

**WHAT IS THE VALUE OF A HEALTH
VERIFIED PROGRAM**

by

KASH TUCKER SCHUMACHER

B.S., Texas A&M University, 2000

A THESIS

Submitted in partial fulfillment of the requirements

for the degree

MASTER OF AGRIBUSINESS

Department of Agricultural Economics

College of Agriculture

KANSAS STATE UNIVERSITY

Manhattan, Kansas

2011

Approved by:

Major Professor
Dr. Ted Schroeder

ABSTRACT

The beef cattle industry is one of the last industries in production agriculture that is not heavily integrated. Therefore each segment of the industry is constantly looking for opportunities to increase the value of their cattle. In recent years, one of those opportunities available to cow-calf producers was verification of certain production practices (i.e. Age and Source, Natural, and Non-Hormone Treated). The value flows from the consumer to the cow-calf producer. The packers need these verified cattle to fill export contracts therefore they are willing to pay a premium for these types of cattle.

The objective of the thesis was to determine the value of a Health Verified Program (HPV) to feedlot operators. HPV is not required to export beef like other verified programs, but it does verify the procedures that a group of calves has received from the previous owner.

Since the feedlot is a deciding factor of value for HPV, feedlot managers were asked from across the United States not only what value they place on HPV but other questions that could be beneficial to others involved in the beef cattle industry. Regression models were used along with a correlation analysis to determine value.

There is value to a health verified program along with other procedures that are available to cow-calf producers. Individual producers need to determine which verifications and procedures are economical and efficient for their individual operations with all factors considered.

TABLE OF CONTENTS

List of Figures	iv
List of Tables	v
Acknowledgments	vi
Chapter I: Introduction	1
1.1 Objectives	1
Chapter II: Literature Review	3
2.1 Preconditioning.....	3
2.2 Verification	5
Chapter III: Theory	8
Chapter IV: Methods	11
4.1 Method	11
4.2 Data Collection	12
Chapter V: Results	14
5.1 Introduction	14
5.2 Demographics.....	14
5.3 Marketing Results.....	19
5.4 Value Results	22
5.5 Regression Results	36
Chapter VI: Conclusion	46
References	47
Appendix A	48

LIST OF FIGURES

Figure 5.1: Average Age of Principal Operator Age.....	15
Figure 5.2: Breakdown of premium results for what would they pay (WTP) for calves weaned 45 Days	27
Figure 5.3: Breakdown of premium results for (WTP) for calves for calves Adjusted to Bunk	28
Figure 5.4: Breakdown of premium results for (WTP) for calves that are vaccinated	29
Figure 5.5: Breakdown of premium results for (WTP) for calves that are treated for parasites	30
Figure 5.6: Breakdown of premium results for (WTP) for calves on a health verified program.....	31
Figure 5.7: Breakdown of premium results for (WTP) for calves that have been implanted	32
Figure 5.8: Breakdown of premium results for (WTP) for calves that are age and source verified	33
Figure 5.9: Breakdown of premium results for (WTP) for calves that are natural.....	34
Figure 5.10: Breakdown of premium results for (WTP) for calves that are nhtc	35

LIST OF TABLES

Table 5.1: Cattle on Feed by State..... 16

Table 5.2: Cattle on Feed by size of operation 17

Table 5.3: Demographic results of the Feedlot Cattle Procurement Preference Survey..... 18

Table 5.4: Feedlot marketing results of the Feedlot Cattle Procurement Preference Survey..... 21

Table 5.5: Values Results of the Feedlot Procurement Preference Survey 25

Table 5.6: Value (\$/Head) for a 600 lb calf with individual traits for the Feedlot Procurement Preference Survey 26

Table 5.7: Regression Statistics for Preconditioned and Adjusted Bunk..... 39

Table 5.8: Regression Statistics for Vaccinated and Treated for Parasites 40

Table 5.9: Regression Statistics for Health Verified and Implants 41

Table 5.10: Regression Statistics for Age and Source Verified and Natural 42

Table 5.11: Regression Statistics for Non-Hormone Treated 43

Table 5.12: Correlation Matrix..... 44

ACKNOWLEDGMENTS

I would like to thank Dr. Schroeder for his continued guidance and support throughout my thesis and my committee for their time and direction. Also thanks to Lynnette Brummett, and Mary Bowen for their help, and to everyone else that is involved in the MAB program.

To my parents and all of my family for making me believe that anything is possible with a little hard work and determination; thank you. I would also like to give a special thanks to my biggest supporter and best friend for all of her support and words of encouragement not only for the last three years, but our entire marriage.

CHAPTER I: INTRODUCTION

A question that is continually discussed by everyone in the cattle industry is the value of a preconditioned calf. There have been numerous studies showing the premium that buyers pay for preconditioned cattle ranges from \$2.00/cwt. to \$6.00/cwt. The majority of cattle that are sold as preconditioned are done so based on the word of the producer. The issue is the definition of preconditioned. The definition changes across different regions of the United States. Preconditioning, by definition, is a vaccination, nutrition, and management program designed to prepare young cattle to withstand the stress associated with weaning and shipment to a backgrounding yard or feedlot. So what exactly does that mean; do the calves need to be castrated, dehorned, broke to a bunk or water tank, or backgrounded for 30, 45, or 60 days?

Whatever desirable information a cow-calf producer can supply about his calves on preconditioning makes them potentially more valuable. One way to provide this information is through a Health Verified Program (HPV). An HPV is a value-added program which functions similar to Age and Source Verification where a third-party performs an audit on the operation and verifies their procedures.

1.1 Objectives

The objective of this thesis is to determine the value of a United States Department of Agriculture (USDA) Health Program Verification (HPV). There are numerous health programs in the cattle industry. The objective for this thesis is to see if feedlot managers place any more value in a third-party verified program than they do if the producer claims it. The value of HPV will be determined by the buyers, and more directly feedlots. Since

feedlots are the buyers of feeder cattle, they determine the premium or discount a producer receives when selling their calves. HPV would provide the feedlots more confidence when buying cattle that are preconditioned. The information would be provided on a certificate that list all of the procedures that have been performed on the calves and the dates of occurrence.

It will be interesting to see if feedlots are willing to pay the verification and if feedlots believe that an HPV calf will have a lower cost of gain. If so, that would be a justification for them to pay a premium to the cow-calf producer for HPV calves. If feedlots feel they are not gaining anything by having calves third-party verified then there will not be value in a Health Verified Program.

The research, will determine how feedlot managers determine value, not only on HPV but other characteristics as well. The results will benefit cow-calf producers and backgrounders by giving them more information on what feedlots are willing to pay for individual procedures. By understanding this information, producers will be able to make a more educated decision on how they manage their calves.

CHAPTER II: LITERATURE REVIEW

Preconditioning is the practice of preparing calves to enter a grazing program, backgrounding yard, or feedlot for finish. Part of a basic preconditioning program includes a health protocol that consists of various vaccination and other management practices. Preconditioning has been around for many years, but it has been a slow adoption process. One of the more recent marketing options for cattle producers is third-party verification (i.e., age and source, and non-hormone treated cattle (NHTC)). Third-party verification is the process of getting an independent party to certify that a producer is actually performing the processes and procedures that they claim. This chapter discusses previous research that has been done to evaluate the value of both preconditioning and third-party verification.

2.1 Preconditioning

Carter, Loest, and Mathis looked at the different approaches to preconditioning. The Value Added Calf (VAC) was created partly on the observations of calf performance in the Texas Ranch to Rail program. There are numerous types of VAC programs, but the VAC 45 program is preferred, because calves are weaned a minimum of 45 days before shipping. With preconditioning, there are a couple of different options for producers, one is pasture based and the other is dry lot growing. There is a tradeoff for each, but research has shown that pasture-based preconditioning better prepares calves to face morbidity challenges in the feedlot. Once in the feedlot, there is no clear advantage on performance for calves that have been preconditioned, but all agree that it does have an effect on morbidity and mortality.

Dhuyvetter evaluated the justification of preconditioning from both the cow-calf and the feedlot operators. He discovered using data from a Kansas livestock auction that a cow-

calf producer could expect to receive a premium of \$4.50 - \$5.50/cwt. for preconditioned calves sold in the fall and \$2.20 - \$3.20/cwt. for calves sold in the winter. Dhuyvetter also determined that it would cost in the range of \$0.90 to \$1.35 per-head per-day for a producer to precondition; taking into account the type of operation and manager the producer is. Considering all of the previous information, a calf on a 45-day preconditioning program would have a return of \$14/head compared to selling the calf off the cow. Dhuyvetter discussed how feedlots paying premiums for preconditioned calves are justified, and went on to suggest that they might even pay slightly higher prices for these calves. The reason that most feedlots have not paid the “the full value” of preconditioning is because of the risk that is involved. He expects that feedlots will pay the full value once the reputation and integrity of these programs increases.

Avent, Lalman, and Ward discussed the value of preconditioned feeder calves. They only looked at the traits that are affected by preconditioning such as weight, condition, horns, sex, and health, but not breed, frame size, and muscle thickness. Producers can expect premiums for polled, healthy, steer calves sold in pot load uniform groups. Avent, Lalman and Ward analyzed two sets of data over a four-year period from the Joplin Regional Stockyards and found that the calves with a single strict protocol received a higher premium than non-preconditioned calves. The group also found that Texas Cattle Feeders Association (TCFA) feedyard managers estimated that preconditioned calves were worth \$5.25/cwt. more than non-preconditioned calves which is higher than previous studies found. They felt that cattle feeders might pay a higher premium if there was a higher assurance that cow-calf producers followed a preconditioning protocol.

King and Seeger performed a ten-year study at Superior Livestock on the trend of value-added health programs from 1995 to 2004. Their research revealed that there had been a significant increase in both the number of cattle on VAC 34 and VAC 45 programs. The data also showed that premiums for VAC 34 had increased from \$1.35 to \$3.47/cwt, and VAC 45 increased from \$2.47 to \$7.91/cwt over the ten-year span. The trend indicates that the more preparation that is done, the greater the premiums a producer will expect to receive.

