

Benchmarking Situation and Practices of U.S. Stocker Operations

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SUMMARY

The stocker segment is a critical component of the U.S. beef cattle supply chain and yet arguably the least researched segment of the industry. As cow-calf operations adjust weaning weights, feedlots adjust desired placement weights, and the combination of weather and market forces impact on-ranch cost of gain it is critical to have a deeper understanding of stocker operations. This paper provides a summary of a national producer survey providing a current synthesis of procurement patterns, management practices, and producer perceptions. While the industry is characterized by notable heterogeneity, the most common stocker operation can best be described as managing for 141 days, targeting a 1.90 ADG, and placing multiple sets of cattle each year from auction markets without knowledge of source ranches. Collectively, this information is useful in better understanding management practices within the stocker segment.

INTRODUCTION

Beef cattle production in the United States is principally comprised of three different phases of production: cow-calf, stocking or backgrounding, and finishing. Additional weight gain and the utilization of rangeland and foraged based grazing systems is the typical focus of the stocker segment. Some stocker systems use a mix of feed and forages to add additional pounds to their cattle. Stocker producers buy cattle after weaning or retain their own calves from a cow-calf production system and generally sell the cattle to feedlots to receive a finishing diet.

The stocking segment is important to the overall beef cattle industry due in part to the high emphasis on cattle health management and nutrition during this phase of production. However, the stocker segment has received little economic research attention over the years. A number of issues faced by the stocker industry in the United States are rising in economic importance, but are poorly understood due to evolving risk environments, as well as the issue that the segment has received less research consideration.

A key issue is the lack of ongoing benchmarking of practices and systems in place on stocker operations across the U.S. Compared to cow-calf and feedlot sectors, the stocker segment is typically not the focus of USDA surveys or internal industry assessments. This leaves stocker producers, analysts, and industry leaders with a partial ability to assess both individual operation and industry wide issues. Accordingly, the main objective of this paper is to provide a synthesis of current practices in place on U.S. stocker cattle operations to reduce this current knowledge gap. In meeting this objective we seek to provide an industry overview of the stocker cattle segment summarizing production, including management characteristics, perceived average daily gain (ADG) and profitability variability over time,

stocker cattle source, placement frequency and seasonality, risk management strategies, ADG influencers, and producer demographics.

MATERIALS AND METHODS

Given the lack of regularly collected data on the stocker segment consistent with the identified knowledge gap of interest, we conducted a national survey of producers to gain information regarding current cattle procurement practices and management systems. An initial draft of the survey instrument was developed and distributed to stocker producers in attendance at K-State's Cattlemen's Day hosted by the Kansas State Animal Sciences and Industry Department on March 7, 2014. The answers to the questionnaire allowed for a better understanding of stocker cattle management, and resulted in adjustments to the survey instrument. The final survey instrument was prepared in collaboration with *BEEF Magazine*. *BEEF Magazine* provided a distribution list specific to "*Operations with any cattle sold as a stocker/grower, backgrounder or preconditioner*" as that best aligned with our target group of stocker and background operations.

The survey instrument was mailed to producers from all regions of the United States on September 4, 2014. An explanatory cover letter and a dollar bill was included to increase survey response rates (Gregory, 2008; Schulz and Tonsor, 2010). Two weeks after the final mailing went out, on September 15, 2014, recipients were sent a reminder letter. Surveys were mailed to 2,000 producers with 554 surveys returned for a response rate of 27.7%.

An online survey was also included in this study to augment the mail survey. Survey links were e-mailed out by *BEEF Magazine* to 20,000 producers on September 19, 2014. There was a total of 222

online surveys completed for a response rate of 1.11%. The entire survey response totaled 776 of which 507 were usable in the analysis.¹

RESULTS AND DISCUSSION

The comprehensive survey contained questions regarding various aspects of production, including management characteristics, cattle and forage source, seasonality, ADG influencers, variability in net returns and ADG, and base demographic questions. Table 1 provides several summary statistics for operator characteristics for survey respondents.

