



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Perceptions of Vertical Marketing Arrangement Performance:
Cow-calf Producers versus Multiple Production Level Operators**

Kellie Curry Raper
Oklahoma State University
Department of Agricultural Economics
514 Agricultural Hall
Stillwater, OK 74078
405-744-9819
Kellie.raper@okstate.edu

J. Roy Black
Michigan State University
Department of Agricultural Economics
305 Agriculture Hall
East Lansing, MI 48824
517-353-9649
blackj@anr.msu.edu

and

James H. Hilker
Michigan State University
Department of Agricultural Economics
Agriculture Hall
East Lansing, MI 48824
517-355-7455
hilker@msu.edu

*Selected Paper prepared for presentation at the American Agricultural Economics
Association Annual Meeting, Orlando, FL, July 27-29, 2008.*

*Copyright 2008 by Kellie Curry Raper, J. Roy Black, and James H. Hilker. All rights reserved.
Readers may make verbatim copies of this document for non-commercial purposes by any
means, provided that this copyright notice appears on all such copies.*

Perceptions of Vertical Marketing Arrangement Performance: Cow-calf Producers versus Multiple Production Level Operators

Beef cattle production represents the largest single segment of American agriculture and includes more than 800,000 ranchers and cattle producers in the United States (National Cattlemen's Beef Association, USDA-NASS). In recent years, the U.S. beef industry has witnessed an increasing number of alliances and/or vertical marketing arrangements between supply chain levels as producers recognize advantages of formal linkages (Ward and Estrada, 1999). Many such relationships develop as a system to document and communicate credence attributes while others develop to meet specific measurable physical product targets. All have the underlying goal of increasing profitability for all or part of the beef supply chain by better meeting evolving consumer demands. As stated by Ball (2000), "cattlemen in concert can solve problems that an independent cattle producer, rugged and independent as he might be, could not handle alone."

A driving force behind vertical marketing arrangements in the beef industry is the inability of market price to signal the bundle of characteristics relevant to the value chain, resulting in the classic "lemons" problem described in the economics of information literature. The transactions cost framework has provided an approach to framing the evolution of alternative organizational structures in the livestock industry and querying members within structures.

According to Schroeder and Kovanda (2003), it is important to examine what aspects of alliances affect the likelihood of success or failure. Whipple and Frankel (2000) report that a key component of alliance success is participants' perceived benefits of the relationship. The U.S. beef supply chain is somewhat unique in that operators are often involved in multiple levels of production. That is, cow-calf operators may specialize in cow-calf production or they may also

be involved upstream in seed stock production or downstream in stocker/backgrounding operations or cattle feeding. These differences in beef operations may also lead to differences in expectations from vertical marketing arrangements (VMAs) as well as differing opinions as to the level of performance of such arrangements. Producers who specialize in cow-calf production may feel that their increased return for the value added production practices required for many VMAs is not proportionate with the increased returns captured further downstream that result from their work. Many production practices encouraged by vertical marketing arrangements have benefits beyond the immediate supply chain level. For example, feeder cattle that have been through backgrounding programs tend to be healthier and perform better in the feedlot, thus allowing cattle feeders and packers to benefit from production and management practices of upstream cow-calf producers (e.g. Wagoner, et al 2005).

This study seeks to understand whether beef operators who specialize in cow-calf production exhibit different motives for alliance participation and different levels of satisfaction with these vertical marketing arrangements than their counterparts in cow-calf production who also operate upstream or downstream beef enterprises. We hypothesize that beef production operators who specialize in cow-calf production may be less satisfied with such arrangements than their counterparts who are involved upstream or downstream.

Data and Methods

Participants in nine beef groups involved in various forms of formal vertical marketing arrangements were surveyed by mail. Similar to Mulrony and Chaddad (2005), we do not limit the definition of alliance or vertical marketing arrangements by ownership, control, or equity investments. The nine beef groups ranged in breadth from those with national memberships to those with more regional membership. Completed surveys were received from 159 respondents

from a total of 930 mailed surveys for an overall response rate of 17.1%. A breakdown of respondents with respect to supply chain level is as follows: 15.1% defined their role as seed-stock producer, 77.3% defined their role as cow-calf operator, 15.7% defined their role as stocker/backgrounder and 26.4% defined their role as feedlot operators/cattle finishers.

