Thoughts Around Economics and Culling…

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A Few Key Fundamentals for Improved Dairy Profitability

- Optimize Cow Numbers
- Focus on Income over Feed Costs (IOFC)
- Produce Healthy Fresh Cows
- Minimize the Impact of Unprofitable Cows
- Cut Costs Intelligently

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Fundamental #1: Optimize Cow Numbers

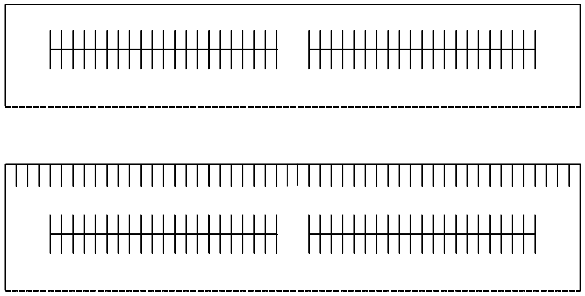
- In nearly all circumstances, dairy facilities should be run at full capacity in order to manage costs most efficiently
- Once farm "capacity" is defined, the first priority is to fill up the dairy with lactating cows
  - Anything less than capacity results in higher fixed cost per cow and raises the cost of production

Cow Slots

- A "slot" on a dairy is the space allocation for a single lactating cow
  - For a tie stall dairy – it is one stall
  - In a pasture dairy – depends on the rate of grass growth
  - For a free stall dairy – depends on many things:
    - # of beds in a pen
    - Amount of bunkspace
    - Amount of water access
    - Stage of lactation
    - Dairy preferences
    - Stocking density by pen

How Do We Express "Stocking Density"?

- Most commonly expressed as a percentage
  - Cows/feeding spots at the feed bunk
  - Cows/beds in a free stall system



Example:

- 2-row or 4-row
  - 100 cows
  - 102 feed slots (98%)
  - 80 stalls (125%)
- 3-row or 6-row
  - 130 cows
  - 102 feed slots (127%)
  - 131 stalls (99%)

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There is No Easy Way of Determining the "Correct" Number of Cow Slots on Most Dairies

- Typically, it is done partially based on recommendations and partially based on experience
- Example for a 1000-cow (milking) herd maintained in a 4-row freestall housing system:
  - Fresh cow pen: 90% of feed bunk space (5 in 10 headlocks)
  - High cow pen and AI pens: 100% of feed bunk space (5 in 10 headlocks)
  - Pregnant cow and late lactation pens: 120% of feed bunk space (5 in 10 headlocks)

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Cow "Slots"

- Once the dairy is "full", the goal is to fill each "slot" with the most profitable cow possible but first priority is to fill up the cow slots
- Revenue is very dependent on how many cows are in milk AND on what kind of cow fills each slot
- Some expenses depend significantly on what cow is in a slot
  - Variable costs
    - Feed costs
    - Replacement costs
- Some expenses are largely independent of what cow is in a slot
  - Fixed costs
    - Labor, mortgage, interest, utilities, etc.
  - The focus for these fixed costs should be on cost control and making sure that savings here have minimal impact on cows

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First Priority in Nearly all Circumstances… Fill up the available cow slots!

Assumptions: there are ~ 1000 cow slots for milking cows

	Current
Production	
Lb of milk/cow/day	77.0
# of Cows in Milk	900
Milk price, $/lb	$0.17
Expenses	
Lb of feed/lb of marginal milk	0.42
Feed price, $/lb DM	$0.115
Maintenance feed cost/cow/day	$2.51
Variable feed cost per cow/day	$3.72
Total feed cost/cow/day	$6.23
Non-feed variable cost, $/lb	$0.003
Fixed non-feed cost/day for herd	$6,750
Milk sales, $/cow/day	$13.09
Fixed expenses, $/cow/day	$7.50
Variable expenses, $/cow/day	$6.46
Net income, $/cow/day	-$0.87
Net income, $/herd/day	-$780
Breakeven milk price, $/cwt	$0.181

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Fundamental #1: Optimize Cow Numbers – Summary