2.2 Verification

Lawrence and Yeboah performed a study at an auction barn in Bloomfield, Iowa to determine if there was a premium for source-verified (SV) feeder cattle. The research was conducted over a four-year period from 1997 – 2000 for feeder cattle auctions held from October to December each year. All of the SV cattle were part of the Iowa-Missouri Beef Improvement Organization (IMBIO). The program was developed to add value to calves in the Bloomfield area. Those in the program were required to have cattle on a defined health program; they also had a bull standard, and procedures for marketing and management. Vaccinations had to be given by a veterinarian and all cattle were tagged with an IMBIO tag. Calves in the program were sorted into larger groups throughout the day during the regular sale, and then sold in the evenings. Lawrence and Yeboah's results were mixed as to whether the IMBIO SV cattle received a premium over the regular sale calves. The premium on lightweight calves was statistically significant; those in the program received an average premium of \$1.30/ cwt. over those that were not. There was a discount on the SV heavyweight calves, but it was not significant. After everything was

considered, those in the program did receive a premium over the regular calves, but it was hard to determine if the results were due to the program or just larger lot sizes.

Bulut and Lawrence collected data from 105 sales in nine different auction barns across Iowa. The sales took place between October 20, 2005, and February 24, 2006. They included both preconditioned and regular sales, with a total of 20,051 lots sold. The preconditioned sales were restricted to cattle that were weaned and vaccinated according to a certain protocol. Even though they measured the effects of many different variables, the main objective was to determine the value of calves with third-party certification (TPC) over calves without. The majority of the cattle that were considered certified were either on the Iowa green tag or gold tag program, and a few were under a similar private company program (i.e., Surehealth). The minimum weaning requirement for the green tag program is 30 days and the minimum for both gold tag and Surehealth is 45 days, and all require a complete vaccination protocol. Bulut and Lawrence determined that calves with TPC, and a minimum of 30 days weaning had a premium of \$6.15/cwt, and those with the same amount of weaning days, but without TPC were \$3.40/cwt over the base calf that did not have either. They also came to the conclusion that the \$2.75/cwt increase in premium would more than cover the cost of participation in a third-party certification program.

The past research has shown that preconditioning and verification both add value to a set of calves. The majority of cattle that are sold as preconditioned are done so on the word of the seller; or in more stringent programs they are certified by the producer's veterinarian or animal health provider. Verification programs such as age and source and NHTC are much more regulated while there are third party companies that do verify these programs, they do

so under the watchful eye of the USDA. This research hopes to determine if feedlots see the value in having calves third party verified for preconditioning or if they are satisfied with the current procedures, and see no added value to third-party verification.

CHAPTER III: THEORY

As production costs continue to increase, progressively more discounts occur for calves not meeting buyer preferences. Thus cow-calf producers must look closer for opportunities to turn a profit. One of the ways to gain a competitive advantage is preconditioning.

Preconditioning calves is not a new concept as it has been around since the mid-1960s.

Because there has been conflicting research on the amount of premium a producer (cow-calf or backgrounder) is likely to receive for preconditioned calves, it has been hindered from becoming a more standard practice (Dhuyvetter). A majority of the conflicting research was done years ago with more recent studies indicating that a preconditioned calf will average around \$5.00/cwt. over a non-preconditioned calf. The biggest issue with preconditioning is that in most cases, the only way a buyer knows if calves have been preconditioned is the word of the seller. Many feedlot managers can tell a story about a bad experience with preconditioned calves (i.e., health problems) in the past, and this has hurt the reputation of all cattle that have been labeled as preconditioned.

Verification programs are a more recent marketing option that producers have been taking advantage of to increase the value of their calves. The majority of verified calves are in an Age and Source (ASV) or Non-Hormone Treated (NHTC) program which both qualify calves for different export markets. Verification programs differ from just preconditioning in that the verification is done by a third party. There are health programs (e.g., Surehealth, and SelectVac) that are certified, but are not USDA approved.

Cattle in either a preconditioning or verification program may receive a sale price premium because the buyer has additional information on that set of calves. Information has always

been a valuable commodity, and the advancement of technology in recent years has made it much more accessible. Technology has made it both cost efficient, and simple to send information up and down the supply chain. The majority of preconditioned cattle are done so through the word of the seller, and due to trust issues, some buyers are not willing to pay extra for calves presented as preconditioned. The lack of trust that some feedlots have in preconditioned calves makes one ask, what is the value of health verification (HPV)? Will a feedlot be willing to pay a premium for cattle with HPV or is such a claim no more valuable than seller verified preconditioning?

The hypothesis put forth in this study is that a feedlot will have more confidence in an HPV program, and thus be willing to pay for that increased confidence. However, how much more is an empirical question? There is a cost involved in third party verification; so if the feedlot is not willing to pay more for the HPV, it may not be cost effective for the producer. The value to the producer may be that it gives them that competitive advantage over others without it; therefore making their cattle a more desirable commodity. The cow-calf producer may not see a premium, but it may help to sell their calves.

Cattle feeders decide what animals to purchase and depending upon associated animal attributes the operator will be willing to pay a different price for pens of calves with differing traits. Since preconditioned calves, all else constant, offer the cattle feeder a greater chance for enhanced profit relative to calves that are not preconditioned, such calves will have greater value to the feeder. Having greater confidence in the preconditioning claim and the specific protocol used to precondition calves, increases the probability that the calves will perform in the feedlot as predicted. The increased assurance

in the preconditioning program claims increases the feedlot's profit over time for preconditioned calves, all else equal. Thus, the increased assurance will result in higher willingness of the feedlot to pay for preconditioned calves.

CHAPTER IV: METHODS

4.1 Method

To determine the value of HPV, a survey was sent to 591 feedlot managers across the United States compiled from Beef Spotter. The size of the feedlots ranged from 100 to 150,000 head. The information that was collected was based on cattle that were either finished or bought in 2010. There were 3 different survey versions - the master is provided in Appendix A. The only change from version to version was the choice experiments; each survey had 6 choice experiments. A hard copy was randomly sent to each of the 591 feedlots. They were asked to either go to Qualtrics.com to complete the survey, or they could also mail back a completed hard copy.

Feedlot managers were surveyed because they determine what most cow-calf producers and backgrounders/stockers do in their operations. If feedlots are willing to pay more for a certain type of calf, then the industry usually moves in that direction. The interest in collecting the data was to see if the perception of value not only fluctuated by the personal traits of the manager (experience, age, and education), but also the characteristics of the feedlot. The information that was asked about the feedlot included size, location, and how they buy and market cattle. The one thing that was asked that was essential to my research was the value respondents put on traits when buying cattle. Lastly, each survey had six choice experiments where those surveyed had a choice of which type of calf they would buy. This information will have more relevance in future research that is being done.

The reason for looking at the size of the feedlot was to see if larger feedlots buy more preconditioned cattle. The value of health should also depend on location. In the areas that have larger temperature swings, health becomes more of an issue. The reason that feedlots

were asked how they buy cattle was that it gave an idea of what type of cattle they buy. Cattle that are bought on video or home-raised usually come from one ranch. Therefore, they usually are on some type of health management program. The video companies stress health and value added programs (VAC-45, ASV, Natural, etc.) to their customers, because research has shown that cattle on these types of program bring more money (King and Seeger 2005). The majority of cattle bought through a sale barn are put together by cattle buyers, so the management of these cattle is not known. By finding out how a feedlot markets cattle (live weight, dressed weight or grid) provides a better understanding of their management practices, and how they determined value.

Every feedlot is different; each one has what works best for them physically and financially. Some feedlots are better at straightening up calves and can afford to buy non-preconditioned cattle that are generally cheaper (Dhuyvetter 2004). Other feedlots are better off buying preconditioned cattle that are less risky. Most feedlot managers would agree that if all calves were priced equally, they would buy preconditioned number 1's, but all calves are not priced equally. Even though each feedlot is managed differently, feedlot managers still have opinions based on their experience of what the value is for a particular calf depending on its history.

4.2 Data Collection

The data collected from the survey were analyzed using both histograms and regression analysis. With such an extensive survey, the decision was to use histograms to compile data such as personal information on the respondents, feedlot demographics and marketing preferences. These provided a snapshot of the information that was collected, and it showed not only who responded, but also illustrated variation in size, location, and buying

decisions of the feedlots that responded to the survey. Regression analysis was used to calculate the correlation between the dependent values (preconditioning/verification) and the independent variables (owner's age, education, feedlot location, feedlot size, sources of cattle, and if cattle are verified). This analysis determined how value was affected, and by which variable. Those variables with a p-value less than 0.05 were considered significant and those greater than 0.05 were not considered significant.