Several survey respondents participate in multiple production stages. Results presented here represent only those operators involved in either specialized cow-calf production or integrated cow-calf production. In this sample, 34 producers identify themselves as strictly cow-calf operators while 85 producers identify themselves as operators that integrate cow-calf production with one or more additional enterprises in the beef supply chain (e.g. seed-stock, stocker backgrounder, or feedlot). Respondents were asked (1) to rate their motives for joining an alliance or participating in a vertical marketing arrangement and (2) to rate how well the alliance or vertical organization met their expectations with respect to each of those motives. Ratings are based on a 1 to 7 Likert scale with 1 equating to the highest motivation or the best performance and 7 equating to the lowest motivation or worst performance. Survey responses are sorted into the two producer groups with summary results presented here.

Major Results and Implications

In general, respondents who are integrated cow-calf producers tend to market more cattle per year. Figure 1 illustrates the size distributions (as defined by calves marketed) for specialized and integrated cow-calf producers. Over half (62 percent) of specialized cow-calf producers included in the study market less than 50 head per year, while only 40 percent of their integrated counterparts market 50 or fewer cattle per year. That said, the majority of the cow-calf producers, both specialized and integrated, included in the study are defined as “small” by

industry standards. Producers marketing less than 100 head of cattle per year represent 84 percent of specialized cow-calf operators and 63 percent of integrated cow-calf operators.

Cow-calf operators' ratings of motivation for alliance participation, as well as ratings of alliance performance with respect to those motivations, are included in Tables 1 (specialized) and 2 (integrated). Not surprisingly, both specialized and integrated cow-calf operators ranked earning premiums as their highest motivation for becoming involved in vertical marketing arrangements. Specialized cow-calf operators involved in this study indicate that their top five motivations for involvement in vertical marketing arrangements are: earn premiums; quality improvement; source of consistent quality cattle; source of higher quality cattle; and good match with alliance partner's business/marketing skills. Interestingly, four of the top five motivations for integrated cow-calf operators are the same, with the exception of good match with alliance partner's business/marketing skills. Instead, access to carcass/performance information is included in the integrated operators' top five motivations. Note that, for both groups, quality issues rank high as motivation for involvement in vertical marketing arrangements.

Producer ratings of performance with respect to the highest ranking motivations are similar for both groups and, for all but "earning premiums", range from 48 percent to 54 percent of producers saying that the alliance performed "very well" (1) or "well" (2) in those areas. Though earning premiums is a primary motivation for participation in a vertical marketing arrangement, only 32 percent of specialized and integrated cow-calf producers perceive that the alliance is performing "very well" or "well" with respect to earning premiums.

There are several interesting contrasts between motivation ratings for specialized versus integrated cow-calf operators. Characteristics that reflect compatibility with the alliance were ranked more highly by specialized cow-calf operators than integrated. As noted by Marston,

participating in an alliance or VMA means that cow-calf operators must give up a degree of independence. The high rankings for alliance compatibility issues for specialized producers relative to integrated producers may well be a reflection of (1) the importance of making the right choice of for whom to give up “independence” and (2) the degree to which an “independence” mentality has already given way to one of “cooperation” for integrated producers already involved in other stages of production.

Both integrated and specialized cow-calf producers rated the desire to access carcass information highly (70 percent and 59 percent, respectively, as “very important” or “high importance”), but specialized operators are much less satisfied with alliance performance regarding both access and help interpreting the carcass information they receive. Only 15 percent of specialized producers perceive that their alliance performs “very well” or “well” on providing access to carcass information. Specialized producers also perceive that they do not get adequate help in interpreting carcass data, with only 20 percent rating alliance performance as 1 or 2. In contrast, 52 percent of integrated operators say that their alliance performs “very well” or “well” in access to carcass information and 44 percent give that rating to help with interpreting carcass data. It may be that integrated operators who are involved in downstream supply chain activities have previous experience with carcass information and interpretation and, thus, are less reliant on the alliance to provide information and education in that respect. However, these ratings suggest that many producers are not satisfied overall with alliance performance regarding carcass data and the nuances of using that data.