- Often difficult to accurately determine the true, optimal cow capacity (or number of slots)
- Fixed costs are largely independent of which cow is in the slot
- Variable costs very much depend on which cow is in the slot
- First priority: fill up the dairy to dilute fixed costs and improve profit potential
  - Then, work to improve the quality of each cow in each slot

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Fundamental # 2: Focus on Income over Feed Cost (IOFC)

- The single largest variable cost is almost always feed cost
- Income over feed cost has four components:
  - Price (value) of milk
  - Volume of milk produced
  - Feed cost/lb dry matter
  - Amount of feed consumed
- To calculate IOFC:
  - (Volume of milk X price of milk) – (Feed cost X feed intake)
  - (77 lb X $0.17/lb) – ($0.115/lb X 53 lb) = $7.00

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Fundamental # 2: Focus on Income over Feed Cost (IOFC)

- IOFC =

  (Volume of milk X price of milk) – (Feed cost X feed intake)

- To increase IOFC:
  1. ***Increase Volume Of Milk Produced***
  2. Increase value of milk produced (higher fat or protein, lower somatic cells or bacteria to capture premiums, etc)
  3. Sometime, may be able to lower feed costs but must do so wisely
  4. NEVER restrict feed intake to try and increase IOFC in lactating cows

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Concept of Marginal Milk

- Marginal milk refers to the additional incremental milk that is produced
  - Could be at the herd level
    - Example: add more cows (and increase total milk produced)
  - Could be at the cow level
    - Example: improve feed delivery or cow comfort resulting in greater feed intake and more milk produced per cow
- Feed cost contains two components:
  - Maintenance feed cost
  - Marginal feed cost
- As milk production increases per cow, the marginal feed cost increases but the maintenance feed cost remains the same (all else equal)

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- When estimating the cost of incremental milk and feed, we do not have to consider maintenance feed - we only have to account for the energy required to produce the marginal milk
- To produce 1 liter of milk with 3.8% fat, 3.1% protein, and 4.8% lactose:
  - Each gram of fat requires 9.3 kcal gross energy: 38 g milk fat * 9.3 = 353 kcal
  - Each gram of protein requires 5.5 kcal gross energy: 31 g protein * 5.5 = 171 kcal
  - Each gram of lactose requires 4.0 kcal gross energy: 48 g lactose * 4.0 = 192 kcal

    Total 716 kcal
- 716 kcal/ liter (or 321 kcal NE / lb) = 0.33 Mcal NE_L/lb marginal milk
- If TMR = 0.78 Mcal NE_L/lb, 1 lb TMR DM supports 0.78/0.33 = 2.42 lbs milk
- If feed cost = $0.12/lb, 1 lb marginal milk = $0.12/2.42 = $0.05 feed cost

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The Value of Incremental (Marginal) Milk

Economics of Marginal / Incremental Milk

Assumptions:

Production	Current	Scenario A	Scenario B
Pounds of milk/cow/day	76.0	80.0	90.0
Milk price, $/cwt	$16.50		
Expenses			
Pounds of feed/lb of milk	0.42		
Feed price, $/lb DM	$0.120		
Variable feed cost per cwt of milk	$5.04		
Other cost of marginal milk, $/cwt	$0.50		
Variable cost per cwt of milk	$5.54		
Fixed cost per cow per day	$9.00	$9.00	$9.00
Milk sales, $/cow/day	$12.54	$13.20	$14.85
Fixed expenses, $/cow/day	$9.00	$9.00	$9.00
Variable expenses, $/cow/day	$4.21	$4.43	$4.99
Net income, $/cow/day	-$0.67	-$0.23	$0.86
Breakeven milk price, $/cwt	$17.38	$16.79	$15.54