CHAPTER V: RESULTS

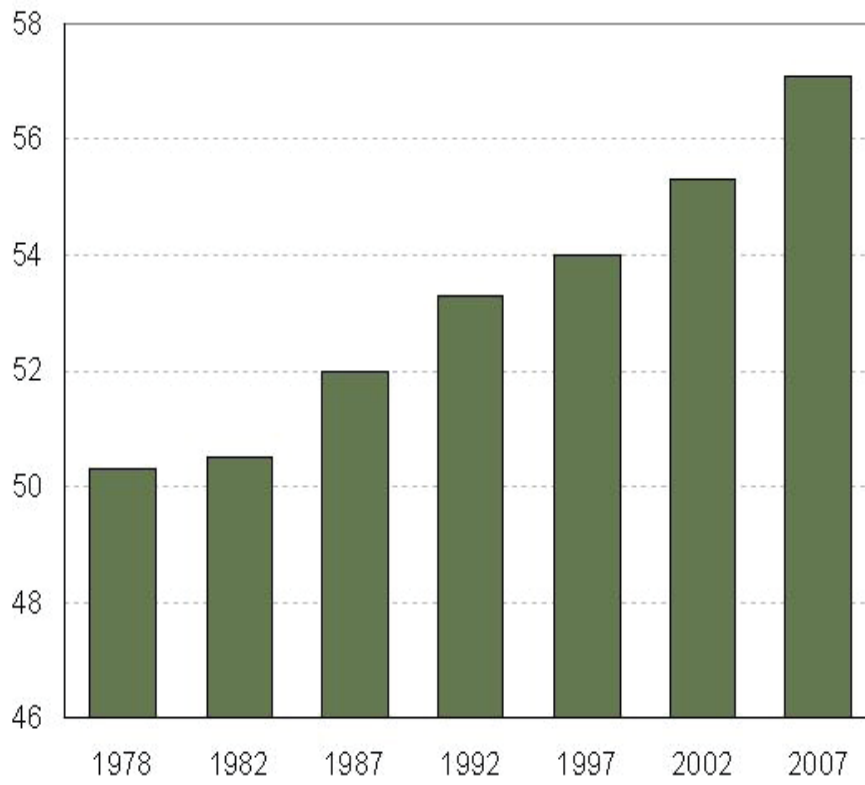
5.1 Introduction

The response rate on the survey was 28.9%. There were 591 surveys mailed out and 171 total responses received. Managers had the option to fill out a survey online at Qualtrics.com or fill out a hard copy. Of those responses, 23 were online through Qualtrics and 148 were hard copies. Only 159 of the responses were usable because four surveys had no state identified, five were without year of birth of the manager, and three did not complete all of the questions. The large response rate helped to determine if there was not only a value to HPV, but will also offer those in the industry a better understanding of how feedlots evaluate value when buying cattle.

5.2 Demographics

The demographics portion of the survey is summarized in Table 5.3. It identifies personal and physical characteristics of the respondents, and their feedlots. Participants were from 18 different states with most located in Texas, Kansas, or Nebraska (consistent with where most cattle are fed in the United States). Managers had an average age of 56, which is about the same average age as USDA data suggests of principal operators (Figure 5.1). Owners made up 51% of the responses with managers being the remaining 49% and over 75% owned or managed a feedlot with greater than 10,000 head marketed in 2010. The majority of the respondents (70%) had over 30 years of feedlot experience, and 60% of them held a bachelor's degree. The data that were collected in the survey is consistent with the information collected by the USDA (Figure 5.1, Table 5.1 and 5.2).

Figure 5.1: Average Age of Principal Operator Age



Source: National Agriculture Statistic Service (NASS)

Table 5.1: Cattle on Feed by State

State	1,000 Head as of March 1, 2011
Texas	2,840
Nebraska	2,430
Kansas	2,220
Colorado	1,070
Iowa	650
California	460
Oklahoma	360
Arizona	269
South Dakota	265
Idaho	220
Washington	208
Other States	407
United States Total	11,399

Source: National Agriculture Statistic Service (NASS)

Table 5.2: Cattle on Feed by size of operation

CATTLE, ON FEED - NUMBER OF OPERATIONS	2010
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 1 TO 999 HEAD CAPACITY	75,000
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 1,000 HEAD OR MORE CAPACITY	2,140
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 2,000 TO 3,999 HEAD CAPACITY	560
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 4,000 TO 7,999 HEAD CAPACITY	335
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 8,000 TO 15,999 HEAD CAPACITY	180
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 16,000 TO 23,999 HEAD CAPACITY	85
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 24,000 TO 31,999 HEAD CAPACITY	55
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 32,000 TO 49,999 HEAD CAPACITY	71
CATTLE, ON FEED - NUMBER OF OPERATIONS - WITH 50,000 HEAD OR MORE CAPACITY	64

Source: National Agriculture Statistic Service (NASS)

Table 5.3: Demographic results of the Feedlot Cattle Procurement Preference Survey

	Mean	Standard Deviation
What year was the main manager/operator of this feeding operation born?	1955 (56 years old)	13.1
Your position with the cattle feeding operation is?		
Owner-Operator		52.5%
Management but not owner		47.5%
How many years has the main manager/operator been feeding cattle?		
Less than 5		.4%
5-9		1.6%
10-19		10.2%
20-29		18.4%
30-39		34.1%
40 or more		35.4%
The best description of the main manager/operator educational background is?		
Did not attend college		6.1%
Technical training or attended college, no bachelor's degree		18.3%
Bachelors		59.7%
Graduate or Professional Degree		15.9%
Your cattle feeding operation is located in which state?		
Nebraska		25.8%
Kansas		20.9%
Texas		18.4%
Colorado		6.8%
Iowa		5.5%
*Other		22.7%
How many fed cattle did your operation market in 2010?		
< 100 – 999		1.8%
1,000 – 9,999		22.5%
10,000 – 29,999		26.8%
30,000 – 49,999		17.1%
> 50,000		31.7%

* States not listed AZ, CA, ID, IL, IN, MN, MT, NV, OK, OR, SD, UT, WY

5.3 Marketing Results

The marketing results showed that 29.3% still custom feed cattle which was higher than expected (Table 5.4). Custom feeding is not as common a practice as it used to be. Since feedlots are not buying the cattle when they custom feed, associating feeder calf price with health programs prior to entering the yard is not an issue. This issue falls more on the owner of the calves. A total of 29.6% of the calves were purchased from local auction barns. Cattle that are sold through auction barns are usually commingled with other groups to make a truck load lot, which puts calves at a higher health risk, and they normally are not preconditioned. One of the advantages of buying cattle this way is that they are less expensive, but health can be an issue. These cattle are bought more with price in mind rather than health. With 23.7% of cattle bought directly from the seller, this is the opposite of local auction barns. Cattle purchased this way normally come from one location, and the majority are on a managed health program. When feedlots buy these types of cattle they are expecting a higher quality calf with a verifiable history either from the producer or a third-party.

The remaining calves were purchased either through video auction (increasing every year), feeding their own home-raised cattle, or buying through an order buyer (Table 5.4). The first two types of calves are expected to be similar to buying direct in that the calves will be healthier. The latter would be just like buying from an auction barn which is where the majority of cattle bought by order buyers come from. Not all cattle bought through auction barn or from an order buyer are of lesser quality, and/or have poor health. It is just one factor that helped analyze if a verified health program had a value to feedlots when they buy cattle.

It is easy to see that conventionally fed cattle are still the norm (78.6%), but the amount of verified cattle continues to grow (Table 5.4). Verified programs are just getting started; age and source verification has been around less than 10 years, and it was not widely used until packers started paying a premium which added value to the program. It shows that feedlots are willing to purchase verified cattle if they can see a return on their investment. As the export markets continue to grow; verification may increase in value. Therefore, there will be a larger demand in the future.

The method by which cattle are sold does not have a large impact on the research, but it does give cow-calf producers and others in the industry an idea of how feedlots market finished cattle. Therefore producers can make a more informed decision on the types of calves they raise and sell. Live weight is still the most popular way to sell cattle (43.3%), but selling on the grid (30.5%) has been a growing trend (Table 5.4). At the end of the day, being able to negotiate with your buyer is still an important trait in the feedlot business.

One of the more important questions in the survey was to determine if feedlots were buying third-party verified (Select Vac, Sure Health, etc.) cattle (Table 5.4). With 22.9% responding that they buy these cattle, this indicates that there may be value to a health verified program. It indicates that when buying cattle, feedlots recognize that these programs may have merit, and that they do place a value on them.

Table 5.4: Feedlot marketing results of the Feedlot Cattle Procurement Preference Survey

In 2010 approximately what percentage of cattle finished in your feedlot did you buy as feeders from each of the following sources?	
Custom Feed	29.3%
Purchased at local auctions	29.6%
Purchased on video auctions	9.8%
Purchased direct from seller	23.7%
Home-raised from your own herd	2.8%
*Other	4.8%
In 2010 approximately what percentage of cattle you finished in your feedlot operation did you market when finished as?	
Conventional fed cattle	78.6%
Age and source verified	16.2%
**Other	4.1%
In 2010 what percentages of your finished cattle did you market in each of the following ways (total should add to 100%)?	
Live weight, negotiated price	43.3%
Live-weight, formula price	1.3%
Dressed weight, negotiated price	16.4%
Dressed weight, formula price	8.6%
Grid (dressed and grade and yield)	30.5%
What is your best guess of the percentage of feeders you purchased in 2010 that were sold to you with an identified health program (e.g., Sure Health, Select Vac, etc.)?	
Feeders purchased with an identified health program	22.9%

* Order Buyers and Out of State Auctions

** Non-Hormone Treated (NHTC), Natural, and Organic

5.4 Value Results

Analyzing the value portion of the survey was the remaining factor and the most important data in the research. In this section, feedlots responded if they believed that cattle on a health program would perform better in the feedlot compared to those that were not on an identified program (Table 5.5). The last portion of the value segment asked to put a value on different attributes cattle may have (Table 5.6).

The first two questions asked those surveyed if they expected cattle on a health program to have lower morbidity and less death loss. The response was overwhelming with over 75% either stating it was likely or very likely (Table 5.5). The more interesting portion of the survey asked if those cattle on the same health program would perform better in the feedlot with a better feed efficiency and a higher daily gain. Both questions were answered either likely or very likely over 78% of the time. In cattle pricing and valuation questions (better dressing, yield grade, and quality grade), all but the question on purchasing cattle were answered with a neutral stance indicating that feedlot respondents did not know if the cattle would grade better or sell at a higher price. When buying cattle, over 80% of those that responded believed the cattle would cost more if they were raised under a health preconditioning program. This shows that feedlots are aware that cattle on health programs are going to sell at a higher price. In turn, this could justify the extra cost of placing cattle on a health program at the cow-calf level.