Pooling calves for truckload lots is relatively more important for specialized cow-calf operators (55 percent) in the study than for integrated operators (33 percent). The result is similar with respect to pooling calves for consistent lots. This likely stems from the relative size

disadvantage of specialized cow-calf producers and the desire to capture additional premiums offered by cattle buyers for larger lots of cattle with greater consistency in the lot.

Conclusions

The greatest challenge to successful beef systems is organizing the beef supply chain in a way that adds value to the final product and mutually satisfies the objectives of the diverse participants in the system. This study provides insight into whether specialized cow-calf operators have different perceptions of alliance performance than their more integrated counterparts. Where perceptions of alliance performance differ between the two producer groups, there may be multiple explanations. Certainly one explanation could be that such disparities stem from unrealistic profit expectations and profit-sharing expectations on the part of some participants. Alternatively, disparities could arise because cow-calf operators who are integrated upstream or downstream are in a better position to capture a larger share of the economic benefits of practices required by vertical marketing arrangements. While this study does not measure the fit of the producer's cattle with the alliance, it may be that disappointment with alliance premium stems, in part, from a failure to fit cattle to the alliance or to find an alliance that fits a producer's current herd.

References

- Ball, C. E. "Historical overview of beef production and beef organizations in the United States." *J Anim Sci* 2000. 79:1-8.
- Marston, Twig. "Beef Alliances Overview." Wheatland Stocker Conference Proceedings. Available online at <http://countyext.okstate.edu/enidarea/Beef%20Alliance%20Overview.doc>
- Mulrony, Brandi R. and F. R. Chaddad. "Strategic Alliances in the U.S. Beef Supply Chain." *Journal of Food Distribution Research* 36(3, November 2005):18-32.
- Purcell, W. D. and W. T. Hudson. 2003. "Risk Sharing and Compensation Guides for Managers and Members of Vertical Beef Alliances." *Review of Agricultural Economics* 25(1):44–65.
- Schroeder, T.C. and J. Kovanda. "Beef Alliances: Motivations, Extent, and Future Prospects." *The Veterinary Clinics of North America Food Animal Practice* 19(2003):397-417.
- Waggoner, J. W., C. P. Mathis, C. A. Loest, J. E. Sawyer, F. T. McCollum, III. 2005. Impact of preconditioning duration on feedlot performance, carcass characteristics and profitability on New Mexico Ranch to Rail steers. In: Proc., Western Section American Soc. of Anim. Sci. 56:186-188.
- Ward, Clement E. and T. L. Estrada. "Vertical Coordination and Beef Industry Alliances." *Visions*. 72(1999):2, pg. 16-21.
- Whipple, J.M. and R. Frankel. "Strategic Alliance Success Factors." *Journal of Supply Chain Management* 36(Summer 2000):21-30.

