

Hoard's Dairyman Webinar

“New dairy software tools and they’re free”



Presenter: Victor Cabrera
University of Wisconsin

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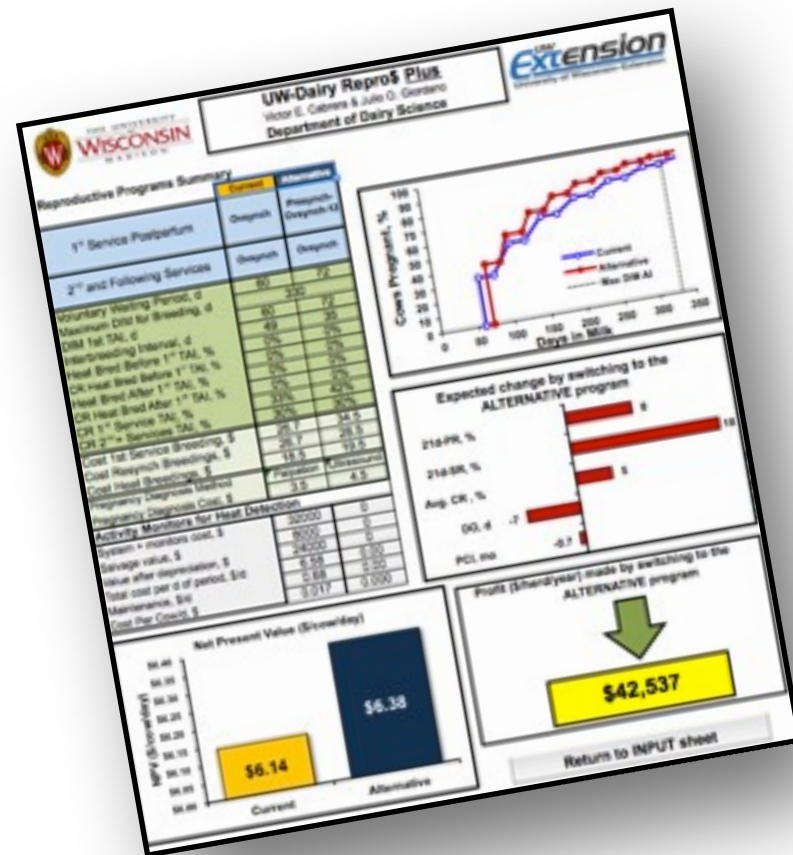


Animal Nutrition



Host: Mike Hutjens
University of Illinois

February 11, 2013



Free New Dairy Management Software Tools

Victor E. Cabrera
University of Wisconsin-Madison

UW-Dairy Management

DairyMGT.info

Google: Dairy Management

Dairy Management UW-Extension
University of Wisconsin-Madison

THE UNIVERSITY OF WISCONSIN MADISON **UW Extension**

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Dairy Management

Dairy Management site is designed to support dairy farming decision-making focusing on model-based scientific research. The ultimate goal is to provide user-friendly computerized decision support systems to help dairy farms improve their economic performance. Dr. Victor Cabrera focuses on model-based decision support in dairy cattle and in dairy farm production systems. Dr. Cabrera's primary interest is to improve cost-efficiency and profitability along with environmental stewardship in dairy farms by using simulation techniques, artificial intelligence, and expert systems. Dr. Cabrera's research and Extension programs involve interdisciplinary and participatory approaches towards the creation of user-friendly decision support systems. As an Extension Specialist, Dr. Cabrera works in close relationships with county-based Extension faculty, dairy producers, consultants, and related industry.

Latest Projects

- Genomic Selection and Herd Management
- Dairy Reproduction Decision Support Tools
- Strategies of Pasture Supplementation
- Improving Dairy Cow Fertility
- LGM-Dairy

UW

- University of Wisconsin - Madison
- UW - Cooperative Extension
- UW - Dairy Science
- Understanding Dairy Markets
- UW Dairy Nutrient
- UW Center for Dairy Profitability


Dairy News

- UW-Extension Dairy News

Helpful Link

- Repro Money Program

Contact

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Professional Page

Victor E. Cabrera, Ph.D.

Admin Portal
Click Above to reach the Administrator Portal.