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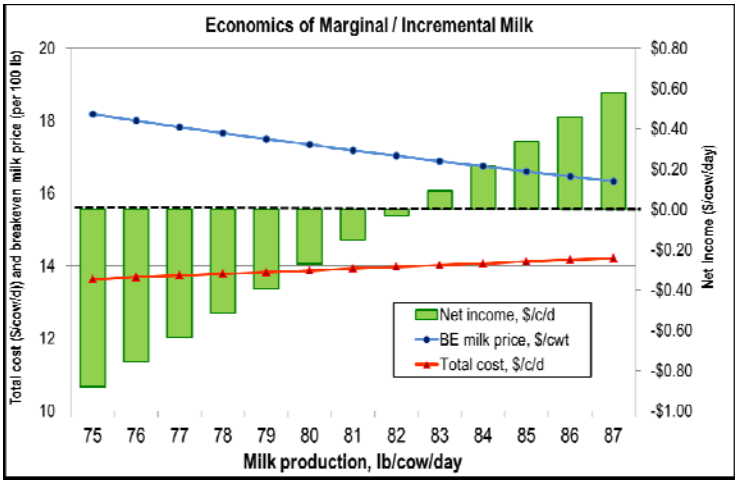

- As production increases from 75 to 87 lb/cow/day:
  - Total cost increases ($13.63 to $14.21/cow/day)
  - Breakeven milk price decreases ($18.17 to $16.33/ cwt)
  - Net income increases (-$0.88 to $0.58/cow/day)

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Fundamental # 2:
Focus on Income over Feed Cost (IOFC) - Summary

- Feed cost is almost always the largest variable cost of production
- Work to improve IOFC primarily by increasing milk production – within a given set of circumstances, more milk is almost always more profitable
- Increasing marginal milk production (more milk/cow/day) leads to greater profitability:
  - Raises net income per cow
  - Lowers cost of feed per unit of milk (dilutes maintenance feed cost)
  - Lowers breakeven cost of production

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Fundamental #3: Produce Healthy Fresh Cows

- Cows experience many challenges when transitioning from non-lactating (dry) stage through calving and into lactation
- Much management attention and effort should be devoted to minimizing disease risk in these cows
- Consultants can play key roles in improving preventive strategies and monitoring progress towards improved profitability

Management in the Vital 90™ Days is Critical: *RISK, COSTS, and OPPORTUNITY*

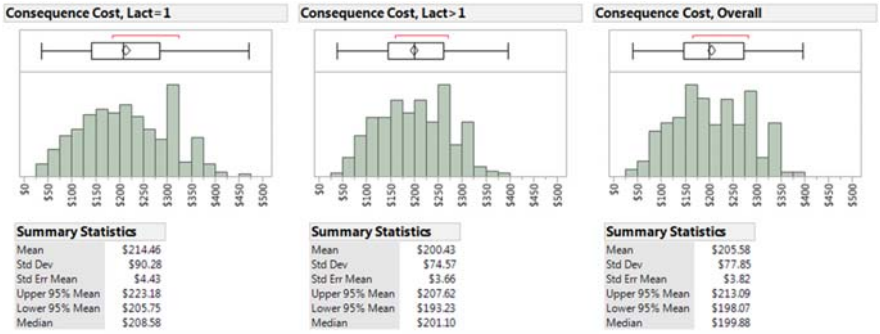
- *RISK*
  - The metabolic adaptation required for a successful new lactation is extraordinary
  - ALL transition dairy cows experience negative nutrient balance and immune dysfunction
  - Many adult dairy cow diseases are related to this challenge
  - 45-60% of cows experience one or more of the common transition cow problems such as metritis, mastitis, retained placenta, milk fever, etc[1]
  - Energy balance and immune dysfunction are at the root of these diseases

[1]Santos et al, Proc. 2013 Dairy Cattle Reproduction Council Conference, Indianapolis, IN, p 32-48 .

Consequence Costs During The Vital 90 Days

(Disease, Lost Milk, Culling Losses, Mortality Losses, Reproductive Losses)

The following information was based on 415 economic assessments performed between September 2013 and May 2016 by 107 consultants on herds across three global regions: North America, Latin America and Europe. More than 50% of the assessments (224) were performed in 2016.



Overton, M. W. 2016. Evaluating Periparturient Disease Costs in Dairy Cows Using dEconPro™in Poster abstract in proceedings of the XXIX World Buiatrics Congress, Dublin 2016.