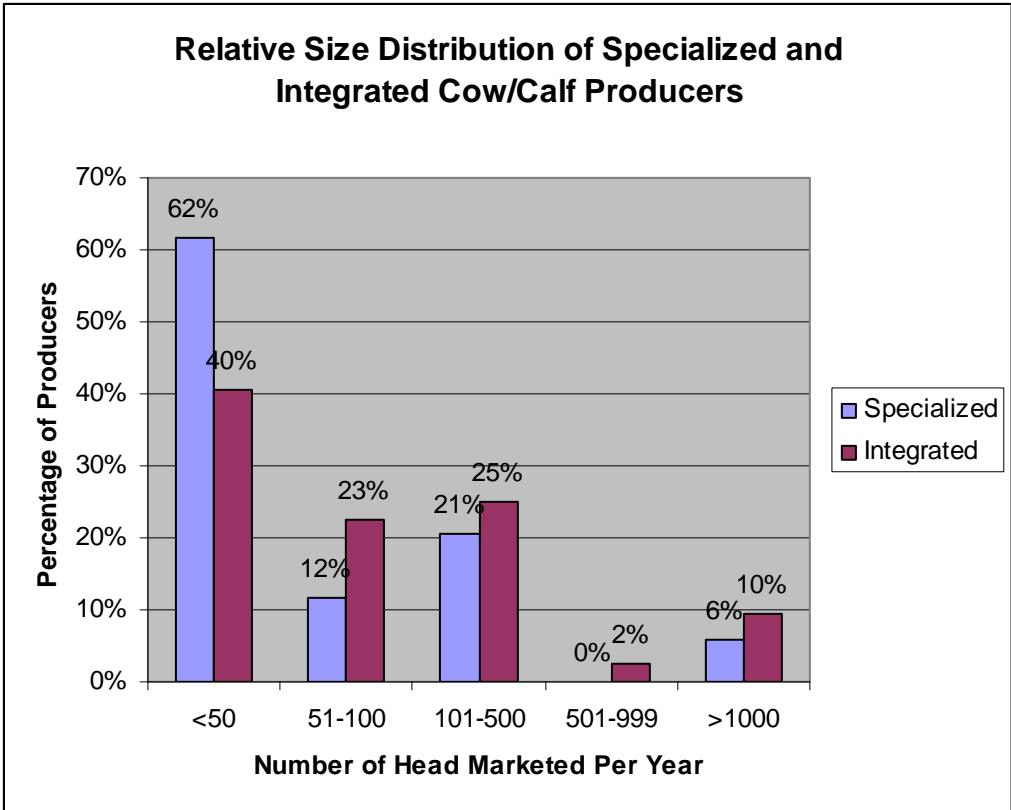
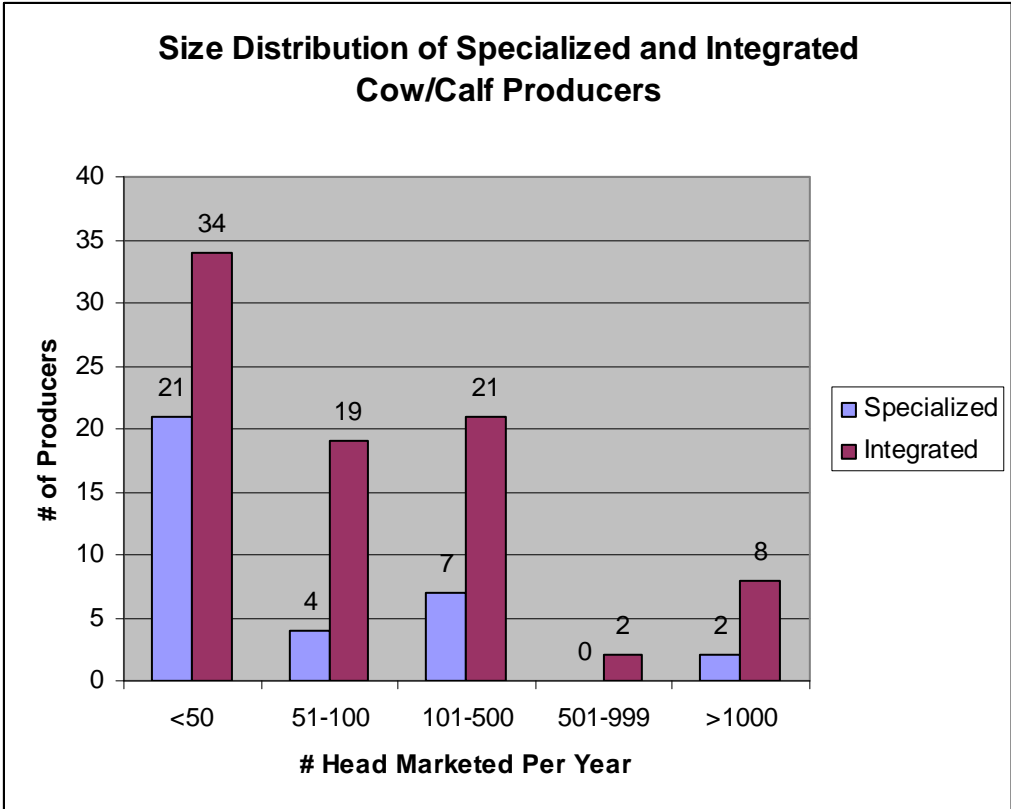


Figure 1. Size Distribution of Specialized and Integrated Cow-calf Producers.