The mean age of the survey respondents was 58 years, 96% of respondents were male, and responses were received from producers in 37 different states. The largest share of producers (47%) claimed they received at least a bachelor's college degree when asked about their educational background. While of course individual operations vary in what volume and type of cattle they sell, in 2013 the average sales across respondents were 68 cows, 236 calves, and 1,339 yearlings.

The largest segment of producers (46%) described their operations are stocker/backgrounder with cow-calf followed by one-fourth indicating they had a 100% stocker/backgrounder operation. Over 82% of respondents indicated their title as both the owner and manager of the operation and over 72% indicated they have been raising beef cattle for over 30 years.

Table 2 summarizes management details regarding cattle and forage sourcing. Survey respondents were asked to indicate what percentage range (available answers were 0%, 1-25%, 26-50%, 51-75%, and 76-100%) represents the native source of their stocker cattle they typically purchase or manage. Using

¹ Interested readers may find the full survey instrument in Hill (2015).

midpoints of the answer ranges we derived a weighted average value to compare relative predominance of regions for sourcing. The regions were ordered from highest to lowest in weighted average as cattle sources from Midwest (20.9%), Southwest (18.1%), Southeast (16.4%), West (14.9%), and Far West (5.4%) with the remaining regions sourcing less than 5%.

Beyond region, in this survey producers were also asked to indicate which procurement sources they use to typically source their cattle. The most common response (40.0%) from producers was purchasing their cattle from an auction market without knowledge of source ranches. This was followed by 27.4% indicating they retain stocker cattle from their own cow-calf operation, 13.9% who purchase cattle from auction markets with knowledge of source ranches, 10.8% who purchase directly from individual cow-calf ranches, and 5.6% that purchase cattle from internet or video auctions.

To obtain information regarding different forage sources used by stocker producers, respondents were asked to indicate what percentage of their total stocker/backgrounder cattle are on six different forage sources. As Table 2 indicates, the most prevalent (32.4%) forage source for survey respondents is dry lot (bunk fed storage, confined management of harvested feed). Dry lots are closely followed by 29.1% indicating use of cool season grass pasture (brome, fescue, perennial ryegrass, etc.) and 25.7% using warm season grass pasture (switchgrass, big bluestem, etc.). The balance of forage comes from fall cereal pasture (cereal grain pastures such as winter wheat, oats, or ryegrass), dormant winter feed (stockpiled dormant forage and crop residue), warm season annual (annual planted specifically for cattle grazing such as Sudan), or a source not listed in the survey.

Table 3 summarizes cattle management and performance information regarding the length of time stockers are owned, how often cattle are placed during the year, and the typical ADG managed for. The most common response regarding feeding duration was, producers indicating they own/manage

stocker cattle for 121 to 180 days (35.9% of respondents). This was followed closely by 29.4% indicating a duration of over 180 days and 21.3% having typical durations of 91-120 days. The remaining 13% of respondents indicated a management time of 90 days or less. Using midpoints of these responses, the weighted average is 141 days managing stocker cattle.

The majority of producers (65.7%) claimed they typically place multiple sets of feeder cattle within one year. Those that indicated they typically place one set of feeder cattle in the fall comprised 20.1% while the remaining respondents place either one set in the spring or have an alternative frequency and seasonality on their operation.

Survey respondents were asked to indicate what average daily gain they typically manage for. The most common response (30.0%) was managing for 1.76 to 2.00 ADG. Over one-fourth of operations indicated they manage for an ADG of 2.01 to 2.25, 17.0% manage for 1.51 to 1.75 ADG, and 15.2% aim to achieve more than 2.25 ADG. The remaining 10% of respondents manage for an ADG of 1.50 or less. Using midpoints of these responses, the weighted average is an ADG of 1.91.

Table 4 summarizes respondent perceptions regarding ADG and net return over the past 10 years. Specifically, producers were asked to “*consider an operation similar to yours that regularly places 500 lb. steers in its backgrounder/stocker operation in October and typically sells at heavier weights about 120 days later in February. Over the past 10 years, what do you believe the average daily gain (ADG), worst ADG, and best ADG have been for this operation?*” A parallel follow-up question inquired about net returns in the same manner.