Management in the Vital 90™ Days is Critical: *RISK, COSTS, and OPPORTUNITY*

- Opportunity:
  - With improved risk management and disease prevention efforts during The Vital 90 Days…
    - Reduced disease incidence
    - Lower treatment costs
    - Reduced mortality and culling
    - Higher milk production throughout lactation
    - Opportunity for improved reproductive performance
- Healthier transition cows = greater profit potential

Fundamental # 4:

Minimize the Impact of Unprofitable Cows

- Each dairy has an optimum inventory of cows that will optimize profitability
- Goal should be to fill each slot on a dairy with the cow that will make the dairy as profitable as possible
  - Much of the time, this means keeping the current cow (to dilute investment in replacement costs)
  - Other times, this means replacing the cow with one that is expected to be better (currently and over her lifetime)
- Key question: Is the value this slot brings to the dairy greater if I keep the *current cow* or if I replace her with an *average replacement heifer?*

Now or Later…Culling Happens

- The replacement of cows within a herd is inevitable
- Culling decisions are influenced by many things including:
  - Cow management
  - Disease management
  - Risk tolerance and management
  - Economics
    - Real economics – heifer vs. market cow values, milk price, treatment costs, etc.
    - Milk price – as milk price declines, all else equal, the target milk level (lb/cow/day) for culling declines
      - IOFC declines which makes it harder to pay the replacement cow cost

What is the "Correct" or Optimal Herd Turnover Rate?

- There is no such thing as a single optimal herd turnover rate for dairies
- It is also not true that a lower rate is always better
- Each cow should be an independent, economic decision
  - Evaluate each cow on a regular basis – am I better off with this cow or her replacement?
- Goal: Keep each slot filled with the best/most profitable cow that you can

What are the "Causes" or Contributing Factors for Culling in Dairy Herds?

What are some characteristics you commonly see in herds with higher levels of culling?

Characteristics of Herds That Have Higher Annual Turnover Rates…

- Usually have better reproductive performance in the cow herd
- Produce more replacement heifers (more efficient with "turning the system")
  - More heifers calving (coming into a herd without expansion in cow numbers) means more cows leaving the herd as culls
- Have higher milk production

- Higher herd turnover or culling risk ≠ synonymous with more sick or lame cows

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Herd Turnover Discussion

- What happens if springing heifers (replacements) are notably more expensive?
  - Does culling rate increase or decrease? Why?
- If milk price increases significantly (and is expected to stay high for a while), does culling increase or decrease?
  - Why?
  - Do you think herd turnover will be higher or lower than last year?
- What happened to herd turnover when beef cow prices were more than $1.00/lb?
- Culling at a herd level is fundamentally driven by economic and supply conditions

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Thoughts about Culling

- At the single herd level:
  - Starting inventory
  - + New heifers calved (home raised or purchased)
  - — Culls
  - = Ending inventory
- If the herd is fairly stable, the herd turnover is about the same as the number of heifers available to calve, whether home raised or purchased

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Convenience Sample from 7 Holstein Herds Across the US

		Herds							
Source	Measure	1	2	3	4	5	6	7	AVG
(EVENTS)	# Fresh	3270	1410	1832	6268	3247	6600	7058	4241
(EVENTS)	# Sold	1083	328	612	2041	1141	2202	2794	1457
(EVENTS)	# Died	185	103	35	225	167	569	391	239
	Total Culls	1268	431	647	2266	1308	2771	3185	1697
(ECON\ID)	Avg Inventory (M & D)	3140	1273	1717	5711	3011	6498	6451	3972
	Calculated Herd Turnover	40%	34%	38%	40%	43%	43%	49%	41%
	Mortality Risk	6%	8%	2%	4%	6%	9%	6%	6%
(EVENTS)	# Lactation = 1 Fresh	1198	529	650	2374	1308	2358	2644	1580
(ECON\ID)	Lactation = 1 Avg % of Herd (M & D)	42%	42%	38%	42%	43%	36%	41%	41%
	Fresh Events Over Avg Inventory	104%	111%	107%	110%	108%	102%	109%	107%

- Variation across herds but in general, # of first lactation animals coming into a herd = # of cull cows leaving herd
- Large factor is stable herd vs. herd expansion

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Benchmarking: How Does Culling on "My" Dairy Compare to Others?

