Measuring the Profitability of Retained Ownership of Dairy Calves through Finishing

Decision aids are provided to measure the profitability of dairy calves retained ownership that covers three phases of production and marketing including: 1. The day-old calf rising, 2. feeder phase and 3. final finishing for harvest.

Listed below are a number of guide lines to consider when measuring profitability beyond selling day-old calves. The steer calf is more valuable than heifers for beef because they are more efficient in feed conversion, average daily gain and carcass value. This reality is reflected in the price of day-old calves not for herd replacements. For measuring costs of retained ownership the day-old calf market value is the cost it represents the "opportunity cost" of not selling the calf. This is the in cost for custom hired retained ownership most frequent through calf raising and the feeder cattle phase.

> ➢ Retained ownership is profitable only if the **added net income** exceeds the total **added cost** of retaining cattle.

> ➢ The **value of added net weight gain** must exceed the **added cost** of the weight gain.

> ➢ For the dairy producer they normally **contract all** the feeding services for retained ownership. To measure profitability of retaining ownership means there are production, marketing and financial date requirement from each phase of production and marketing.

> ➢ Retaining ownership beyond selling the day-old calf means there are added costs of production and capital requirements at each phase and there is added **production and market price risk.** Day-old calf to finished to harvest cattle is a very long production cycle of more than 450 days depending average daily gain.

> ➢ Retained ownership requires **added management skills and time of support personnel to** deal with contractors and addressing marketing issues, record keeping and management decision making than just selling the day-old calf.

> ➢ When the production and price risk does not warrant retained ownership the beef-dairy day-old calf **price difference makes it profitable** to market beef-dairy cross calves.

All these points seem pretty logical so it's a question of what decision aid tools and information can assist in evaluating the profitability of adding the retained ownership dimension to the dairy farm business.

Decision aids have user manuals and Appendices A through E address the data and information need at each phase of retained ownership to calculate net income and costs to measure profitability at each stage of production and marketing. This is because sometimes it maybe more profitable to sell feeders than finish the cattle for harvest.

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To be successful decision makers need to make **projections** on profitability and when lots of cattle results measure success called **closeouts**. There is no reason to commit to retaining ownership "blind" or not informed on each phase. Contactors and experienced producers are excellent sources of information. They will review your projections especially when the numbers are on paper! See appendix: B for content of benchmark reports.

Key Definitions in Calculating Total Costs of Retained Ownership

The cost (value) of the day-old calf at the beginning of the retained ownership is the net sales value expected if the calf is sold. In economics this is referred to as **opportunity cost** of not selling the calf.

When evaluating each phase of retained ownership the profit or loss is determined by actual sale income and the feeder's total accumulated retained costs. For example, when the feeder is valued at the beginning to finishing phase it will be accumulating costs including the day-old calf (it's opportunity cost) plus the calf raising cost and feeder production cost and transportations cost to the feedyard. This allows the correct measure of total cattle production and marketing cost to measure lot profits. This is the costs to replace the **feeder in cost** rather than the most frequently **plugged** value input feedyard's lot closeout report.

Successful retained ownership requires additional management, working with all contracting firms from freight to each yard's service providers for each phase of production and marketing. The cost of this management and support accounting, record keeping and communications services needs to be included in costs. Including a management cost and these indirect costs should be added to lot closeout cost data provided by each contracted phase. **This is the responsibility of the cattle owners.** In other words, the feeders or custom feedyards cannot report the true total costs for a lot of cattle.

Paying attention to finished cattle and corn markets becomes an ongoing task for retain ownership projection. Hiring professional services for marketing maybe a necessity.

General rules for making projection and doing closeouts when measuring profitability.

➢ Never **only use** the contractor's or feedyard's cost data beyond what you are actually billed for in their reporting when you are calculating **your profit**.

➢ Never use published or feedyard lot closeout reports **"breakeven" as a full cost.**

➢ By the way **you go broke** if all you do is breakeven based on covering incomplete reported costs values. It is not the responsibility of the contractor to know your full costs.

➢ It's the cattle owner's responsibility to provide the cost or transfer value into or their purchase feeder cost for the cattle going into the feedyard.