Across the last 10 years, respondents indicated an average ADG of 1.77, a worst lot/group ADG of 1.07, and a best lot/group ADG of 2.31. Similarly, the average net return over the past 10 years would have been \$76.57/head according to survey responses. The best lot/group over this period would have a

net return of \$193.43/head while the worst lot/group would have a net loss of \$13.65/head. This notable variation in both ADG and returns is important for all producers to appreciate. Going further, it is important to note the range between the worst and average ADG (0.70) is larger than the range between the best and average ADG (0.55) while the range between worst and average returns (\$90.22) is less than the range between best and average returns (\$116.86). This view of wider downside potential for ADG and less downside potential for net return is intriguing and warrants additional research.

Producers were also asked to indicate the improvement in ADG that would be realized if various feeder cattle management and sourcing protocols are implemented. As Table 5 indicates, when presented with the protocol “cattle administered vaccinations consistent with most VAC 45 claims prior to stocker placement,” the most common response was that ADG would increase ADG by 1-10%. Utilizing midpoints of the response categories, the weighted average impact implied by survey answers is an increase of 14.84%. If “cattle (were) purchased from a known and/or limited set of ranches/operations” the weighted average improvement in ADG was 14.82% while having “cattle weaned, dehorned, and castrated at least 45 days prior to placement in stocker operation” is viewed to have a weighted average ADG impact of 18.98%. If a “stocker operation provides average or better quality of feedstuffs and mineral supplementations” the weighted average improvement in ADG is 20.39% and if a “stocker operation uses standard and/or conservative stocking rates (heads/acre)” this impact is 14.94%.

IMPLICATIONS

The stocker sector of the beef industry is important to the industry overall due to the high emphasis on cattle health management and nutrition during this phase of production. However, the stocker industry is not widely researched. The information gained from this research will deepen understanding of stocker operations and situations. Given this improved understanding, targeted educational efforts and ultimately enhanced overall industry decision making will develop.

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LITERATURE CITED

Gregory, A. (2008). Optimal Economic Design of Mail Surveys: Influences of Response Rates and the Impact of Responses to a Second Mailing. *Ph.D. dissertation, Kansas State University.*

Hill, S. (2015). Exploring Producer Perceptions for Cattle Price and Animal Performance in the Stocker Industry. *M.S. thesis, Kansas State Univeristy.*

Schulz, L. L., & Tonsor, G. T. (2010). Cow-Calf Producer Preferences for Voluntary Traceability Systems. *Journal of Agricultural Economics*, 138-162.

Table 1. Summary Statistics of Survey Respondents (n=507)

Variable	Mean	SD	Minimum	Maximum
Male	0.964	0.185	0	1
Age	57.901	13.053	24	88
Bachelor's College Degree	0.471	0.500	0	1
Cows Sold in 2013	68.138	225.279	0	2,000
Calves Sold in 2013	236.329	793.346	0	9,000
Yearlings Sold in 2013	1,339.039	2,328.199	0	20,000
100% Stocker/Backgrounder	0.249	0.433	0	1
Stocker/Backgrounder with Cow-Calf Operation	0.460	0.499	0	1
Stocker/Backgrounder with Feedlot Operation	0.124	0.330	0	1
Stocker/Backgrounder with Both Cow-Calf and Feedlot	0.164	0.370	0	1
Owner and Manager	0.822	0.382	0	1
Owner	0.093	0.290	0	1
Manager	0.061	0.240	0	1
Other	0.014	0.117	0	1