- When people ask this question – what are they really asking?
  - Am I culling too much?
- The reason for asking is understandable, but the answer is complicated and comparing between herds may not be helpful
- For example: comparing sold and dead in the first 30 DIM
  - Herd A is close to a slaughter market and is very risk averse regarding cow mortality
  - Herd B does NOT have the same slaughter options and works hard in effort to "save" more cows
    - Which one will have the higher mortality, assuming equal disease risk?
    - Which one will have the higher percent sold, assuming equal disease risk?

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Benchmarking: How Does Culling on "My" Dairy Compare to Others?

- Culling is fundamentally a cow-level economic decision
- Culling rates (herd turnover) vary between herds for both "good" and "bad" reasons:
  - Different economic conditions
  - Different health events
  - Different reproductive performance and heifer availability, etc.
- Often, a better question is - Am I culling too little?

- How many of your clients ask THAT question?

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In My Opinion, There Is No Single Number That Can Measure Whether Culling On A Particular Dairy Is "Good" Or "Bad"

- There are strong economic (and ethical) incentives to reduce the rate at which cows lose value on a dairy and deserve to be culled
  - Good management seeks to mitigate and reduce those things that cause the value of a cow to decline
  - Ex: mastitis, metritis, lameness, DA, poor repro performance, etc.
- I much *prefer* to monitor transition disease issues and management factors that might contribute to them vs. measuring sold and dead cows AFTER the fact

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Estimating Herd Turnover

- My approach to estimating herd turnover:

$$\frac{\text{\# of Culls (sold + died)}}{\text{Average Population at Risk (Milking + Dry)}}$$

This should be ~ equal to the following:

$$\frac{\textit{\# of New Cows Entering Herd (Calving + Purchases)}}{\textit{Average Population at Risk (Milking + Dry)}}$$

- Average population at risk estimation approach if the actual number by week or month is not available:

$$\frac{\text{(Initial population + Final Population)}}{2}$$

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What Should the Target Milk Level Be for Culling a DNB? (Culling with Replacement)

- Some people think: "As long as the cow is covering her costs, why cull her?"
  - "Breakeven" level of production: Revenue = Cost

Milk(lb) * Milk price/lb = (Maintenance feed(lb) + Marginal feed(lb)) * Feed cost/lb

(Where, Marginal feed = Milk (lb) * 0.47[1])

  - Simplified to:

$$\frac{\text{[Maintenance feed cost]}}{\text{[Milk price – marginal feed cost (per lb marginal milk)]}} = \text{Breakeven milk/d}$$

([1]Note: Ordinarily, this value is ~0.42 lb DM/marginal lb of milk, but in this case, a cow that is in later lactation is producing milk with higher solids)

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What Should the Target Milk Level Be for Culling a DNB?

- Assumptions:
  - Maintenance energy requirement of ~16-17 Mcal NE_L/day
    - Maintenance requirements = 20 lb of feed if energy density = 0.78 Mcal NE_L/lb
  - It takes 0.47 lb feed dry matter to make 1 lb marginal milk (with higher solids)
  - Milk is $0.17/lb; lactating feed cost = $0.115/lb DM
  - "Breakeven" level of production:

$$\frac{\text{[Maintenance feed cost]}}{\text{[Milk price – marginal feed cost (per lb marginal milk)]}} = \text{20 lb milk/day}$$

- As milk price increases (decreases), the level of milk that a cow must produce to pay her variable costs decreases (increases):
  - At $0.22 milk, breakeven = 14 lb/day
  - At $0.14 milk, breakeven = 27 lb/day

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In the Previous Example,

- Culling level of production for current example cow = 20 lb/day
- This approach focuses on trying to keep a cow as long as possible to derive as much profit from a *SPECIFIC* cow as possible
- Assumes:
  - No replacements are available or producer is unwilling/unable to buy one
  - Or, bad decision making…
- This approach is correct IF the alternative is an empty slot but a very expensive one if a replacement animal is available
  - Exact loss depends on how long the current cow is kept…
- BUT…is this really the decision that we want the dairy to make?

