



Vol 1. #13. Good morning. I have presented the pros and cons of Age and Source Verification of MT calves based on comments from Superior Livestock Video personnel and results of research we have conducted during the past couple of years. Our goal is to add value to weaned calves. This week, we present the results of an analyses conducted by Joe Vanek (Ag Economics and Economics) and Andy Kellom (Montana Beef Network) which summarized factors that added value to calves sold on the Superior Livestock Video Auction Market.

The second article is the conclusion of a two part presentation made by Dr. Wiltbank in the early 1990's on how to improve the calf crop. Best regards. John Paterson, Extension Beef Specialist.

Age and Source Verification of Montana Calves: Does it Pay?
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The Montana Beef Network (MBN) is a producer-driven partnership between the Montana Stockgrowers Association (MSGA) and Montana State University (MSU). The MBN provides education, research, and outreach to Montana cattle producers. One service is helping producer's market consistent source and process-verified feeder cattle. Part of the on-going research is to provide feedback to producers about source and age verification.

When discussing source and age verification with Montana ranchers, the MBN personnel invariably are faced with the question, "What's in it for me?" The benefit to the rancher must be greater than the cost. On-going MBN research is attempting to answer this question. The purpose of this research project was to determine if there was added value for the producer who age and source verified his calves.

In order to market source and age verified calves, the producer must be enrolled in an accredited USDA Process Verified program (PVP). The main programs evaluated in this study were Cattle Log (MBN), Superior Livestock Video, IMI Global and Angus Source.

In June and July of 2007, we collected sale summary results from Superior Livestock Video Auctions. These data were then used to determine if a premium existed for source and age verification of Montana calves. Several other management procedures were analyzed as well.

Five hundred and ninety lots of calves which was 68,665 head were sold in the June and July Superior Livestock Video Auctions. The average sale weight for the calves was 585 pounds with a sale value of \$117.24/cwt. Approximately 60% of the calves were steers with only 15% weaned from their dam. The average lot size of calves was 116 head. Of all the calves sold, 31% were source and age verified. Most of the calves were vaccinated prior to sale (88%) with ranchers following the VAC 34 or VAC 45 protocols. Sixty four percent of the calves were sold as "black hided" and 23% were sold as "cross-bred".

Table 1. Summary averages for 68,665 Montana calves sold in either the June or July Superior Livestock Video Auctions

Variable Measured	Average
Average weaning weight	585 lbs
Average price received	\$117.24/cwt
Average number of calves that a MT rancher sold	116
Percentage of the calves which were weaned	15%
Percentage of the calves which were source and age verified	31%
Percentage of calves sold in the July sale vs. June sale	62%
Percentage of calves which were sold as VAC 34	76%
Percentage of calves which were sold as VAC 45 calves	12%
Breed description	
Black cattle	64%
Black Angus	62%
Red cattle	13%
Red Angus	6%
Charolais	7%
Black white face	1%
Crossbred	23%

For a 600 pound calf, the premium received for source and age verification was \$12.83 per head. The average cost of participating in a source and age verification program is \$3 per head. The premium less the cost per head leaves Montana cattle producers with a profit of \$9.83 per head. Other premiums received by Montana producers are as follows, VAC 34 and(or) VAC 45 cattle received a premium of \$14.81 per head. Steer calves sold for \$52.43 per head over heifers. Weaned cattle received a premium of \$17.64 per head. Producers who were able to supply a semi-truck load of cattle received a premium of \$12 per head.

Table 2. Variables which were significant for adding value to Montana calves sold in the June and July Superior Livestock Video Auctions (590 lots)

Variable tested	Calculated added dollars received for a 600 lb steer
Steer vs. heifer	\$52.43
Weaned vs. not weaned	\$17.64
Source and Age verified	\$12.83
Sold semi-load of calves	\$12.65
July sale vs. June sale	\$16.51
VAC 34 and(or) VAC 45 protocol vs. other protocol	\$14.81

Research is currently being conducted to evaluate the same variables in seven auction markets in Montana, North and South Dakota as part of a two year regional project. The first year's results will be presented in an upcoming Prime Cuts newsletter.

