

Feeding Options with Today's Economics

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Feeding Options With Today's Economics Four State Dairy and Management Conference June 14, 2019



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Holstein Component Profile by Days in Milk and Lactation Number

Lact #	Milk (lbs)	Fat %				Fat/Prot	Protein %				Milk (kg)
		1-40	41-100	101-199	200-305		1-40	41-100	101-199	200-305	
1	19,000	2.9%	3.0%	3.5%	3.7%	1.32	2.2%	2.4%	2.8%	3.0%	8,618
	23,000	3.4%	3.3%	3.6%	3.8%	1.36	2.5%	2.6%	3.0%	3.1%	10,433
	26,000	3.8%	3.5%	3.6%	3.9%	1.36	2.8%	2.8%	3.0%	3.2%	11,793
	30,000	3.9%	3.5%	3.6%	3.8%	1.34	2.9%	2.8%	3.0%	3.2%	13,608
2	19,000	2.9%	3.1%	3.5%	3.7%	1.26	2.3%	2.5%	2.9%	3.1%	8,618
	23,000	3.3%	3.3%	3.6%	3.8%	1.32	2.5%	2.6%	3.0%	3.2%	10,433
	26,000	3.7%	3.4%	3.6%	3.8%	1.32	2.8%	2.8%	3.0%	3.2%	11,793
	30,000	3.8%	3.4%	3.5%	3.8%	1.31	2.9%	2.8%	3.0%	3.2%	13,608
3+	19,000	3.5%	3.4%	3.6%	3.8%	1.35	2.6%	2.6%	2.9%	3.1%	8,618
	23,000	3.7%	3.4%	3.6%	3.8%	1.37	2.7%	2.7%	3.0%	3.2%	10,433
	26,000	3.9%	3.4%	3.6%	3.8%	1.39	2.8%	2.7%	3.0%	3.2%	11,793
	30,000	4.0%	3.4%	3.5%	3.7%	1.38	2.9%	2.8%	3.0%	3.2%	13,608

* 19,000 RHA n=1,014 herds; 23,000 RHA n=1,998 herds; 27,000 RHA n=1,022; 30,000 RHA n=292 herds

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Finding 65 cents per 100 pounds of milk

- Genske, Mulder & Co Certified Public Accountants
- First nine months of 2018
 - Arizona: -15.2% margin; loss of \$1.3 million
 - Upper Midwest: -11.4% margin, loss of \$781,761
 - Northeast: -21.4% margin; loss of \$803,243

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Option 2: Marginal Dry Matter Intake

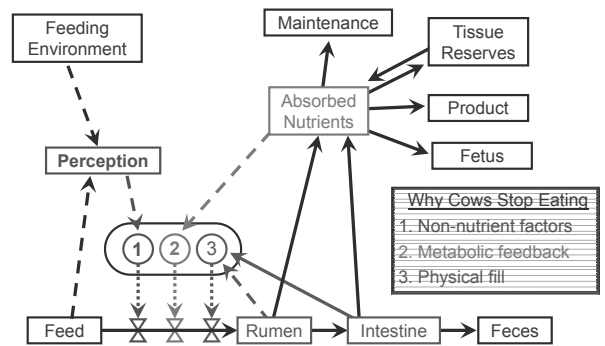
- Last pound of dry matter consumed can support two plus pounds of milk
- A pound of dry matter costs 10 cents
- Two pounds of milk worth 30 cents at 15 cents a pound
- Profit is **20 cents** per pound of dry matter or per cow per day

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Option 1: Building Your Milk Check

- Improving milk components
 - Milk fat is valued at \$2.51 per pound
 - Milk protein is valued at \$1.14 per pound
- Fat test increase of 0.2 point (3.7 to 3.8) leads to 0.1 pounds more milk fat times \$2.51 leads 25 cents per cwt or **20 cents** per cow per day at 80 pounds of milk

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Milk Fat and Milk Protein Relationship

(Hoard's Dairyman—August 2018)

	Fat %	Protein %	Protein vs Fat	Fat vs Protein
Ayrshire	3.89	3.14	81%	1.23
Brown Swiss	4.05	3.32	82%	1.22
Guernsey	4.56	3.35	73%	1.36
Holstein	3.81	3.06	80%	1.24
Jersey	4.89	3.70	75%	1.32

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2018 U.S. Feed Additive Use

2018 Hoard's Market Survey

Buffers	38
Yeast/yeast culture	29
Rumensin	24
Mycotoxin binders	24
Probiotics	11
Niacin	10
Omnigen	8
Don't use	7
Feed bunk stabilizer	2