Table 5.6 contains the results of what value feedlots placed on different attributes when buying calves. This table is not only important to this research; it is also a good source of information to producers for the management of their own calves. The first four attributes listed (Weaned 45 days, Adjusted to bunk, Vaccinated, and Treated for Parasites) are all

typical of any precondition program that a producer might have. It predicts, like earlier research, that preconditioning adds value to the calves at sale time. Some of the high premiums paid are above what might be expected, but the average premiums paid indicates potential return to those that can precondition their calves. Since the surveys are hypothetical, in the sense that respondents did not actually have to pay and only reflected what they said they would be willing to, these estimates may be biased upward. However, the relative importance of the attributes is likely still valid.

The research showed that the value of the third-party health verified program that buyers are willing to pay more for verified information (Table 5.6). To enroll calves in a verified health program it will cost the producer on average \$3.00/hd; so with a mean value of \$7.12 the cost of the program is covered with a return on investment around \$4.00. The profit is not the only advantage of having calves enrolled. It can also open up markets that you may not have had previously. This occurs since there is less risk (morbidity, and death loss) for feedlots. Verified programs should increase confidence for buyers, because they know what they are getting and have the paperwork to back it up.

Another option when looking to add value to cattle is other value added programs. The research backed up what many previous studies have reported i.e., age and source verification, natural, and NHTC do add value (Table 5.6). A consideration though is that age and source verification is the only program of the three that does not require something to be given up to get that premium other than the documentation and any necessary verification costs. The latter two programs (Natural and NHTC) prohibit the use of certain products, so producers need to take that into consideration.

The other attributes in the table that could help any producer as they work their calves is the practice of castrating and dehorning. With a combined mean discount over \$60.00/hd, this is a process that needs to be done by every operation.

Figures 5.2 through 5.10 present a distribution of the responses in Table 5.6.

Table 5.5: Values Results of the Feedlot Procurement Preference Survey

Compared to feeder cattle raised without a specific identified health program, how likely are feeders that have had a verified health program to?				
Have lower morbidity				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
3.1%	1.3%	8.8%	56%	30.8%
Have lower death loss				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
1.3%	1.3%	6.9%	55.4%	35.2%
Have better feeding efficiency				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
.6%	1.3%	19.5%	60.4%	18.2%
Have better daily gain				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
.6%	1.9%	19.5%	61%	17%
Better dressing percentage at harvest				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
1.9%	5.7%	52.8%	31.5%	8.2%
Better yield grade at harvest				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
1.9%	6.3%	57.2%	27%	7.6%
Better quality grade at harvest				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
.6%	1.9%	40.3%	42.1%	15.1%
Cost more when purchased by you				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
1.9%	1.3%	10.7%	45.3%	38.4%
Bring higher prices when sold as fed cattle				
Very Unlikely	Unlikely	Neutral	Likely	Very Likely
9.4%	22.6%	41.5%	21.4%	4.4%

Table 5.6: Value (\$/Head) for a 600 lb calf with individual traits for the Feedlot Procurement Preference Survey

Traits	Mean	Min	Max	Std. dev.	COV
Weaned 45 days	22.70	0.00	200.00	20.19	.89
Adjusted to bunk	7.57	0.00	60.00	9.89	1.31
Vaccinated	13.83	0.00	100.00	14.33	1.04
Treated for Parasites	5.36	0.00	60.00	8.12	1.51
3rd Party Health Verified	7.12	0.00	50.00	9.89	1.39
Implant	(.43)	(50.00)	30.00	7.02	(16.33)
Age and Source Verified	13.43	0.00	50.00	11.35	.85
Natural	4.71	0.00	50.00	10.64	2.26
NHTC	5.08	0.00	80.00	12.20	2.40
Discount for bulls	46.58	0.00	200.00	31.18	.67
Discount for horns	14.04	0.00	100.00	16.96	1.21

Figure 5.2: Breakdown of premium results for what would they pay (WTP) for calves weaned 45 Days

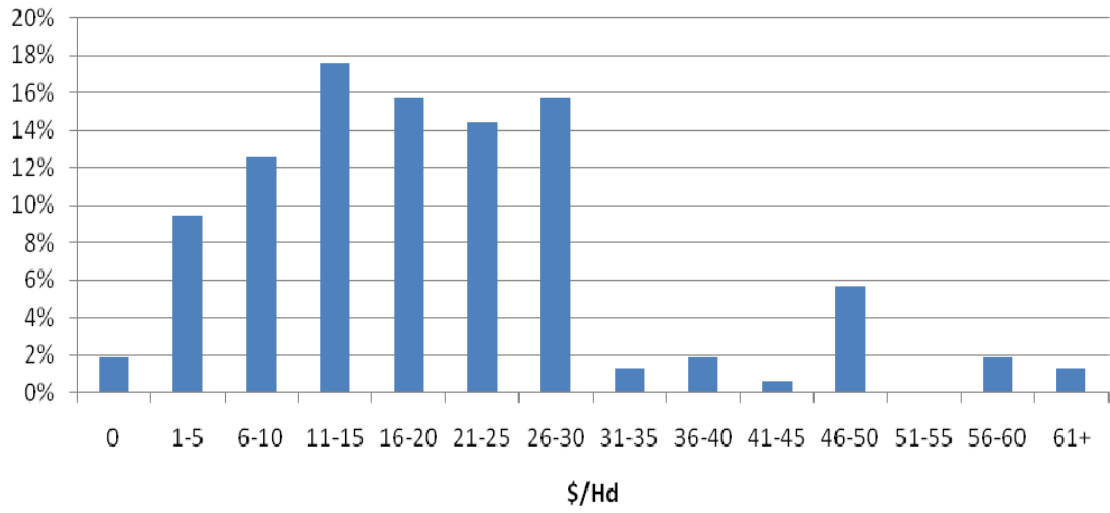


Figure 5.3: Breakdown of premium results for (WTP) for calves for calves Adjusted to Bunk

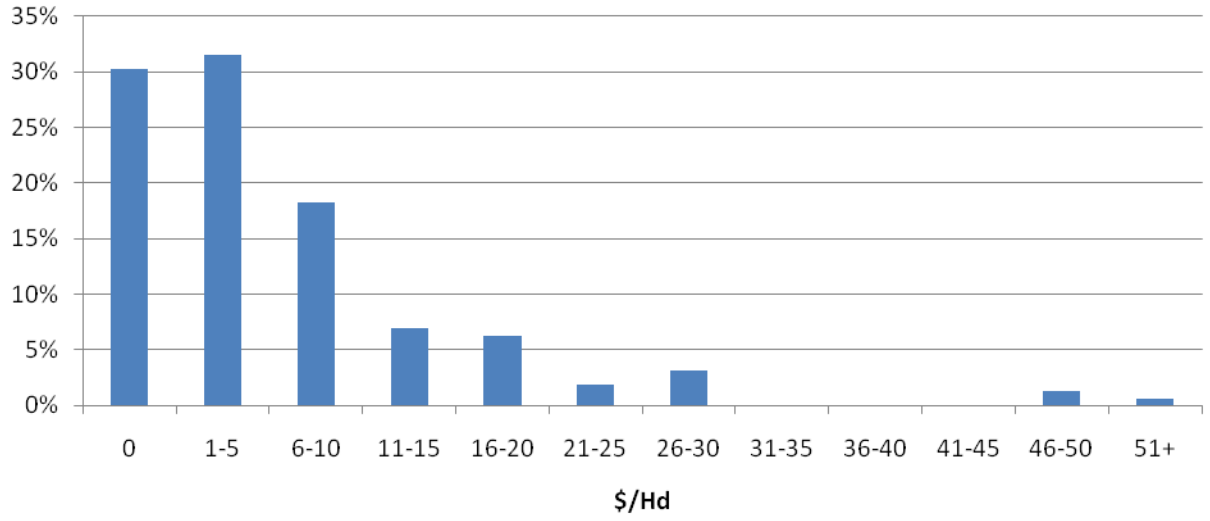


Figure 5.4: Breakdown of premium results for (WTP) for calves that are vaccinated

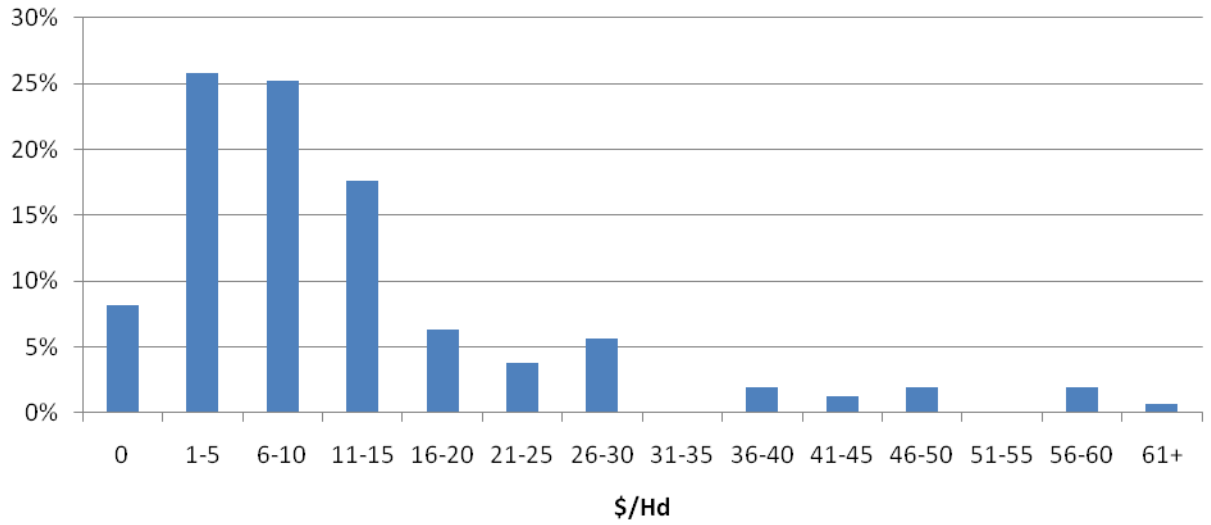


Figure 5.5: Breakdown of premium results for (WTP) for calves that are treated for parasites