TOOLS

Dairy Management Tools
Click to find out more about tools provided by DairyMGT

READ MORE

This website is mobile compatible.

Feeding

- FeedVal 2012
- Grouping Strategies for Feeding Lactating Dairy Cattle
- Optgen® Evaluator
- Income Over Feed Supplement Cost
- Dairy Extension Feed Cost Evaluator
- Corn Feeding Strategies
- Income Over Feed Cost
- Dairy Ration Feed Additive Break-Even Analysis

Heifers

- Cost-Benefit of Accelerated Liquid Feeding Program for Dairy Calves
- Economic Value of Sexed Semen Programs for Dairy Heifers
- Heifer Replacement
- Heifer Break-Even

Reproduction

- UW-DairyReproPlus: A Reproductive Analysis Tool that Includes Heat Detection Devices
- Economic Value of Sexed Semen Programs for Dairy Heifers
- UW-DairyRepro: A Reproductive Economic Analysis Tool
- Exploring Timing of Pregnancy Impact on Income Over Feed Cost
- Dairy Reproductive Economic Analysis

Production

- Milk Curve Filter
- Decision Support System Program for Dairy Production and Expansion
- Economic Analysis of Switching from 2X to 3X Milking
- Lactation Benchmark Curves for Wisconsin
- Economic Evaluation of using rBST
- Alfalfa Yield Predictor: Using a Computer Application to Predict Irrigated Alfalfa Yield

Replacement

- The Economic Value of a Dairy Cow
- Value of a Springer
- Heifer Replacement
- Heifer Break-Even
- Herd Structure Simulation

Financial

- LGM-Dairy Analyzer
- Working Capital Decision Support System
- The Wisconsin Dairy Farm Ratio Benchmarking Tool
- Decision Support System Program for Dairy Production and Expansion
- Least Cost Optimizer
- LGM-Dairy Premium Sensitivity
- Return to Labor
- Estimate Your Mailbox Price
- LGM Dairy Feed Equivalent Calculator
- Net Guarantee Income Over Feed Cost for LGM-Dairy

Price Risk

- LGM-Dairy Premium Sensitivity
- Least Cost Optimizer
- LGM Premium
- LGM Dairy Feed Equivalent Calculator
- Milk Component Price Analysis

Environment

- Dairy Nutrient Manager
- Grazing-N: Application that Balances Nitrogen in Grazing Systems
- Seasonal Prediction of Manure Excretion
- Dynamic Dairy Farm Model

Have you ever visited the UW Dairy Management Website?

Poll question!

A. Never

It is the first time I see it



B. Maybe sometime

Don't remember for sure

C. Yes, I have it

A few times

D. Yes, definitely

Many times

E. Yes, of course

I visit it frequently

Decision support system

Perform your own calculations

Assessment is farm specific

Every farm is different

Farm conditions change dynamically

Decisions should adjust



Market conditions change permanently

Might impact decisions



User-friendly application

Easy to use, still robust

New Software Tools

Reproduction

UW-DairyRepro\$Plus: A Reproductive Analysis Tool that Includes Heat Detection Devices
This tool is an update of the tool UW-DairyRepro\$ (below) that has an improved design and it is capable of analyze the use of heat detection devices within of defined reproductive programs in dairy cattle.



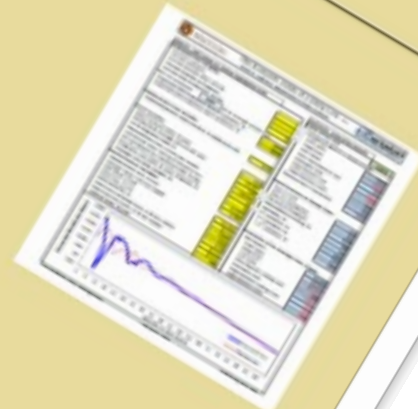
- Excel Spreadsheet (Download)
- Instructions and Documentation (Download)
- Economic Value of Sexed Semen Programs for Dairy Heifers
- UW-DairyRepro\$: A Reproductive Economic Analysis Tool
- Exploring Timing of Pregnancy Impact on Income Over Feed Cost
- Dairy Reproductive Economic Analysis