Challenges for Improving the Calf Crop (Part II)¹

J. N. Wiltbank²

It is widely accepted that reproductive performance is the most important economic trait in a beef cow herd. Willham (1973) illustrated that reproduction in relative economic terms was 10 times as important as production and 20 times as important as product. In contrast, only 10% of the variation in reproduction will respond to selection while 40 and 50% of the variation in production and products, respectively, will respond to selection. This is part II of Dr. Wiltbank's manuscript which he presented in the early 1990's.

SECOND STEP

Utilize principles to develop a plan for improving calf crop. Keeping the preceding principles from last week's article in mind, the following plan was developed:

a. Cows

- (1) Sixty-day breeding and calving season.
- (2) Moderate body condition at calving time.
- (3) Flush for two weeks prior to the start of the breeding season and first three weeks of the breeding season.
- (4) Remove calves for 48 hours at start of breeding season.
- (5) Pregnancy check and body condition score cows at calving. Sort and feed thin cows.

Cull open cows.

b. Heifers

- (1) Breed at 13 to 15 months of age for 45 days.
- (2) Feed and manage to weigh 700 lbs at the start of the breeding season and 950 lbs at the start of calving (moderate body condition).
- (3) Synchronize and breed twice A.I. to bulls known to sire light birth weight calves. Use carefully selected clean up bulls for 20 days.

- (4) Pregnancy check. Cull open heifers. Body condition score; feed thin heifers.

- (5) Keep separate from older cows.

c. Bulls

- (1) Check for fertility prior to start of the breeding season.
- (2) One clean up bull for 200 heifers.
- (3) One bull for 40 cows.

THIRD STEP

Predict economic value of the plan using available resources.

To accomplish this, the reproductive performance on the ranch must first be determined and an inventory of resources must be made. Table 18 outlines the reproductive performance on a hypothetical ranch (EZ Ranch).

Using the information in Table 18 helps visualize the problem in this cow herd. Only 487 calves are weaned. Thus, only 55% of the animals are producers. This results from small numbers pregnant (62%) and high (6%) losses from calving to weaning, particularly in first-calf heifers (16%). Very few animals calve early (25%). The herd has 398 (45%) non-producing animals. There are 120 (30%) of the non producers that are the yearling heifers not being bred. Only 368 calves are sold with a gross return of \$153,736 (Table 19). This does not include sale of cull cows and bulls. The gross return per animal is \$171.

An inventory of resources made for the hypothetical ranch include: 9000 acres of land, 10 acres per animal, divided into twelve pastures. The nutrients available from grazing were estimated and are shown in Table 20.

Recognizing that years differ, the type of assessment in Table 20 gives a cattleman an idea of when to supplement and how much supplement is needed. This assessment helps a rancher visualize more clearly when to breed and calve. Note that nutrient requirements were calculated for different types of animals i.e. wet and dry.

In this herd dry cows need to be supplemented in December and January and the wet cows September through March. The present calving season (December 15 to March 25) does not match the feed supply. It appears calving needs to be changed to February or wet cows need to be supplemented heavily in December, January and February. In this plan the calving season was changed.

Growing heifers need supplemental feed from September through February if heifers are to be bred at 13 to 15 months of age.

Other resources available include:

High energy feed \$155 per ton
Molasses \$ 80 per ton
Protein supplement \$240 per ton
Working corral with alley
Close access to four pastures
1 man for working cattle

Needed:

20 tubs for molasses
2 self-feeders for heifers
Chute for breeding AI
Help for AI program
Help for first 20 days of calving
Help at start of breeding season to work cows and remove calves

Utilizing the information available about the principles, reproductive performance was predicted (Table 21). The number of animals in the herd remained the same; however, herd composition changed. Only yearling replacement heifers are in the planned herd, bull numbers are decreased and there are two-year old cows because yearling heifers were exposed to the bull. Therefore, there are 762 producers (86%) in the herd. Calving starts February 1 and ends April 2; thus calving more closely parallels the supplies of feed available for a wet cow. Most cows and heifers (80%) are predicted to calve the first 20 days of the calving season.