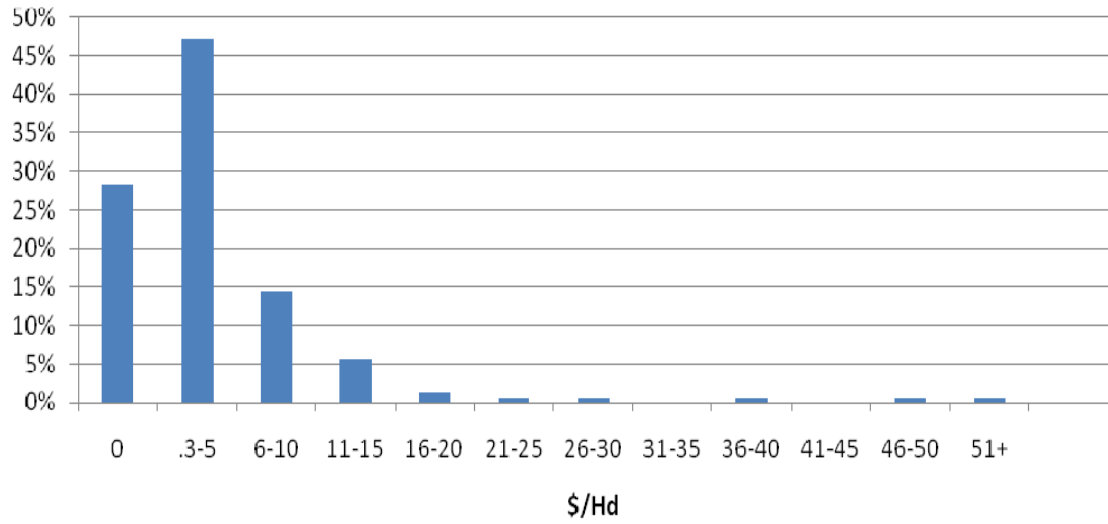


Figure 5.6: Breakdown of premium results for (WTP) for calves on a health verified program

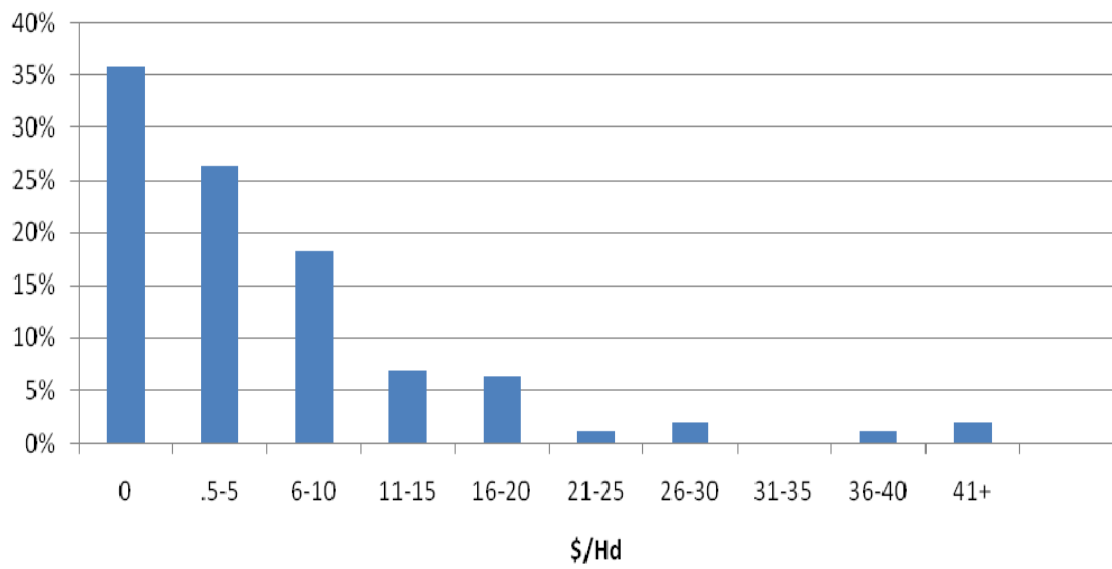


Figure 5.7: Breakdown of premium results for (WTP) for calves that have been implanted

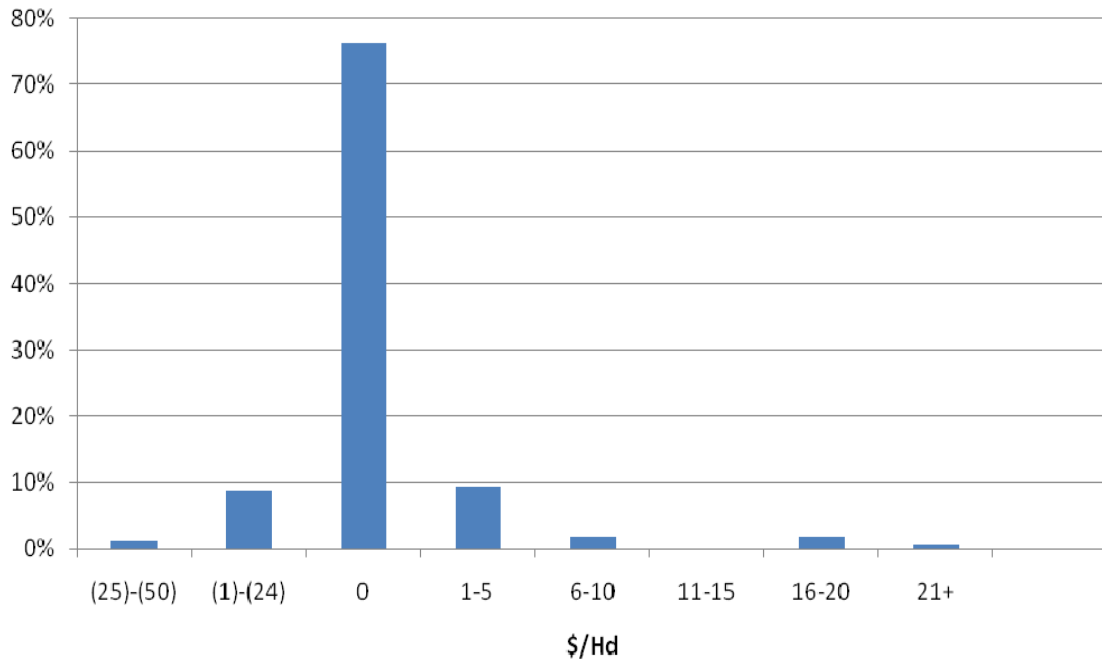


Figure 5.8: Breakdown of premium results for (WTP) for calves that are age and source verified