Replacement

The Economic Value of a Dairy Cow
The Economic Value of a Dairy Cow

- Online Tool (Open)
- Excel Spreadsheet (Download)
- Presentation (Download)
- Paper (Download)
- Magazine Article (Download)
- Demo (Click to View/Hide the Video)

- Value of a Springer
- Heifer Replacement
- Heifer Break-Even
- Herd Structure Simulation



Feeding

FeedVal 2012
Estimates the market value of dairy feed ingredients

- Online Tool (Open)
- Presentation (Download)
- Demo (Click to View/Hide the Video)

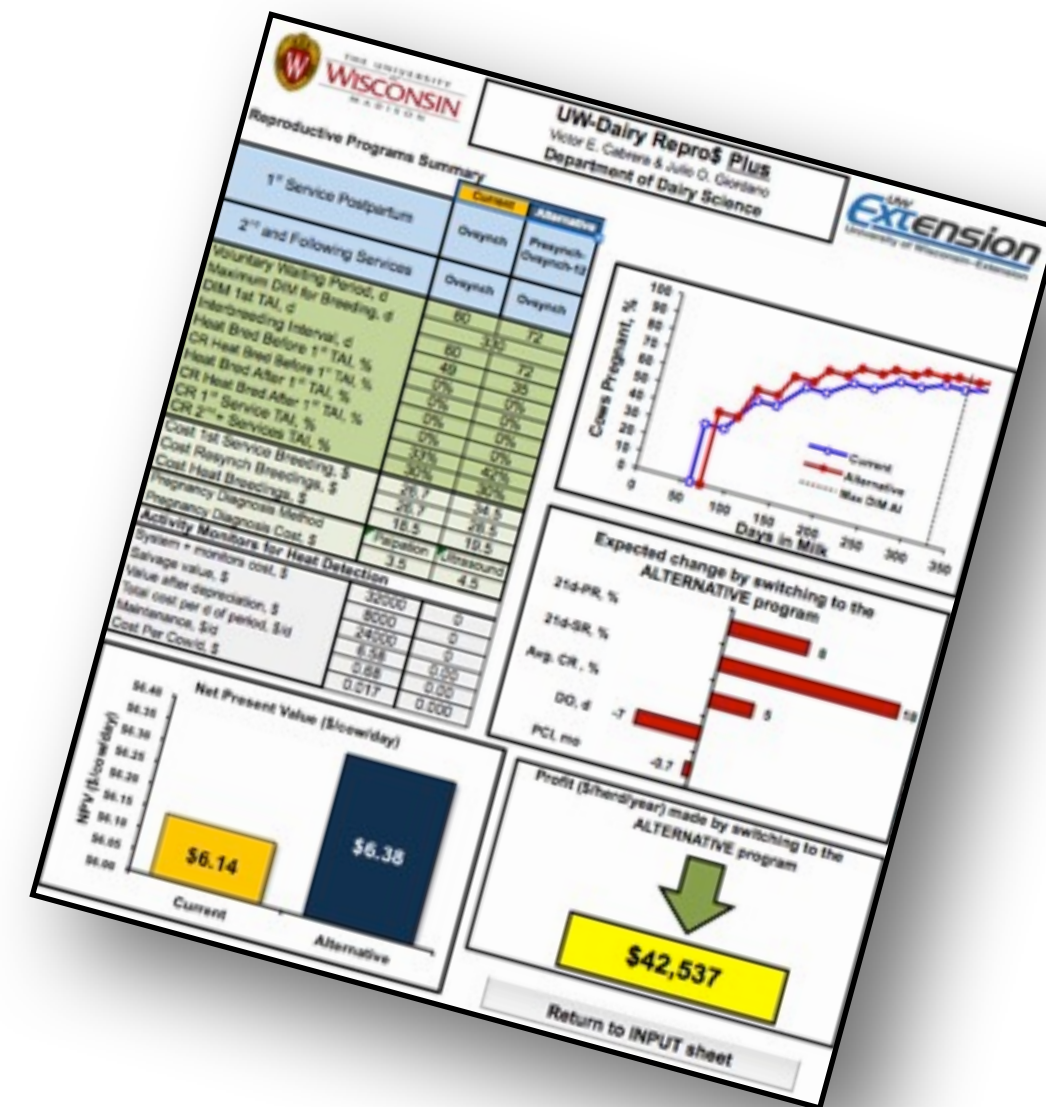
- Grouping Strategies for Feeding Lactating Dairy Cattle
- Optigen® Evaluator
- Income Over Feed Supplement Cost
- Dairy Extension Feed Cost Evaluator
- Corn Feeding Strategies
- Income Over Feed Cost
- Ration Feed Additive Break-Even Analysis