Calves are younger at weaning but are suckling cows when adequate grazing levels are available and, consequently, should grow more rapidly. There were 602 calves sold--an increase of 235 (Table 22). The gross return was \$242,245 or \$274 return per animal.

Gains needed by replacement heifers to reach target weight are obtainable as shown in Table 23. Increased costs were estimated in Table 24.

A comparison of the plan and present situation was made (Table 25). The proportion of the herd that was non producing was estimated to decrease by 31% and pounds-of-calf-sold increased by 102,038 pounds. The costs were estimated to increase by \$64 per animal. Even with this increase \$37 more return per cow was estimated.

STEP FOUR

Modify the plan to make it economically viable and physically possible.

This step is difficult to do without actual ranch situations. Steps should be taken to decrease feed and labor costs.

Practices such as utilizing pasture for thin cows, developing pastures for bulls and for heifer development, and pastures for young cows will need to be thought about.

STEP FIVE

Develop a calendar so plan can be executed.

Based upon the plan presented, the following calendar (Figure 1) was developed.

Figure 1. CALENDAR 1991 BREEDING AND 1992 CALVING SEASON

Date Event

March 1 Line up help for AI & start of breeding, order semen & supplies
April 1 Have feed delivered for flushing cows and heifers --60 ton
April 11 Start feeding of breeding cows and heifers-- 4 lbs/day. Implant heifers
April 14 Put bulls in corral
April 15 Fertility check bulls
April 16 Sell infertile bulls
April 20 Remove implants
April 22 Breed heifers AI
April 23-24 Round up cows and calves
April 25 Sort cows from calves. Turn in bulls.
April 27 Work calves. Return calves to cows.
May 7 Reimplant heifers--use used implants
May 14 Remove implants, start heat check
May 15 & 16 Heat check & breed heifers AI
May 17 Heat check & breed heifers AI, stop feed on cows & heifers
May 19 Turn in clean up bulls for heifers
June 8 Remove bulls from heifers
June 24 Remove bulls from cows

July 15 Line up help for preg checking
August 16-17 Precondition calves
August 20 Order feed for thin cows--21 ton, order feed for replacement heifers--47 ton
September 1 & 2 Wean calves, pregnancy check and body condition score cows. Sort thin cows.
September 3 Sell open cows, start replacement heifers on self feeders
September 4 Start program for thin cows
November 15 Order molasses--252 ton--and protein--43 ton for cow herd and pregnant heifers
December 1 Start molasses & protein to cow herd and pregnant heifers--4 lbs molasses-1 lb protein
January 4 Order calving supplies, line up help for calving
January 24 Start calving
February 1 Increase molasses in wet cows, continue protein
March 1 Stop molasses & protein
April 2 Finish calving

With the calendar generated, work can proceed in the cow herd portrayed here. The change from a long-breeding to a short-breeding season would be made in one year. In other herds changing the calving season might require several years, especially if the start of the breeding season remained the same.

SUMMARY

The challenge for improving reproductive performance is to apply the information available today to individual ranches. Six steps were outlined to accomplish this:

1. Study information available for improving reproductive performance and summarize into principles or laws.
2. Utilizing available information develop a plan for improving calf crop in your herd.
3. Predict economic value of plan using resources available to you.
4. Modify plan to make it more economically viable and physically possible on your ranch.
5. Develop a calendar so plan can be executed.
6. Observe results and modify plan.

An example was used, and in this example return was predicted to increase \$37 per cow if the plan was applied.

¹*In: 39th Annual Florida Beef Cattle Short Course Proceedings; 1990 May 24; Gainesville, FL. University of Florida (Gainesville): Animal Science Department.238p.*

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