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Benefit to Cost Ratios

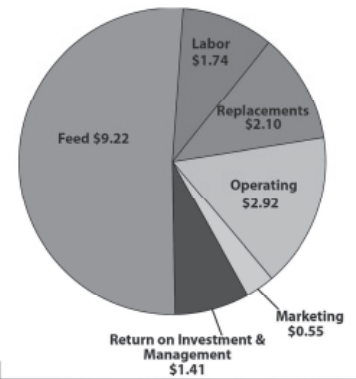
Buffers	8 : 1
Biotin	7 : 1
Yeast products	5 : 1
Ionophores	5 : 1
Silage inoculant	3 : 1
Rumen protect choline	3 : 1

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Cost Comparison

Summary

(Cost per cwt)



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Additives Recommended for Lactating Cows

- Rumen buffers—save 6 cents per cow
- Yeast culture/yeast products—save five cents per cow
- Monensin (Rumensin)—save 3 cents per cow
- Silage inoculants—save 3 cents per cow
- Biotin—save 4 cents per cow
- Organic trace minerals—save 10 cents per day

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Twenty Percent Extra Heifers on Farm

- California data: Cost is \$2.10 per cwt of milk
- Assume the 20% value is on your farm
- 20% of \$2.10 is 42 cents a day

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Hutjens Priority

- 1 Rumensin
- 2 Silage inoculants
- 3 Organic trace minerals (Zn, Se, Cr, & Cu)
- 4 Yeast and yeast culture
- 5 Sodium bicarb/S-carb
- 6 Biotin

Rumen impact

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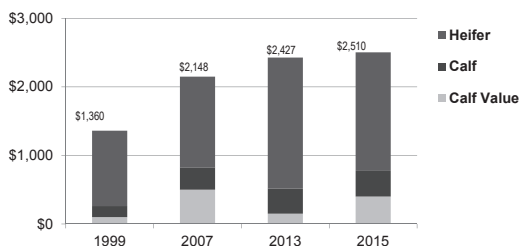
Raising Heifers is Not a Profit Center

Cost to raise heifers is >\$2,000 than current market prices

- Number of heifers needed:
 - Culling rate
 - Death losses of heifers
 - Calving interval
- Tools:
 - Genomics (find the best ones)
 - Sex semen (get heifers from the best genetics)
 - Beef crossbreeds (premium +\$150, calving ease, and healthy of calves)

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Total Cost to Raise a Dairy Replacement from Birth to Freshening



NDFD: An Index of Dry Matter Intake

One unit change in NDFD equals

- 0.26 lb. of Dry Matter Intake
- 0.47 lb. of Fat Corrected Milk



Increase Forage NDFD Two Units

- Total forage program increased from 55 to 57 percent
- May lead to 0.94 pounds more milk
- Added income is **15 cents per day**

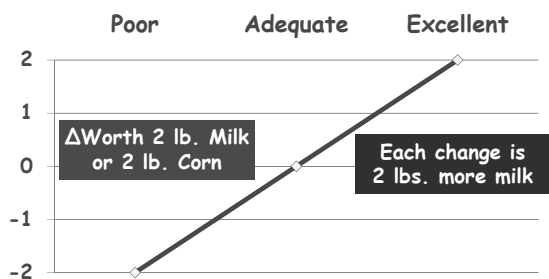
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Defining Shrink

- **The quantity of feed fed that the cow doesn't eat**
- **Varies from 1 to > 20% of available feed**
- **Cost 10 cents to 15 cents per cow per day**

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Kernel Processing Score



RD Shaver UW-Madison

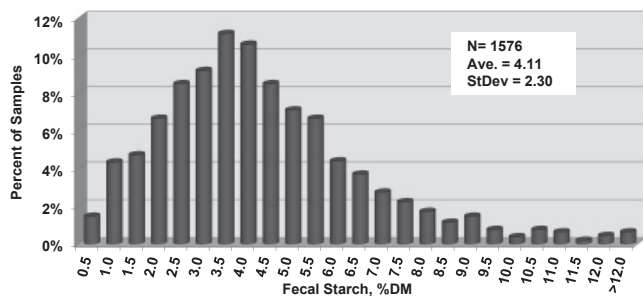
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Shrink Areas of Focus

- Forage management
- Pre-blending concentrates
- Weigh backs
- Reducing feed variation
- TMR mixing strategies (precision blending)
- Storage (bags, vertical storage, etc)
- Tracking inventory