➢ Having the **correct accumulated cost of cattle entering** each phase of retained ownership is critical because it accounts for the largest portion of total production costs.

➢ Don't retain ownership if it's not profitable so set a **profit target** before retaining.

➢ Be informed and **ready to sell** at day-old or at phase of production.

➢ The lot closeout **using your costs** and income will measure your true profitability.

➢ Recall the 5 P's prior, preparation, prevents, poor, performance!

Some reality of feedyard feeding cattle.

There is always a feeder purchase **price or cost low enough** that a feedyard can make money feeding them.

A feedyard is like a grave yard they will take anything that comes! These are the words of Bill Mies, feedyard specialist, Professor emeritus Texas A&M University.

This comment fits the reality of feeder's producer in the cow-calf sector reported in the 2017 census data where 90% of the herds have less than 100 cow herd. These herds have 46% of beef cows. Average cow herd using several breed and genetics in the US is 44 cows. High level of these part-time herds cannot be expected to produce the large numbers of consistent performing cattle like dairy producers for feedyards to finish.

Feedyards prefer feeding dairy cattle because they have very predictable genetics.

Using sexed semen and improve beef genetic means the beef-dairy cross will be more competitive. A growing market for cattle age and source identification can be captured by dairy producers. Dairy producers need to watch these changes as they may create opportunities
.
Feedyards have **tremendous professionals managing cattle and providing marketing analyses**. Their capabilities are never fully reported. You never want to retain ownership without engaging these professionals, and visiting the yard when your cattle are on feed and discuss your results. The feedyard's goal is to have long-term happy customers!

Calf raisers, grow or background yards and feedyard managers are **true cattle care experts**. These managers hire specialist and employees that ensure diseases and injuries are controlled, nutritional needs are met to for cattle achieve cost effective production.

There is no question that retained ownership does increase the potential income risk, particularly price risk. Feedyards operator can guide retained ownership participants to risk managements services providers.

To capture the profit potential dairy producers must keep informed when they are not getting paid for producing calves that are worth more than the market is paying. Do the necessary data collecting and analysis the **be an informed decision maker**. Keep up communications with the contract providers at each level. Use closeout that truly measure profitability that can be used to inform potential calf and feeder buyers of your superior genetics.

Appendix A: Value of Gain Versus Cost of Gain

For retained ownership the feeder **in cost or price** must be offset by a lowers cost of weight gain to be profitable. Or just think what are they paying minus my feeder current value or my opportunity cost selling versus my potential cost of gain if retained.

Value of Gain is the net retained income minus the net total cost value divided by the net sales payweight. The value of gain must be greater than the cost of gain to be a profitable market alternative.

The formula is as follows: For value of gain per Lb. = ((Net Sales Value – Total Feeder Costs)/Net Payweight – Lb.).

Calculations of Feedyard Margins

To accurately calculate these margins for evaluation of growing and finishing alternatives, decision makers need the following data:

- Net payweight of calf or feeder cattle in Lbs.
- Payweight purchase or accumulated costs of retained calf or feeder.
- Net payweight when marketed.
- Payweight gain.
- Full cost of gain – all cost including indirect costs and interest cost.
- Payweight net sales price $/Cwt. as in published sources.
- Number of head sold net of death loss.

The formulas for calculating margins are as follows:

Marketing Margin ($/Hd) = ((Total Purchase Payweight-Lb. * .01) * (Sales Price $/Cwt.-Purchase Cost-$/Cwt.)) / Head Out

Feeding Margin ($/Hd) = ((Sales Price-$/Cwt. – Total Cost of Gain-$/Cwt.) * Net Gain-Lb. * .01) / Head Out

Net Margin or Income ($/Hd) = Marketing Margin + Feeding Margin

Appendix B: Tools and Strategies for Developing a Profitable Beef x Dairy Program

Economics of Beef x Dairy Retained Ownership – Know Your Numbers.

With superior cross bred feeder cattle no one in the open market **is required to pay for their increased value**. Feedyard operators will take advantage of this profit reality.