Table 1. Specialized Cow-calf Operators' Rankings of Motivation for Alliance Participation and Alliance Performance Regarding Motivations^a

Motivation	Motivation Ranking	Percent Rating Motivation 1 or 2 ^b	Performance Ranking	Percent Rating Performance 1 or 2 ^c
Earn Premiums	1 (tie)	78%	15	32%
Quality Improvement	1 (tie)	78%	4	54%
Source of consistent quality cattle	3 (tie)	74%	6	50%
Source of higher quality cattle	3 (tie)	74%	6	50%
Good match with Alliance Partner's business/marketing skills	5	67%	2	55%
Good match with Alliance Partner's specifications	6	65%	10	48%
Good match with Alliance Partner's business culture	6	65%	2	55%
Common desire to provide beef with the product attributes that the Alliance values	8	63%	9	48%
Source Verification	9	59%	1	72%
Access to carcass/performance information	10	59%	21	15%
Reduce uncertainty/risk of marketing cattle	11	57%	18	29%
Pooling calves for truckload lots	12	55%	6	50%
Pooling calves for consistent lots	13	53%	5	54%
Access to expertise that helps me in my management	14	52%	11	39%
Reduce feed costs through increased daily gain	15	50%	13	35%
Good match of pricing grid with your cattle	16	48%	17	32%
Help with interpreting carcass/performance information	17	43%	20	20%
Reduce Duplicate animal health costs	18	37%	12	38%
Reduce commission costs	19	35%	16	32%
Access to specialty/niche markets for beef	20	32%	19	26%
Reduce maturity/harvest age of cattle	21	26%	14	33%

^aRatings and Percentages are based on respondents who considered the motivation as applicable at their stage in the beef supply chain.

^bPercentage reflects the number of respondents who responded 1 or 2 to the statement "Please rate your motivation for entering the alliance for the other characteristics listed below" where 1 is Very Important and 7 is Not Important.

^cPercentage reflects the number of respondents who responded 1 or 2 to the statement "Please rate how well the alliance has met your expectations in the following areas" where 1 is "Very well" and 7 is "Very poorly".

Table 2. Integrated Cow-calf Operators' Rankings of Motivation for Alliance Participation and Alliance Performance Regarding Motivations^a

Motivation	Motivation Ranking	Percent Rating Motivation 1 or 2 ^b	Performance Ranking	Percent Rating Performance 1 or 2 ^c
Earn Premiums	1	86%	12	32%
Source of consistent quality cattle	2	75%	3	49%
Quality Improvement	3	73%	6	42%
Access to carcass/performance information	4	70%	1	52%
Source of higher quality cattle	5	68%	4	45%
Good match of pricing grid with your cattle	6	60%	8	41%
Reduce feed costs through increased daily gain	7	55%	16	29%
Common desire to provide beef with the product attributes that the Alliance values	8	53%	7	41%
Source Verification	9	52%	2	49%
Good match with Alliance Partner's specifications	10	51%	9	37%
Help with interpreting carcass/performance information	11	50%	5	44%
Reduce uncertainty/risk of marketing cattle	12	49%	15	30%
Good match with Alliance Partner's business culture	13	47%	10	35%
Good match with Alliance Partner's business/marketing skills	14	46%	11	34%
Access to specialty/niche markets for beef	15	46%	19	25%
Access to expertise that helps me in my management	16	45%	19	25%
Reduce Duplicate animal health costs	17	40%	14	31%
Reduce maturity/harvest age of cattle	18	34%	13	32%
Reduce commission costs	19	34%	19	25%
Pooling calves for consistent lots	20	33%	18	27%
Pooling calves for truckload lots	21	33%	17	27%

^aRatings and Percentages are based on respondents who considered the motivation as applicable at their stage in the beef supply chain.

^bPercentage reflects the number of respondents who responded 1 or 2 to the statement "Please rate your motivation for entering the alliance for the other characteristics listed below" where 1 is Very Important and 7 is Not Important.

^cPercentage reflects the number of respondents who responded 1 or 2 to the statement "Please rate how well the alliance has met your expectations in the following areas" where 1 is "Very well" and 7 is "Very poorly".