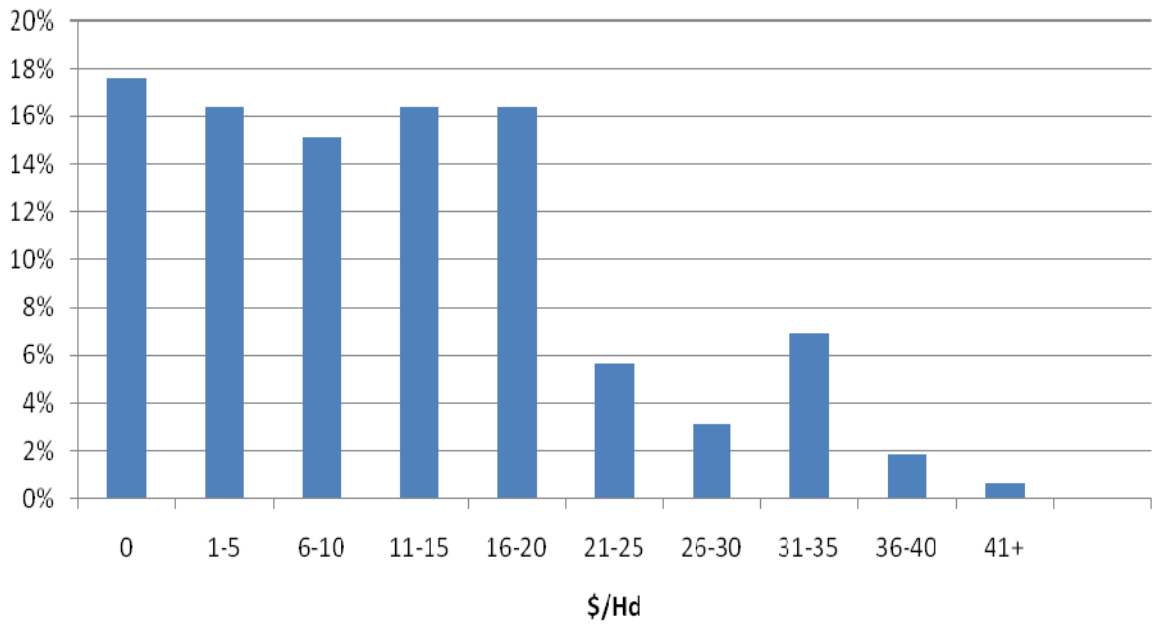


Figure 5.9: Breakdown of premium results for (WTP) for calves that are natural

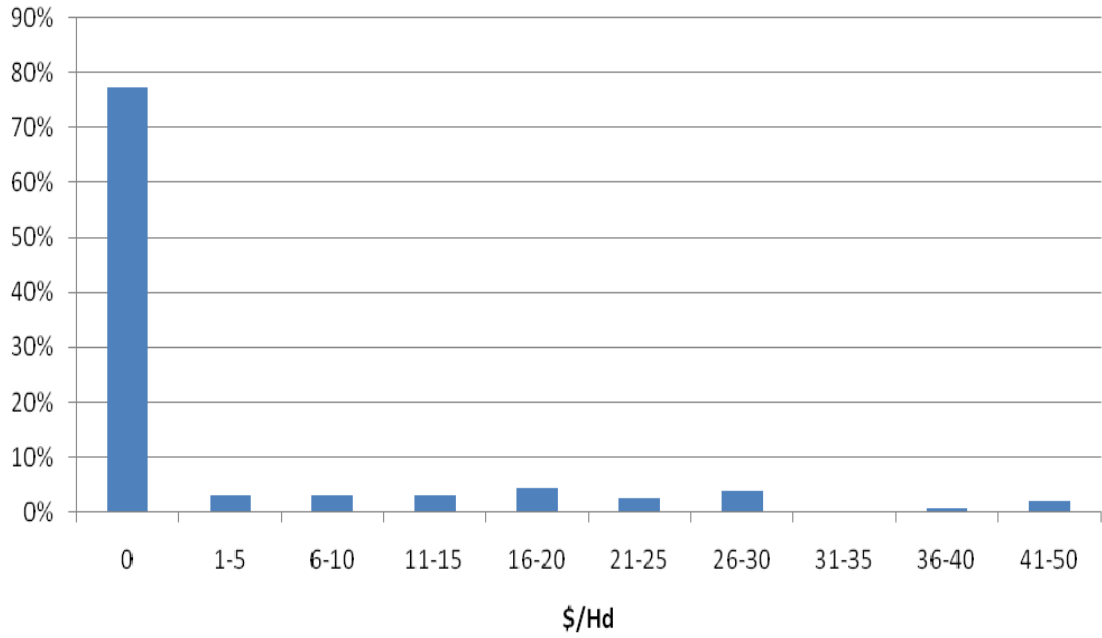
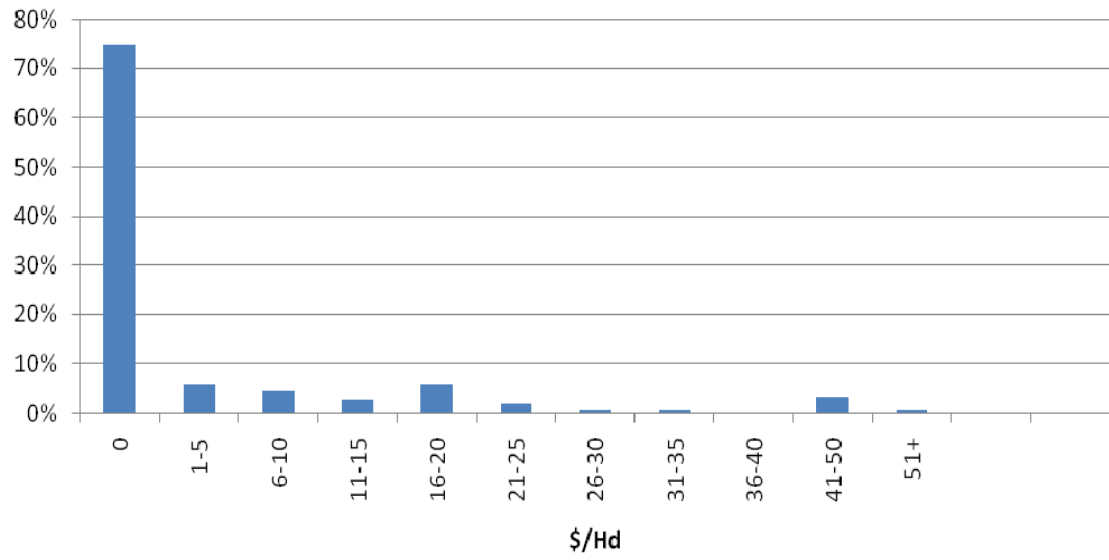


Figure 5.10: Breakdown of premium results for (WTP) for calves that are nhtc



5.5 Regression Results

The results of the multiple regression models (Table 5.7 – 5.11) are used to make predictions about the dependent variables (45 days preconditioned, adjusted to bunk, vaccinated, treated for parasites, health verified, implant, age and source verified, natural and non-hormone treated). The dependent variables are the premium the producer is willing to pay for the specific characteristic. The independent variables used were (age, location, education of manager, capacity, where they purchase cattle, what type of cattle they feed, and percentage they purchased that are on a health program). Being able to determine the variability in each independent variable will be a valuable tool to those trying to market calves. Age was the age of the person that responded to the survey. The location default in the regression model was feedlots located in the southern United States (TX, NM, CO, KS, and OK) with Midwest (NE, SD, ND, IA, IL, MN, OH, MI, and IN) and West (WY, MT, CA, WA, OR, AZ, NV, ID, and UT) being a “1” in the equation. The education default was a graduate or professional degree with high school, tech or secondary, and bachelor’s degree in the model as an “1”. Capacity was the annual size of the feedlot. Custom, local, video, direct (from producer), and own (feed their own cattle) determined how the feedlot purchased cattle. Conventional fed, age and source, NHTC and natural showed what type of cattle the feedlot feeds. Lastly was the number of cattle purchased on a health program. Each model determines the value that age (younger or older), location, education, size, how they purchase cattle, the type of cattle fed, and if they purchase cattle on health programs has on each individual characteristic. Listed in the models are the R-square, adjusted R-square, coefficient estimates, and the P-value. The R-square and adjusted R-square are listed to determine the amount of variability in the dependent variable being explained by the model. The R-square ranges from 0 to 1 (closer

to 1 determines a higher degree of explanatory power of the model). Coefficient estimates with P-values greater than 0.05 are not statistically significant, and those less than 0.05 are said to be significant.

A correlation analysis of all variables was also performed. The correlation coefficient ranges from - 1 to + 1. The sign (+/-) of the correlation indicates the direction of the correlation. A positive (+) correlation coefficient means that as values on one variable increase, values on the other variable tend to also increase; a negative (-) correlation coefficient means that as values on one variable increase, values on the other tend to decrease, that is, they tend to go in opposite directions.

Tables from the regression statistics (Tables 5.7 – 5.11) show numerous procedures, and verifications that are options for cow-calf producers. The amount of variation explained by the models is not high as the R-squared values are generally less than 0.20. This means that less than 20% of the variability in the respective dependent variables is being explained by the respective x-variables in each model. Adjusted R-squared values are even smaller, suggesting many of the x-variables are not adding much value in explaining variability in the dependent variables (the adjusted R-squared simply adjusts the R-squared downward with a penalty when more x-variables are added to the model that do not explain much additional variation in the y-variable). The models were all estimated using the same x-variables to maintain consistency. These models could be considered preliminary in nature and certainly more work examining the data might reveal more.

One variable was significant (p-value <0.05) in Table 5.7 preconditioned for 45 days.

Age has a coefficient of -0.295 that shows that an older feedlot manager will pay less of a

premium for a calf that is preconditioned for 45 days than a younger manager would. This is also the case for a manager that has a bachelor's degree. For example, a feedlot manager that is 10 years older (e.g. say 50 instead of 40) would pay \$2.95 per head less (-0.295 times 10 years). For the Implant model (Table 5.9), feedlots located in the west were willing to pay less.

The interpretation of the third-party verified regression model (Table 5.9) indicates that a feedlot with a lower capacity located in either the southern or western part of the United States and with an older manager would be willing to pay a premium for a calf on a Verified Health Program. Another tool that is useful when looking for value in an HPV is the correlation matrix (Table 5.12). This indicates that the HPV is strongly correlated with cattle sold on video that have been vaccinated, bunk broke, and treated for parasites which would all make sense.

Overall, the regression analysis suggests that variables that were collected and modeled do a poor job of explaining differences feedlot managers indicated they were willing to pay for various calf preconditioning programs. This means that some other factors must be at play contributing to differences in valuation of these programs across feedlot managers. It might simply be related to perceptions of the feedlot manager, the feedlot's comparative advantage for managing different types of calves, or how the feedlot is positioning or differentiating itself (e.g., whether the yard is trying to develop export market access, develop natural programs, or simply be a low-cost producer in the industry).

Table 5.7: Regression Statistics for Preconditioned and Adjusted Bunk

Preconditioned 45 Days			Adjusted Bank		
R Square	0.124		R Square	0.101501	
Adjusted R Square	0.025		Adjusted R Square	0.000261	
	<i>Coefficients</i>	<i>P-value</i>		<i>Coefficients</i>	<i>P-value</i>
45 Days	35.167	0.078	Adjusted to Bunk	15.43	0.118
Age	-0.295	0.034	Age	-0.10	0.118
Midwest	-1.946	0.587	Midwest	1.975	0.266
West	0.165	0.976	West	0.858	0.753
High school	3.583	0.591	High school	3.095	0.348
Tech or Secondary	-3.728	0.541	Tech or Secondary	0.527	0.861
Bachelors	-11.625	0.036	Bachelors	-1.866	0.494
Capacity	-0.935	0.656	Capacity	-1.088	0.297
Custom	0.1436	0.198	Custom	0.025	0.641
Local	0.107	0.336	Local	0.018	0.741
Video	0.075	0.592	Video	0.036	0.597
Direct	0.069	0.549	Direct	0.010	0.852
Own	0.111	0.666	Own	0.049	0.698
Conventional Fed	0.033	0.801	Conventional Fed	-0.001	0.980
Age and Source	-0.027	0.849	Age and Source	-0.075	0.286
NHTC & Natural	0.024	0.883	NHTC & Natural	-0.047	0.566
Health	0.036	0.592	Health	0.001	0.966

If P-value is greater than 0.05, there is no significance.
 If P-value is less than 0.05, there is **significance**.