Table 2. Cattle Sourcing

Variable	Mean	SD	Minimum	Maximum
<i>Percentage regional sourcing of feeder cattle^{1,2}</i>				
Southeast (FL, GA, AL, MS, AR, LA, KY & TN)	0.164			
Mid-Atlantic (NC, SC, VA, PA, WV & MD)	0.040			
Midwest (KS, MO, IA, MN, NE & IL)	0.209			
Southwest (TX, OK, AZ & NM)	0.181			
West (MT, WY, CO, SD, ND & ID)	0.149			
Far West (CA, NV, UT, OR & WA)	0.054			
Mexico	0.016			
Canada	0.000			
<i>Percentage of feeder cattle sources²</i>				
Retained from own cow-calf operation	27.394	37.533	0	100
Purchased from auction market without knowledge of source ranches	40.020	39.871	0	100
Purchased from auction market with knowledge of source ranches	13.892	23.928	0	100
Purchased direct from individual cow-calf ranches	10.831	21.328	0	100
Purchased from internet/video auctions	5.571	15.917	0	95

Percentage of total stocker/backgrounder cattle on forage source categories²

Cool season grass pasture (brome, fescue, perennial ryegrass, etc.)	29.073	38.566	0	100
Warm season grass pasture (switchgrass, big bluestem, etc.)	25.652	33.790	0	100
Warm season annual (annual planted specifically for cattle grazing such as Sudan)	2.864	13.105	0	100
Fall cereal pasture (cereal grain pastures such as winter wheat, oats, or ryegrass)	17.341	30.044	0	100
Dormant winter feed (stockpiled dormant forage and crop residue)	11.787	27.066	0	100
Dry lot (bunk fed forage, confined management of harvested feed)	32.368	39.319	0	100
Other forage source	3.540	17.322	0	100

1. Percentages are weighted averages using mid-points of discrete survey responses.

2. Means do not sum to 100% given open-ended nature of survey responses.

Table 3. Cattle Management and Performance

Variable	Mean	SD	Minimum	Maximum
<i>Duration most stockers/backgrounders are typically owned/managed</i>				
Less than 30 days	0.002	0.044	0	1
31-60 days	0.039	0.195	0	1
61-90 days	0.087	0.282	0	1
91-120 days	0.213	0.410	0	1
121-180 days	0.359	0.480	0	1
More than 180 days	0.294	0.456	0	1
<i>Frequency and Seasonality of operation</i>				
Typically place one set of feed cattle in the spring	0.061	0.240	0	1
Typically place multiple sets of feeder cattle within one year	0.657	0.475	0	1
Typically place one set of feed cattle in the fall	0.201	0.401	0	1
Other	0.047	0.213	0	1
<i>ADG placed cattle are typically managed for</i>				
Less than 1.25	0.014	0.117	0	1
1.26-1.50	0.093	0.290	0	1
1.51-1.75	0.170	0.376	0	1
1.76-2.00	0.300	0.459	0	1
2.01-2.25	0.264	0.441	0	1
More than 2.25	0.152	0.359	0	1

Table 4. Perceived ADG and Net Returns of placing 500 lbs steers in October for about 120 days

Variable	Mean	SD	Minimum	Maximum
<i>ADG over past 10 years</i>				
Average ADG across all lots/groups over the past 10 years	1.765	0.804	0	3.750
ADG in the worst lot/group over the past 10 years	1.066	0.652	0	2.700
ADG in the best lot/group over the past 10 years	2.311	1.185	0	7.200
<i>Net return (\$/head) over past 10 years</i>				
Average net return across all lots/groups over the past 10 years	76.57	75.14	0	400.00
Net return in the worst lot/group over the past 10 years	-13.65	72.77	-280	240.00
Net return in the best lot/group over the past 10 years	193.43	186.09	0	1,200.00

Table 5. Perceived Influencers of Realized ADG

Variable	No change	1-10%	11-20%	21-30%	Over 30% higher
Cattle administered vaccinations consistent with most VAC 45 claims prior to stocker placement	0.052	0.386	0.282	0.157	0.122
Cattle purchased from a known and/or limited set of ranches/operations	0.079	0.299	0.356	0.178	0.088
Cattle weaned, dehorned, and castrated at least 45 days prior to placement in stocker operation	0.018	0.221	0.329	0.268	0.164
Stocker operation provides average or better quality feedstuffs and mineral supplementation	0.026	0.155	0.339	0.274	0.206
Stocker operation uses standard and/or conservative stocking rates (head/acre)	0.086	0.310	0.304	0.211	0.089

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