers was $199.12/cwt based on 600-900# USDA Select QG carcasses and was obtained from the USDA Market News Service for the week of March 7, 2016.
***Base carcass price for steers meeting SOM criteria was $206.01/cwt based on 600-900# USDA Choice QG carcasses and was obtained from the USDA Market News Service for the week of March 7, 2016. Premiums and discounts for carcass weights, yield grades, and quality grades were obtained from the National Weekly Direct Slaughter Cattle - Premiums and Discounts from the USDA Livestock, Poultry, and Grain Market News Division for the week of March 7, 2016 and Smith (2016) USDA Market News Service, USDA Beef Carcass Price Equivalent Index Value.
[1]Represents the additional income from steers that qualified for SOM compared to the average income of all steers that participated.

CONCLUSIONS

The Benton Franklin Fair Steer of Merit program provides unique insight into the history and changes in the beef industry over the last 35 years and has provided a means to recognize youth exhibitors for their ability to produce superior beef carcasses. Given the challenges that participants face, the Benton Franklin Fair Steer of Merit program has continued to educate youth, parents, and leaders involved in the program and carcasses have continued to meet or exceed industry standards and consumer demands. The beef cattle education in selection, feeding, handling, and meat science provided by the SOM program (required by sponsors for exhibitors to receive prizes) is being applied by the youth producers and the Benton Franklin Fair steers reflect their knowledge and abilities.

LITERATURE CITED

Abraham, H. C. (1977). Grades of Fed Beef Carcasses, November 1973-October 1974 (No. 1073). United States Department of Agriculture, Agricultural Marketing Service.

Boleman, S. L., Boleman, S. J., Morgan, W. W., Hale, D. S., Griffin, D. B., Savell, J. W., Ames, R. P., Smith, M. T., Field, T. G., Smith, G. C., Gardner, B. A., Morgan, J. B., Northcutt, S. L., Dolezal, H. G., Gill, D. R., & Ray, F. K. (1998). National Beef Quality Audit-1995: survey of producer-related defects and carcass quality and quantity attributes. J. Anim. Sci. 76(1), 96-103.

Busboom, J. R., & Unruh, J. R. (1992). Washington Steer of Merit. Fact Sheet EB1460. Washington State University Extension. Pullman, WA.

Busboom, J. R., Unruh, J. R., & Lundrigan, R. (2003). Washington Steer of Merit. Fact Sheet EB1460E. Washington State University Extension. Pullman, WA.

Garcia, L. G., Nicholson, K. L., Hoffman, T. W., Lawrence, T. E., Hale, D. S., Griffin, D. B., Savell, J. W., VanOverbeke, D. L., Morgan, J. B., Belk, K. E., Field, T. G., Scanga, J. A., Tatum, J. D., & Smith, G. C. (2008). National Beef Quality Audit–2005: Survey of targeted cattle and carcass characteristics related to quality, quantity, and value of fed steers and heifers. J. Anim. Sci. 86(12), 3533-3543.

Kelley, A. L. (2006). The relationship of genetics and nutrition and their influence on animal performance. Proceedings of the Beef Improvement Federation 38th Annual Research Symposium and Annual Meeting, Chocktaw, Mississippi, April 18-21, 2006. Pp. 84-90.

Lorenzen, C. L., Hale, D. S., Griffin, D. B., Savell, J. W., Belk, K. E., Frederick, T. L., Miller, M. F., Montgomery, T. H., & Smith, G. C. (1993). National Beef Quality Audit: survey of producer-related defects and carcass quality and quantity attributes. J. Anim. Sci. 71(6), 1495-1502.

Maddock, R. (2011). The Relationship between Carcass Quality and Value. https://www.ag.ndsu.edu/cattledocs/the-relationship-between-carcass-quality-and-value/files/rob-maddock-carcass-quality-and-value-2011.pdf

McKenna, D. R., Roebert, D. L., Bates, P. K., Schmidt, T. B., Hale, D. S., Griffin, D. B., Savell, J. W., Brooks, J. C., Morgan, J. B., Montgomery, T. H., Belk, K. E., & Smith, G. C. (2002). National Beef Quality Audit-2000: survey of targeted cattle and carcass characteristics related to quality, quantity, and value of fed steers and heifers. J. Anim. Sci. 80(5), 1212-1222.

McReynolds, W. E., & Johnson, J. B. (1975). Washington Steer of Merit. Extension mimeo EM 2531. Washington State University Extension. Pullman, WA.

Moore, M. C., Gray, G. D., Hale, D. S., Kerth, C. R., Griffin, D. B., Savell, J. W., Raines, C. R., Belk, K. E., Woerner, D. R., Tatum, J. D., Igo, J. L., VanOverbeke, D. L., Mafi, G. G., Lawrence, R. J., Delmore, Jr., R. J., Christensen, L. M. Shackelford, S. D., King, D. A., Wheeler, T. L., Meadows, L. R., & O'Connor, M. E. (2012). National Beef Quality Audit–2011: In-plant survey of targeted carcass characteristics related to quality, quantity, value, and marketing of fed steers and heifers. J. Anim. Sci. 90(13), 5143-5151.

Platter, W. J., Tatum, J. D., Belk, K. E., Chapman, P. L., Scanga, J. A., & Smith, G. C. (2003). Relationships of consumer sensory ratings, marbling score, and shear force value to consumer acceptance of beef strip loin steaks. J. Anim. Sci. 81(11), 2741-2750.

Ritchie, H. (2013). Historical review of cattle type. https://www.msu.edu/~ritchieh/historical/cattletype.html

Smith, B. (2016). USDA Market News Service, USDA Beef Carcass Price Equivalent Index Value www.ams.usda.gov/mnreports/NW_LS410.txt

USDA Livestock, Poultry, and Grain Market News Division. (2016). National Weekly Direct Slaughter Cattle - Premiums and Discounts www.ams.usda.gov/mnreports/lm_ct155.txt

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