Table 5.8: Regression Statistics for Vaccinated and Treated for Parasites

Vaccinated			Treated for Parasites		
R Square	0.150		R Square	0.101	
Adjusted R Square	0.054		Adjusted R Square	-0.001	
	<i>Coefficients</i>	<i>P-value</i>		<i>Coefficients</i>	<i>P-value</i>
Vaccinated	44.170	0.002	Treated for Parasites	0.768	0.924
Age	-0.168	0.083	Age	-0.001	0.925
Midwest	-0.423	0.866	Midwest	2.204	0.132
West	0.814	0.833	West	2.613	0.245
High school	4.183	0.369	High school	3.258	0.230
Tech or Secondary	-0.90	0.831	Tech or Secondary	1.856	0.454
Bachelors	-3.85	0.318	Bachelors	1.33	0.553
Capacity	-2.456	0.096	Capacity	-0.563	0.511
Custom	0.046	0.549	Custom	0.003	0.947
Local	0.015	0.846	Local	-0.022	0.624
Video	-0.002	0.978	Video	0.012	0.826
Direct	-0.064	0.428	Direct	-0.011	0.822
Own	-0.026	0.886	Own	0.018	0.864
Conventional Fed	-0.136	0.142	Conventional Fed	0.050	0.357
Age and Source	-0.170	0.090	Age and Source	-0.011	0.855
NHTC & Natural	-0.109	0.348	NHTC & Natural	-0.027	0.687
Health	0.046	0.320	Health	0.030	0.264

Table 5.9: Regression Statistics for Health Verified and Implants

Third Party Health Verified			Implant		
R Square	0.11		R Square	0.129	
Adjusted R Square	0.001		Adjusted R Square	0.031	
	<i>Coefficients</i>	<i>P-value</i>		<i>Coefficients</i>	<i>P-value</i>
Third Party Health Verified			Implanted		
Age	-0.383	0.968	Age	-3.519	0.609
Midwest	0.003	0.966	Midwest	0.041	0.394
West	-0.567	0.748	West	1.188	0.338
High school	-1.713	0.529	West	-4.691	0.015
Tech or Secondary	5.324	0.106	High school	0.446	0.846
Bachelors	3.057	0.310	Tech or Secondary	1.548	0.464
Capacity	2.779	0.307	Bachelors	0.544	0.775
Custom	-0.101	0.922	Capacity	-0.022	0.976
Local	0.016	0.766	Custom	0.013	0.736
Video	0.051	0.355	Local	-0.001	0.989
Direct	0.117	0.092	Video	0.001	0.996
Own	0.011	0.844	Direct	-0.040	0.321
Conventional Fed	0.081	0.526	Own	-0.006	0.951
Age and Source	0.002	0.974	Conventional Fed	0.005	0.911
NHTC & Natural	0.011	0.873	Age and Source	0.019	0.700
Health	-0.031	0.703	NHTC & Natural	-0.014	0.815
	0.055	0.095	Health	0.009	0.706

Table 5.10: Regression Statistics for Age and Source Verified and Natural

Age and Source Verified			Natural		
R Square	0.132		R Square	0.231	
Adjusted R Square	0.034		Adjusted R Square	0.144	
	<i>Coefficients</i>	<i>P-value</i>		<i>Coefficients</i>	<i>P-value</i>
Age and Source	17.408	0.119	Natural	-11.749	0.232
Age	-0.001	0.990	Age	-0.086	0.208
Midwest	-1.812	0.366	Midwest	2.766	0.120
West	-2.736	0.375	West	1.197	0.660
High school	-0.107	0.977	High school	3.605	0.273
Tech or Secondary	5.520	0.107	Tech or Secondary	3.578	0.235
Bachelors	4.588	0.138	Bachelors	3.695	0.175
Capacity	1.821	0.123	Capacity	1.543	0.139
Custom	0.084	0.179	Custom	0.037	0.504
Local	0.063	0.314	Local	0.119	0.032
Video	-0.035	0.651	Video	-0.044	0.520
Direct	0.065	0.314	Direct	-0.009	0.881
Own	0.081	0.579	Own	-0.061	0.635
Conventional Fed	-0.187	0.012	Conventional Fed	0.059	0.370
Age and Source	-0.133	0.099	Age and Source	0.095	0.179
NHTC & Natural	-0.171	0.068	NHTC & Natural	0.323	0.001
Health	0.011	0.766	Health	0.043	0.188

Table 5.11: Regression Statistics for Non-Hormone Treated

Non-Hormone Treated		
R Square		0.135
Adjusted R Square		0.038
	<i>Coefficients</i>	<i>P-value</i>
Non-Hormone Treated	-5.867	0.623
Age	-0.096	0.250
Midwest	2.842	0.187
West	0.061	0.985
High school	5.601	0.162
Tech or Secondary	0.817	0.823
Bachelors	1.572	0.634
Capacity	2.031	0.109
Custom	0.032	0.637
Local	0.070	0.297
Video	-0.035	0.676
Direct	0.077	0.266
Own	0.137	0.378
Conventional Fed	0.005	0.952
Age and Source	-0.043	0.619
NHTC & Natural	0.176	0.081
Health	0.094	0.019

Table 5.12: Correlation Matrix

	Age	Midwest	West	High school	Tech or Secondary	Bachelors	Capacity	Custom	Local	Video	Direct	Own
Age	1.00											
Midwest	0.03	1.00										
West	0.17	-0.29	1.00									
High school	0.15	0.02	-0.10	1.00								
Tech or Secondary	0.06	0.12	0.03	-0.24	1.00							
Bachelors	-0.20	-0.07	0.00	-0.42	-0.56	1.00						
Capacity	-0.27	-0.09	-0.06	-0.11	-0.15	0.16	1.00					
Custom	-0.09	0.13	-0.03	0.00	-0.13	0.11	-0.08	1.00				
Local	0.02	-0.04	-0.07	-0.03	0.10	-0.08	0.01	-0.46	1.00			
Video	0.12	0.13	0.02	0.07	0.17	-0.16	-0.05	-0.29	-0.18	1.00		
Direct	-0.02	-0.22	0.16	0.02	-0.04	0.00	0.13	-0.42	-0.32	-0.04	1.00	
Own	0.20	0.05	-0.06	-0.02	-0.13	0.10	-0.19	-0.14	-0.02	0.02	-0.09	1.00
Conventional Fed	-0.13	-0.05	-0.08	0.10	-0.09	0.09	0.07	0.16	0.24	-0.34	-0.25	-0.14
Age and Source	0.00	0.10	0.09	-0.13	0.07	0.01	0.02	-0.11	-0.31	0.31	0.28	0.09
NHTC & Natural	0.17	-0.04	0.02	0.04	-0.01	-0.06	-0.13	-0.08	-0.09	0.19	0.08	0.14
Health	0.16	0.14	0.00	0.01	0.08	-0.03	-0.27	-0.03	-0.13	0.28	0.05	0.05
Weaned 45 Days	-0.12	-0.02	-0.03	0.19	0.04	-0.23	-0.05	0.10	0.03	-0.03	-0.07	-0.06
Adjusted to bunk	-0.07	0.11	-0.05	0.16	0.06	-0.15	-0.11	0.07	0.05	-0.01	-0.11	-0.03
Vaccinated	-0.05	0.04	-0.04	0.16	0.04	-0.17	-0.19	0.16	0.04	-0.02	-0.21	-0.03
Treated for Parasites	0.03	0.14	0.04	0.11	0.03	-0.03	-0.11	0.10	-0.05	0.03	-0.09	-0.01
Third-Party Health Verified	0.05	0.05	-0.07	0.11	0.05	-0.05	-0.08	-0.11	0.06	0.22	-0.05	0.05
Implant	0.04	0.21	-0.25	0.01	0.08	-0.04	-0.06	0.13	0.02	0.03	-0.23	0.03
Age and Source	-0.07	-0.06	-0.05	-0.17	0.05	0.11	0.13	0.06	0.01	-0.14	0.04	-0.02
Natural	-0.09	0.12	-0.05	-0.03	0.03	0.05	0.06	-0.02	0.22	-0.04	-0.12	-0.04
NHTC	-0.05	0.07	-0.07	0.12	-0.07	0.01	0.07	-0.06	0.05	-0.05	0.08	0.04

Table 5.12: Correlation Matrix (continued)

	Conventional Fed	Age and Source	NHTC and Natural	Health	Weaned 45 Days	Adjusted to bunk	Vaccinated	Treated for Parasites	Third-Party Health Verified	Implant	Age and Source	Natural	NHTC
Conventional Fed	1.00												
Age and Source	-0.75	1.00											
NHTC & Natural	-0.49	0.01	1.00										
Health	-0.30	0.30	0.08	1.00									
Weaned 45 Days	0.09	-0.10	-0.01	0.00	1.00								
Adjusted to bunk	0.16	-0.17	-0.07	-0.02	0.58	1.00							
Vaccinated	0.04	-0.13	0.01	0.08	0.61	0.53	1.00						
Treated for Parasites	0.16	-0.10	-0.11	0.09	0.35	0.64	0.54	1.00					
Third-Party Health Verified	-0.05	0.07	0.00	0.20	0.10	0.22	0.29	0.33	1.00				
Implant	0.03	0.00	-0.05	0.07	0.07	0.22	0.18	0.14	0.09	1.00			
Age and Source	-0.09	0.04	-0.05	-0.01	0.12	0.18	0.20	0.11	0.12	0.12	1.00		
Natural	-0.09	-0.01	0.27	0.07	0.02	0.12	0.19	0.08	0.35	0.04	0.29	1.00	
NHTC	-0.04	-0.05	0.18	0.14	0.09	0.15	0.15	0.02	0.35	0.04	0.30	0.61	1.00

CHAPTER VI: CONCLUSION

With all of the information gathered in this survey, it indicates that managers see value in health programs, preconditioning, and other added management from the cow-calf producers. It is just not evident what that value is, and it appears to vary across feedyards. There needs to be further research done on the specific issue to decide that value. It will vary from feedlot to feedlot, and it may be impacted by time of year. For a feedlot to be willing to pay more for cattle, it has to be a benefit them. If a verified health program reduces death loss, morbidity, and increases grades at harvest, then research shows that managers are willing to pay more for those cattle.