Using sexed semen and selected superior beef genetics these crossbred feeders will perform better in the feedyard and produce a more valuable carcass than Holstein feeders. This can possibly be a profitable retained ownership option for dairy producers that wish to finish their crossbred day-old calves. The decision aids facilitate the comparison of beef x dairy calves to straight bred retained ownership.

These decision aids provide a guide on the numbers needed to project expected profitability to retain ownership and also do the necessary calculations to measure results to improve the possibilities to choose when and where to retain ownership. At times it may be more profitable to sell raised light feeders or heavy feeders than day-old calves and then retaining through custom finishing. This is why decision aids are provided for profit data for each marketing alternative.

Retaining ownership does require added management, marketing and communications time with custom feeding and cattle contract operators at each level of retained ownership.

Three levels of data required for projection decision aids for the three phases of dairy retained ownership. The **quick** analysis requires a minimum amount of data for critical reports. The second level is a detail production and economic **profit projected performance report**. The final decision aid **documents actual closeout results** to help evaluate decisions made and also select contracted or custom feeders. Closeout reports document the superiority of feeders produced to attract buyers who pay more for the dairy crossbred feeder cattle.

See appendix C, D and E for data needs for detailed benchmark performance reports.

1. **Day-old Calf Raising Phase of Retained Ownership**
   a. Quick Dairy Calf Raising Costs and Net Margin
   b. Dairy Calf Raising Profit Projection
   c. Dairy Calf Raising Lot Closeout

2. **Feeder Phase of Retained Ownership**
   a. Quick Dairy Feeder Costs and Net Margin
   b. Dairy Feeder Profit Projection
   c. Dairy Feeder Lot Closeout

3. **Finishing Phase of Retained Ownership**
   a. Quick Dairy Finishing Costs and Net Margin
   b. Dairy Finished Profit Projection
   c. Dairy Finished Lot Closeout

Appendix C: Retained Ownership Benchmarks

Feeder Cattle Benchmarks	Finished Cattle Benchmarks	
	Date of Analysis	
	Origin of Cattle	
Date of Analysis	Lot Number	
Prior Management	Feeder In Date	
Production System	Head In	
Breed	Breed	
Sex	Sex	
Source of Cattle	Sales Date	
Transferred to Feedyard or Sell	Head Out	
Production Measures Calculated	**Production Measures Calculated**	
Date In	Feeder In Payweight - Lb./Head	
Head In	Net Finished Out Payweight - Lb./Head	
Net Payweight In	Death + Railer Loss %	**Closeout Carcass Data**
Days Fed	Shrink When Sold %	Head Shipped - Formula Sales
Percent Death & Culling Loss	Net Payweight Gain	Average Net Payweight
Date Out	Days on Feed	
Head Out	Net Average Daily Gain - AGD	Carcass Weight
Market or Transfer Weight	**Closeout Measures**	Dressing % - Hot Yield
Shrink % on Sales	Dry Matter Conversion	**Quality Grade**
Net Sales Payweight	**Estimated Carcass Projections**	Choice or More
Net Gain Per Head Out	Yield - %	
Net Average Daily Gain (ADG)	**Carcass Weight - Hot Weight**	**Yield Grade**
Economic Measures Calculated		Yield Grade 1-2
Payweight Cost or Price In	**Calculated Economic Measures**	Yield Grade 4-5
Payweight Sales Price Out	Payweight Cost or Value In - $/Cwt.	**Quality Grade**
Price Roll Back	Net Payweight Net Sale Price - $/Cwt.	Prime
Cost of Gain	Feeder Cost to Finish Price Roll Back - $/Cwt.	CAB
Feeding	Feedyard Reported Cost of Gain - $/Lb.	Choice
Other Costs	Total Cost of Gain including Indirect Costs	Choice or More
Total Cost of Gain (COG)	Total Unit Cost (TUC) - $/Cwt.	Select
Value of Gain (VOG)	Value of Gain - $/Cwt.	No Roll
		Misc.
Total Unit Cost (TUC)	Marketing Margin	**Total**
	Feeding Margin	**Yield Grade**
Marketing Margin	Net Income	YG1
Feeding Margin		YG2
Net Income		YG3
		YG4
Return on Investment - ROI %	**Return on Investment - ROI %**	YG5