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When to Replace a Cow That Has Been Identified for Culling

	Current Cow	Replacement
Projected 305d Milk, lb (lactation = 1)	xxx	24,000
Milk, lb/day	55.0	66.0
Milk, $/lb	$0.19	$0.17
Value, $/head	$750	$1,800
Annual herd turnover		35%
Expected life		2.9
Annual mortality risk		7%
Interest		8%
Maintenance feed, lb/day	20.0	20.0
Marginal milk feed, lb/lb of milk	0.47	0.42
Feed, lb	45.9	47.7
Feed, $/lb	$0.12	$0.12
Feed, $/day	$5.50	$5.73
IOFC	$4.95	$5.50
Replacement cost, $/day	$0.00	1.22
IOFC (incl. repl cost), $/day	$4.95	$4.27
Breakeven milk, lb	18.0	
Decline in milk/day, lb	0.17	
Days to breakeven	218	
Target level of milk to replace (lb/day)	49.9	
Target level of days to replace	29.7	
'Lost' IOFC if sold at breakeven milk. $/hd	$401.90	

- If the dairy kept the current cow until she reached her predicted absolute “breakeven”, it lost ~$400 of IOFC relative to replacing her at the target milk level

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Culling Considerations for Cows within Herds

- Healthy, fresh or pregnant cows, adequate milk production – no consideration of culling these…
- Cows that are not pregnant and already designated as DNB (do not breed):
  - Regardless of previous level of production, once below "target milk", strong consideration for culling
- Cows in breeding population: "How long do I keep trying to breed this cow?
  - Examine previous production history
  - Project when this cow will drop below target milk level
  - Estimate last day to breed and once past this day, make her a DNB and handle as above
- Low producing cows or cows with health problems
  - First, decide: do I really want to keep these cows?
  - If not, make them DNB and compare to target milk as above
  - Sometimes, this actually includes pregnant cows

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Fundamental # 4:

Minimize the Impact of Unprofitable Cows - Summary

- Culling cows prematurely is very costly
- However, failing to cull cows appropriately is also costly
- Generally, it is easy to estimate the breakeven point for an individual cow's profitability but this is not the desired approach
  - Simply too much lost opportunity due to keeping cow too long
- Carefully evaluate cows in herd on regular basis
- Stop breeding future cull cows
- Target milk for replacement is usually much higher than expected

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Fundamental # 5: Cut Costs Intelligently

- Ask yourself this question: "If I cut this cost, will the cow feel it?"
- In other words, if I reduce "X", does it negatively impact the health, comfort, or productivity of my cows now or in the future?
  - Eliminating bedding in cubical housing systems may cut costs now but will lead to more lameness, more mastitis, more standing and less milk production
- Fishing without bait lowers the cost of fishing but who does this???

Cost Cutting, Profitability and Reality

- Cost control is critically important to dairy farm profitability, BUT:
  - Any proposed solution to survival during tough economic times that is based on cost control *alone* is doomed to failure.
  - In general, dairies have been working to control costs for a long time and probably do a good job of it (mostly).
- Looking back in the US dairy industry, 2009 was a particularly painful year
- What did producers do then in an effort to survive dreadfully low milk prices?

What Did Dairies in Minnesota and Wisconsin Do in 2008 to 2009?

	2008	2009	2008 to 2009
Avg. milk price per cwt.	$19.44	$13.54	-30.3%
Net return	$511.19	-$210.81	-141.2%
Misc costs:			
Feed cost per cow	$1,748.02	$1,567.50	-10.3%
Feed cost per day	$4.79	$4.29	-10.4%
Feed cost per cwt of milk	$8.20	$7.35	-10.4%
All labor	$1,748.02	$1,567.50	-10.3%
Breeding fees	$42.43	$36.48	-14.0%
Veterinary	$112.25	$98.90	-11.9%
Supplies	$187.03	$165.40	-11.6%
Fuel & oil	$102.75	$63.87	-37.8%
Repairs	$130.18	$104.73	-19.5%
Total variable expenses	$2,654.86	$2,365.80	-10.9%