One suggestion for producers is to visit with their buyers or those in the industry that are involved in selling cattle on a regular basis, and get their advice on how they should market your calves. There are numerous variables that need to be considered when marketing your calves, and there needs to be compensation in some form for the procedures performed on your cattle.

REFERENCES

- Avent, K.R. Lalman, D.L. Ward, C.E. “Economic Value of Preconditioning Feeder Calves.” Oklahoma State University. *Oklahoma Cooperative Extension Service* AGEC-583, 2010.
- Bulut, H. Lawrence, J.D. “The Value of Third-Party Certification of Preconditioning Claims at Iowa Feeder Cattle Auctions.” Iowa State University. *Department of Economics Working Paper #06031*, 2006.
- Carter, B. Loest, C.A. Mathis, C.P. “Preconditioning Beef Calves.” New Mexico State University. *New Mexico Cooperative Extension Service*. Circular 637: 1-6.
- Dhuyvetter, K.C. “Preconditioning Beef Calves: Are Expected Premiums Sufficient to Justify the Practice.” Kansas State University. *Western Agricultural Economics Association*, 2004.
- King, M.E. Seeger, J.T “Ten-year trends at Superior Livestock Auction: Calves in value-added health programs consistently receive higher prices.” *Pfizer Animal Health Technical Bulletin*. July 2005
- Lawrence, J.D. Yeboah, G. “Estimating the Value of Source Verification of Feeder Cattle.” *Journal of Agribusiness* 20(2), 117-129. Fall 2002
- U.S. Department of Agriculture, National Agricultural Statistics Service.
<http://www.nass.usda.gov/>, various reports

APPENDIX A

1.) Your position with the cattle feeding operation is (check the most appropriate answer)

- Owner-Operator
- Management but not owner
- Office Staff
- Other (please specify your role) _____

2.) What year was the main manager/operator of this feeding operation born?

How many years has the main manager/operator been feeding cattle?

- less than 5
- 5-9
- 10-19
- 20-29
- 30 -39
- 40 or more

3.) Your cattle feeding operation is located in which state? (if in multiple states, select main state)

4.) The best description of the main manager/operator educational background is (check one):

- Did not attend college
- Technical training or attended college, no bachelor's degree
- Bachelor's college degree
- Graduate or Professional Degree (MS, Ph.D., DVM, Law School, etc.)

5.) How many fed cattle did your operation market in 2010?

- Less than 100 head
- 100-499 head
- 500-999 head
- 1,000-5,999 head
- 6,000-9,999 head
- 10,000-29,999 head
- 30,000-49,999 head
- 50,000 or more head

6.) In 2010 approximately what percentages of cattle finished in your feedlot did you buy as feeders from each of the following sources (total should add to 100%)?

_____ % Custom fed, so I did not buy or own the animals

_____ % Purchased at local auctions

_____ % Purchased on video auctions

_____ % Purchased direct from seller

_____ % Home-raised from your own cow-herd

_____ % Other (please describe)

100% = Sum Total

7.) In 2010 approximately what percentage of cattle you finished in your feedlot operation did you market when finished as (total may add to more than 100%)

_____ % Conventional fed cattle

_____ % Age and source verified

_____ % Non-hormone treated cattle (NHTC)

_____ % Naturally raised (no hormones and no antibiotics)

_____ % Organically raised

_____ % Other (please describe)

100% = Sum Total

8.) In 2010 what percentages of your finished cattle did you market in each of the following ways (total should add to 100%)?

_____ % Live-weight, negotiated price

_____ % Live-weight, formula price

_____ % Dressed weight, negotiated price

_____ % Dressed weight, formula price

_____ % Grid (dressed and grade and yield)

_____ % Other (please describe)

100% = Sum Total

9.) What is your best guess of the percentage of feeders you purchased in 2010 that were sold to you with an identified health program (e.g., Sure Health, Select Vac, etc.)?

_____ % Feeders purchased with an identified health program

10.) Compared to feeder cattle raised without a specific identified health program, how likely are feeders that have had a verified health program to (Please check response for each attribute)?

Attribute	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Have lower morbidity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have lower death loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have better feeding efficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have better daily gain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better dressing percentage at harvest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better yield grade at harvest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better quality grade at harvest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost more when purchased by you	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bring higher prices when sold as fed cattle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11.) What added value (\$/head) do you consider a 600 pound steer calf is worth that has the following traits compared to an animal that does not have that trait? (Please specify the value of each trait individually in \$/head)

Value (\$/Head)

_____ Weaned for 45 days compared to not weaned

_____ Adjusted to water tank and feed bunk

_____ Respiratory (viral and bacterial) and clostridrial/blackleg vaccinated

_____ Treated for internal and external parasites

_____ Third-party verified health program

_____ Implanted

_____ Age and source verified program

_____ Naturally raised (no hormones or antibiotics)

_____ Non-hormone treated (NHTC)

12.) What discount (\$/head) do you consider a 600 pound calf is worth that has

_____ Not been castrated

_____ Not been dehorned or tipped

Suppose you were buying a 100 head lot of 650 lb. healthy black-baldie medium-framed uniform steers on a video auction sourced from a single ranch. The calves are represented with one of three health programs. If no health program is listed, no specific information was provided at the auction about the calf health program.

Health Program A:

- vaccinated against respiratory (viral and bacterial) and clostridial/blackleg
- treated for internal and external parasites
- no weaning claim

Health Program B:

- vaccinated against respiratory (viral and bacterial) and clostridial/blackleg
- treated for internal and external parasites
- weaned for at least 30 days

Health Program C:

- vaccinated against respiratory (viral and bacterial) and clostridial/blackleg
- treated for internal and external parasites
- weaned for at least 45 days

Three different sources might certify the health program presented:

- The seller of the calves with **no** USDA certification (Seller)
- A third party (e.g., veterinarian, pharmaceutical company) **without** USDA certification
- A third party that is certified by the USDA for the program verification (USDA Certified)

Below are sets of the 100-head 650 lb steer lots available to purchase with varying attributes and varying price premiums. Please select the choice in each scenario of which pen you would prefer to purchase. Even though this is a hypothetical exercise, please answer the questions as if you were actually facing these alternatives in the market as your answers will be important in helping us to provide information to cow-calf producers to produce the types of feeder cattle you want to have available for your feedlot.

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 1

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	Seller Claim	USDA	Seller Claim
Age and Source Verified	No	No	No	Yes
Price Premium (\$/cwt)	\$0.00	\$6.00	\$6.00	\$6.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 2

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	USDA	USDA
Age and Source Verified	No	Yes	Yes	Yes
Price Premium (\$/cwt)	\$0.00	\$0.00	\$6.00	\$0.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 3

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	3 rd Party	USDA	USDA
Age and Source Verified	No	Yes	Yes	No
Price Premium (\$/cwt)	\$0.00	\$3.00	\$0.00	\$6.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 4

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	3 rd Party	USDA	3 rd Party
Age and Source Verified	No	No	Yes	Yes
Price Premium (\$/cwt)	\$0.00	\$9.00	\$9.00	\$3.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 5

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	3 rd Party	3 rd Party
Age and Source Verified	No	No	Yes	No
Price Premium (\$/cwt)	\$0.00	\$0.00	\$9.00	\$9.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 6

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	3 rd Party	Seller Claim	Seller Claim
Age and Source Verified	No	Yes	No	Yes
Price Premium (\$/cwt)	\$0.00	\$0.00	\$9.00	\$9.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 7

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	3 rd Party	3 rd Party	3 rd Party
Age and Source Verified	No	Yes	No	No
Price Premium (\$/cwt)	\$0.00	\$6.00	\$6.00	\$0.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 8

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	Seller Claim	USDA	3 rd Party
Age and Source Verified	No	Yes	No	No
Price Premium (\$/cwt)	\$0.00	\$0.00	\$0.00	\$3.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 9

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	Seller Claim	Seller Claim
Age and Source Verified	No	No	Yes	No
Price Premium (\$/cwt)	\$0.00	\$3.00	\$6.00	\$3.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 10

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	3 rd Party	3 rd Party	USDA
Age and Source Verified	No	No	No	Yes
Price Premium (\$/cwt)	\$0.00	\$0.00	\$3.00	\$3.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 11

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	3 rd Party	Seller Claim
Age and Source Verified	No	Yes	Yes	Yes
Price Premium (\$/cwt)	\$0.00	\$6.00	\$0.00	\$3.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 12

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	USDA	3 rd Party
Age and Source Verified	No	No	Yes	No
Price Premium (\$/cwt)	\$0.00	\$6.00	\$3.00	\$9.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 13

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	USDA	Seller Claim
Age and Source Verified	No	No	No	Yes
Price Premium (\$/cwt)	\$0.00	\$3.00	\$9.00	\$0.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 14

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	Seller Claim	3 rd Party
Age and Source Verified	No	Yes	No	Yes
Price Premium (\$/cwt)	\$0.00	\$9.00	\$3.00	\$6.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 15

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	USDA	3 rd Party	USDA
Age and Source Verified	No	No	No	No
Price Premium (\$/cwt)	\$0.00	\$9.00	\$0.00	\$9.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 16

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	Seller Claim	3 rd Party	Seller Claim
Age and Source Verified	No	Yes	Yes	No
Price Premium (\$/cwt)	\$0.00	\$9.00	\$3.00	\$0.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 17

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	Seller Claim	Seller Claim	USDA
Age and Source Verified	No	Yes	Yes	No
Price Premium (\$/cwt)	\$0.00	\$6.00	\$9.00	\$6.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which pen of feeder cattle among these four you would prefer to buy
Choice Set 18

Attributes	Health Program			
	None Indicated	Program A (not weaned)	Program B (weaned 30 days)	Program C (weaned 45 days)
Health Program Certified	No	Seller Claim	3 rd Party	3 rd Party
Age and Source Verified	No	Yes	Yes	Yes
Price Premium (\$/cwt)	\$0.00	\$3.00	\$6.00	\$9.00
You would buy (select)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>