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FACTORS AFFECTING THE PRICE PAID FOR SPRING-YEARLING BULLS

T. T. Marston, D. W. Moser, and L. E. Wankel

Summary

Many factors are considered when commercial cow/calf producers buy bulls. Breeding system needs and breeder's preference determine which breed of bull will be purchased at a multi-breed sale. Our analysis of prices paid for bulls tested and sold through the Kansas Bull Test Station indicates that bull consigners' reputations and marketing techniques influence the price received for bulls at such an event. Individual performance and genetic potential are other areas of interest to bull buyers. Buying habits and prices indicate that commercial cow/calf operations use different traits, depending on the breed, to enhance their cowherd's production.

Introduction

Commercial cow/calf producers are provided a multitude of performance, genetic, and ancestral information on which to base their herd bull purchases. The number of traits reported by breed associations over the past 20 years has increased, but it is not known what specific information commercial bull buyers utilize. Certainly, independent selection is needed to optimize the production of differing cowherds. However, understanding the importance of specific information is useful to both the commercial cow/calf industry and to the bull suppliers. Information from the last four Kansas Bull Test sales was used to determine the monetary value of the information.

Experimental Procedure

Data were combined for Kansas Bull Test sales from 1997 through 2000. Information included in the analysis was taken directly from the sale catalog and compared to the purchase price of 678 spring-born, yearling bulls. Breeds included in the analysis were: Angus, Simmental, Charolais, Hereford, Gelbvieh and Red Angus. The data were fitted to a regression model, and independent variables were removed in a stepwise procedure until all remaining variables approached significance ($P<.20$). Phenotypic appearance probably affected the selling price, but it could not be estimated from the catalog information and therefore became part of the regression model's error term.

Results and Discussion

Independent variables included in the final model explained 71.5% of the variation in the auction prices. Significant differences in breed ($P<.01$) and sale year ($P<.03$) were noted. Table 1 shows the mean value of bulls by breed and year. Our data indicate a general trend for the price of bulls to increase over the four years. Variation among breeds indicated that bull buyers changed buying habits, depending upon which breed was being auctioned. The breeder of each bull was assigned an identification number that was included in the regression analysis. This allowed the model to evaluate whether a particular breeder had a price advantage within a particular breed of bulls. The model indicated

that the consignor within each breed significantly affected price (P<.01). The range in prices received indicates that consignors should place major emphasis on developing excellent reputations and promotion/marketing skills.

The individual bull's performance was important. Buyers preferred older bulls born within the spring calving season. They paid $3.53 ± 1.02 for each added day of age. Actual birth weight, average daily gain during the 112-day test, and weight per day of age were also significant factors (P<.01). As birth weight increased, a bull's worth was decreased $14.97 ± 2.89 per pound. High performance cattle were rewarded monetarily as $379 ± 115 and $869 ± 172 was paid, respectively, for each additional pound of average daily gain (ADG) and weight per day of age (WDA). The Kansas Bull Test calculates and reports an individual test index composed of the average ADG and WDA ratios within respective breeds. Bull buyers used the test index to price bulls. Interestingly, adjusted 205-day and yearling weights did not affect a bull's value.

Ultrasound measurements were reported for back fat, ribeye area, and marbling score. Table 2 summarizes the influence that those measurements had on purchase prices. Buyers paid premiums for heavy muscled, higher marbling bulls. However, the buyers discounted bulls that were fat externally.

Genetic predictions for growth and management are best expressed through EPDs. Buyers utilized birth weight, weaning weight, and milk EPDs within breeds to determine their purchases (Table 3). Angus, Gelbvieh, and Hereford bull buyers gave substantial premiums for low birth weight EPD bulls. However, Charolais, Red Angus and Simmental bull buyers did not place as much emphasis on birth weight EPDs. Angus and Simmental consignors were rewarded for greater weaning weight EPDs while other breeds were not. Yearling weight EPD was not significant to KBT bull buyers. Hereford bulls with greater milk EPDs commanded greater prices than their contemporaries, but other breed buyers showed little interest in milk EPD values. These data indicate that buyers select bulls differently, depending on which breed is being purchased. It may also indicate that buyers come to the auction with a predetermined need for replacement genetics that are specific to their operation's need and breeding system.

Our results indicate that buyers emphasized individual animal performance (birth weight, ADG, WDA) and EPDs for birth and weaning weight more than they did measurements or EPDs for yearling weight and milk production.

Table 1. Average Prices Paid for Spring Yearling Bulls

	Year			
Breed	1997	1998	1999	2000
Angus				
Price, $	1322	1627	1665	1684
No. of head	99	72	68	66
Charolais				
Price, $	958	1843	1340	1509
No. of head	54	55	40	23
Gelbvieh				
Price, $	1163	1346	1258	1514
No. of head	8	12	6	11
Hereford				
Price, $	785	1993	1528	1925
No. of head	17	7	10	4
Red Angus				
Price, $	--	2000	1479	1383
No. of head	0	1	12	9
Simmental				
Price, $	1138	1435	1549	1471
No. of head	34	33	39	31
All Breeds				
Price, $	1151	1613	1530	1585
No. of head	212	147	175	144

Table 2. Influence of Ultrasound Measurements on Spring-Yearling Bull's Purchase Price

Measurement	Price Adjustment/Unit of Measure	SE	P value
Backfat, 0.1 in.	-49	29	.08
Ribeye area, sq in.	54	17	.01
Marbling score[a]	69	35	.05

[a]CPEC marbling score scale used: 4 = Slight 00, 5 = Small 00.

Table 3. The Value Paid for EPDs

Item	$ Price Adjustment /1 lb EPD	SE	P value
Angus EPD			
Birth weight	-150	24	.01
Weaning weight	18	4	.01
Milk	3	6	.65
Charolais EPD			
Birth weight	-42	34	.22
Weaning weight	-2	8	.80
Milk	8	10	.46
Gelbvieh EPD			
Birth weight	-115	67	.81
Weaning weight	1	10	.91
Milk	0	17	.99
Hereford EPD			
Birth weight	-64	33	.05
Weaning weight	-5	13	.73
Milk	50	14	.01
Red Angus EPD			
Birth weight	-20	82	.81
Weaning weight	-8	21	.72
Milk	9	20	.65
Simmental EPD			
Birth weight	-50	35	.16
Weaning weight	17	10	.08
Milk	0	14	.98