- Net returns dropped 141%
- Feed costs and total variable costs dropped 10-11%
- Simply can't cut your way to profitability during extreme economic times

https://finbin.umn.edu/FinB.dll/generate?RecId=370317, information from 2008-2010 for WI and MN dairies, last accessed 9/19/16

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Cut Costs Intelligently

- During very difficult financial times, probably wise to delay major capital improvements but don't neglect routine maintenance of existing equipment
- Consider alternative sources/buying options for feeds to help reduce costs
- Consultants often suggest cutting certain feed additives during tough economic conditions BUT, if they were not profitable before, why were they being fed???
- Cutting feed costs sounds great but must be done with extreme caution
  - Feeding lower cost feeds can lead to lower milk production, more than offsetting any feed cost savings

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Consider Three Contrasting Scenarios

Scenario	A Current Level of Milk Production	B 2 lb Increase in Milk/Cow	C Lower Feed Cost & Quality
Average number of milking cows	1000	1000	1000
Milk price ($/lb)	$0.18	$0.18	$0.18
Feed cost per lb of total ration dry matter	$0.12	$0.12	$0.105
Energy density of total ration (Mcal NE_L/lb)	0.78	0.78	0.74
Energy required to produce 1 lb marginal milk	0.33	0.33	0.33
Feed intake (lb dry matter/day)	54.4	55.2	54.4

Which is likely to be the most profitable?

- A – average milk is 80 lb/cow/day
- B – average milk is 82 lb/cow/day
- C – 10% lower feed cost (and quality)

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Consider Three Contrasting Scenarios

Scenario	A Current Level of Milk Production	B 2 lb Increase in Milk/Cow	C Lower Feed Cost & Quality
Average number of milking cows	1,000	1,000	1,000
Lb of milk/cow/day	80	82	73.6
Milk price ($/lb)	$0.18	$0.18	$0.18
Milk sales, $/cow/day	$14.40	$14.76	$13.24
Assumptions (Inputs):			
Feed cost per lb of total ration dry matter	$0.12	$0.12	$0.105
Variable feed required, lb of feed DM/lb of milk	0.42	0.42	0.45
Fixed costs for dairy, $/cow/day (facilities, taxes, etc)	$7.50	$7.50	$7.50
Non-feed variable cost, $/cwt	$0.55	$0.55	$0.55
Fixed feed (maintenance, activity), lb/cow/day	20.5	20.5	21.6
Feed intake (lb dry matter/day)	54.4	55.2	54.4
Expenses			
Non-feed variable cost, $/cow/day	$0.44	$0.45	$0.40
Feed Costs			
Fixed feed cost, $/cow/day (maintenance)	$2.46	$2.46	$2.27
Variable feed cost, $/cow/day (milk production)	$4.06	$4.16	$3.44
Total feed cost, $/cow/day	$6.52	$6.62	$5.71
Income Over Feed Cost	$7.88	$8.14	$7.54
Total cost (fixed, non-feed variable, & feed)	$14.46	$14.58	$13.61
Net income, $/cow/day	-$0.06	$0.18	-$0.37
Net income, $/dairy/day	-$63	$184	-$369

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Fundamental # 5: Cut Costs Intelligently - Summary

- Cost control is very important to dairy farm profitability, but any proposed solution to survival during tough economic times that is based on cost control *alone* is doomed to failure.
- Cutting feed costs simply to lower the total cost of production is NOT the answer
  - Some opportunities might exist to lower feed costs but
  - Large scale cuts likely lead to reductions in milk production, negating any planned benefit

Overall Summary

- Market variability is significantly higher today than in the past
- In commodity markets, being low cost *per unit of production* is critical to business survival
- Five important fundamentals for consideration regarding the economic performance of dairies:
  - Optimize Cow Numbers
  - Focus on Income over Feed Costs (IOFC)
  - Produce Healthy Fresh Cows
  - Minimize the Impact of Unprofitable Cows
  - Cut Costs Intelligently
- Cutting expenses is good as long as it does not reduce milk production
  - The goal should be to reduce cost/cwt of milk produced NOT cost/cow

Thanks For Your Attention!

Questions?

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