Appendix D: Data Needs to Measure Feeder Cattle Retained Ownership Profit

Custom Finishing Cattle		
Name of Input Data	**Units**	**Comments**
Description		Owners description
Lot Number		
Feedyard		Where the cattle will be sent.
Cattle Origin		
Sex		
Breed		
Prior Management		
Starting Date		Ending date is calculated
Number of Cattle In	**Lb./Head**	
Net Payweight In	**Lb./Head**	Feeder cost
Transportation to Feedyard	$/Head	
Net Payweight Cost In Per Head		
Net Payweight Cost in Per Cwt.		
Projected Cost Data		
Projected Cost of Gain-Gain	$/Lb.	Based on net gain
Processing and Medical	$/Head	Details will vary by custom feeder
Medicine	$/Head	
Other	$/Head	
Other	$/Head	
Futures/Options (+/-)	$/Head	
Indirect Costs		
General and Administrative	$/Head	Cattle owner data
Management Cost	$/Head	Cattle owner data
Finance Cost		
% Borrowed	%	
Interest Rate	%	
Dressing % or Yield	%	
Day-Old Calf Cost or Value if Sold	$/Head	This is the opportunity cost.
Marketing		
Date Marketed		Ending date is calculated
Weight Out	Lb./Head	
Death Loss (Net of Death Loss)	Head	Net weight is calculated
Shrink When Sold	%	
Gross Weight Before Shrink and Death Loss	Lb./Head	
Freight to Packer		
Miles	Miles	Feedyard has to supply this.
$/Mile	$/Miles	Truckers can tell you
Other Marketing Costs	$/Head	Check off is one example.

Appendix E: Data Needs to Measure Finished Cattle Retained Ownership Profit

Name of Input Data	Units	Comments
Feeder Cattle for Retained Ownership		
Description of Program		
Name of Input Data	**Units**	**Comments**
Description		Owners description
Start Date		Ending date is calculated
Category of Cattle		
Sex		
Breed		
Feeder Production Data		
Transfer In or Payweight In - Lbs.		Net weight in
Net Payweight Cost In $/Cwt.		
Delivery Cost- $/Hd.	$/Head	
Day-old Calf Initial Opportunity Cost	$/Head	
Projected **Net** Average Daily Gain lb.//Day		
Projected Gross Production Weight		
Death Loss %		
Direct Costs of Production		
Processing Cost $/Hd.		
Health &Treatment Cost/Hd.		
Other Costs		
Other Costs		
Processing, Health & Other Costs		
Feeding Cost		Will vary with contractor.
Head Days Fed		
Gain Cost -$/Day		
Cost of Gain $/Lb.		
Net Gain - Lbs.		
Record Verification Tag $/Hd.		
Other Costs - $/Head		
Total Direct Costs of Gain-$/Hd.		
Indirect Costs		
Calculated $/Day or		Owner management cost and G&A
Other Costs $/Head In		
Finance Cost - % Financed		
Interest Rate		
Marketing Data		
Shrink on Sale %		
Net Market Payweight		
Net Payweight Gain on Head Out - Lb./Hd.		
Gross Commodity Sales Price If Sold		
If Program Cattle Price Adjustment		
Price Premium - $/Cwt.		
Price Premium - $/Head		
Cattle Sales Price $/Cwt.		

Selling Costs When Sold		
Marketing Cost - Commission - %		
Checkoff - $/Head		
Freight & Marketing Cost - $/Head		

For References Information and Websites

Texas A&M University – Department of Agricultural Economics, Beef Cattle Decision Aids
http://agecoext.tamu.edu/resources/decisionaids/beef

Texas A&M University – Department of Animal Science
https://animalscience.tamu.edu/livestock-species/beef/

Price date and access to many supporting data information sites. Includes the beef cattle Futures market.
Jordan Cattle Auction - JordenCattle.com   Use **Links** to access many sites.

Weekly Report and Website – Comprehensive National Cattle News
         CattleFax - CattleFax.com

Sexing Technologies STgenetics   WWW.STGEN.COM