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(CVAS, 2017)



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Weigh Back Considerations

- 1-2% of total dry matter offered (steers 1st choice)
- > 5% weigh backs must go to cows
- 50% of feed available at each feeding with 2x delivery
- Evaluate sorting (+/- 5% each box)
- Remove each day (each feeding)
- Feed costs savings: 50 lb DMI times 2% equal 1 pound DM or 10 cents per cow

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Change Kernel Processing Score

- Shift from 61 to 71 score results in two pounds more milk
- Results in **32 cents** per cow per day
- Lower fecal starch from 7 percent to 5 percent leads to 1.3 pounds of milk
- Results in **20 cents** more per cow
- These values could overlap

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Grouping Systems increase IOFC

1. **Fresh (3wk) vs. all other cows**
 - Fresh diet can be very expensive
 - May have carry over effects
 - May increase peaks
2. **Two year old vs. older cows**
 - Diets can be identical
 - Increase production of 2 yr olds

Many Grouping Systems increase IOFC

3. Group by production

- Diets formulated for each group
- Targeted use of additives
- Forage quality inventory management

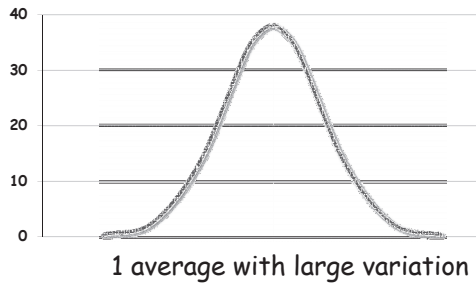


Comparing Ration Costs with Various Forage Programs

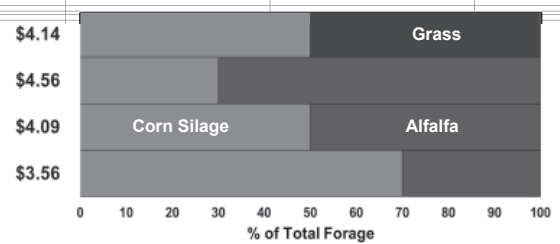
- Used the 2018 forage costs (purchase/market prices)
- Rations balanced for energy, RDP, RUP, and fiber
- Milk yield was 70 pounds of milk
- No minerals, vitamins, or additives were added or balanced

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Grouping by Production (80 lb average)

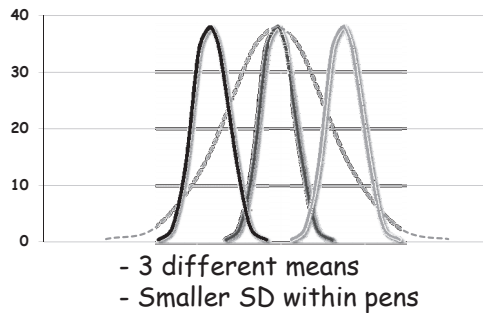


Economics of Forage Feed Costs Per Day (70 pounds of milk, 2018 Feed Prices)



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Grouping by Production



Feed Benchmarks 2019

Feed costs per cow per day	\$5.01	
Feed cost per lb DM	\$0.10	
	Milk Production	
	80 lb	70 lb
Feed cost per cwt milk	\$6.26	\$7.16
Income over feed costs / cow (\$16)	\$9.74	\$8.84
Feed efficiency (kg milk/kg DM)	1.6	1.4

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Formulating for Groups

1 group (mean = 75 lbs, SD = 13)

Protein for 75 + 13 = 88 lbs

3 groups

Low (mean=60 lbs, SD = 4)
MP for 64 lbs

Mids (mean = 75 lbs, SD =5)
MP for 80 lbs

Highs (mean = 90 lbs, SD =6)
MP for 96 lbs

Avg = 80 lbs

Economics of Feed Efficiency

(70 lb milk, 10 cent lb DM)

Feed efficiency (lb milk/lb DM)	DMI (lb/day)	Difference (savings/day)
1.40	50.0	\$0.34
1.50	46.6	\$0.28
1.60	43.8	

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Milk Yield Targets (Ohio State University)

Milk Yield (lb)	Feed efficiency
60	1.32
65	1.38
70	1.44
75	1.49
80	1.54
85	1.58
90	1.63

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Take Home Messages

- Can you find 65 cents per cow per day?
- A business focus on feed decisions
- Listen to your cows
- Use available tools to evaluate your feeding program

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