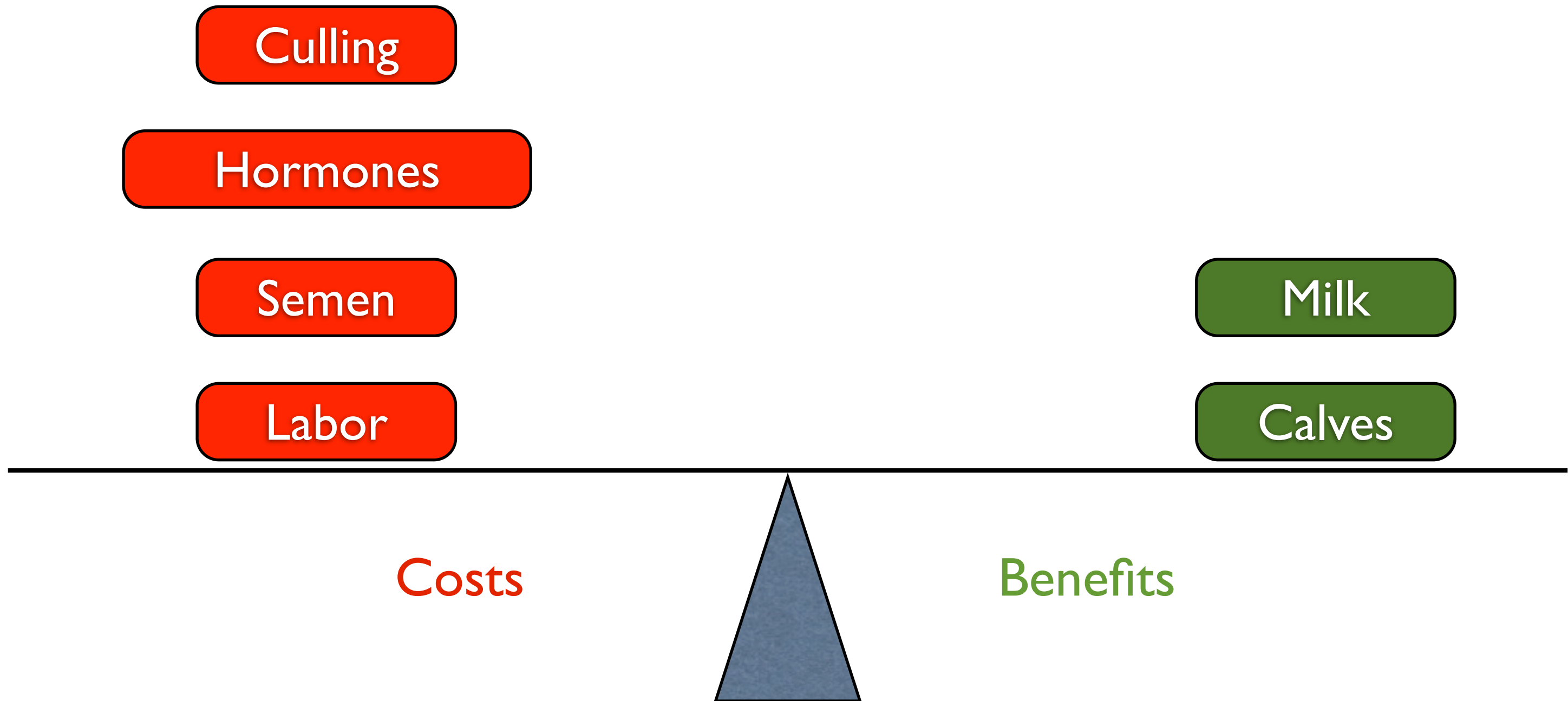
UW-DairyRepro\$Plus

Assess the economic value of reproductive management programs

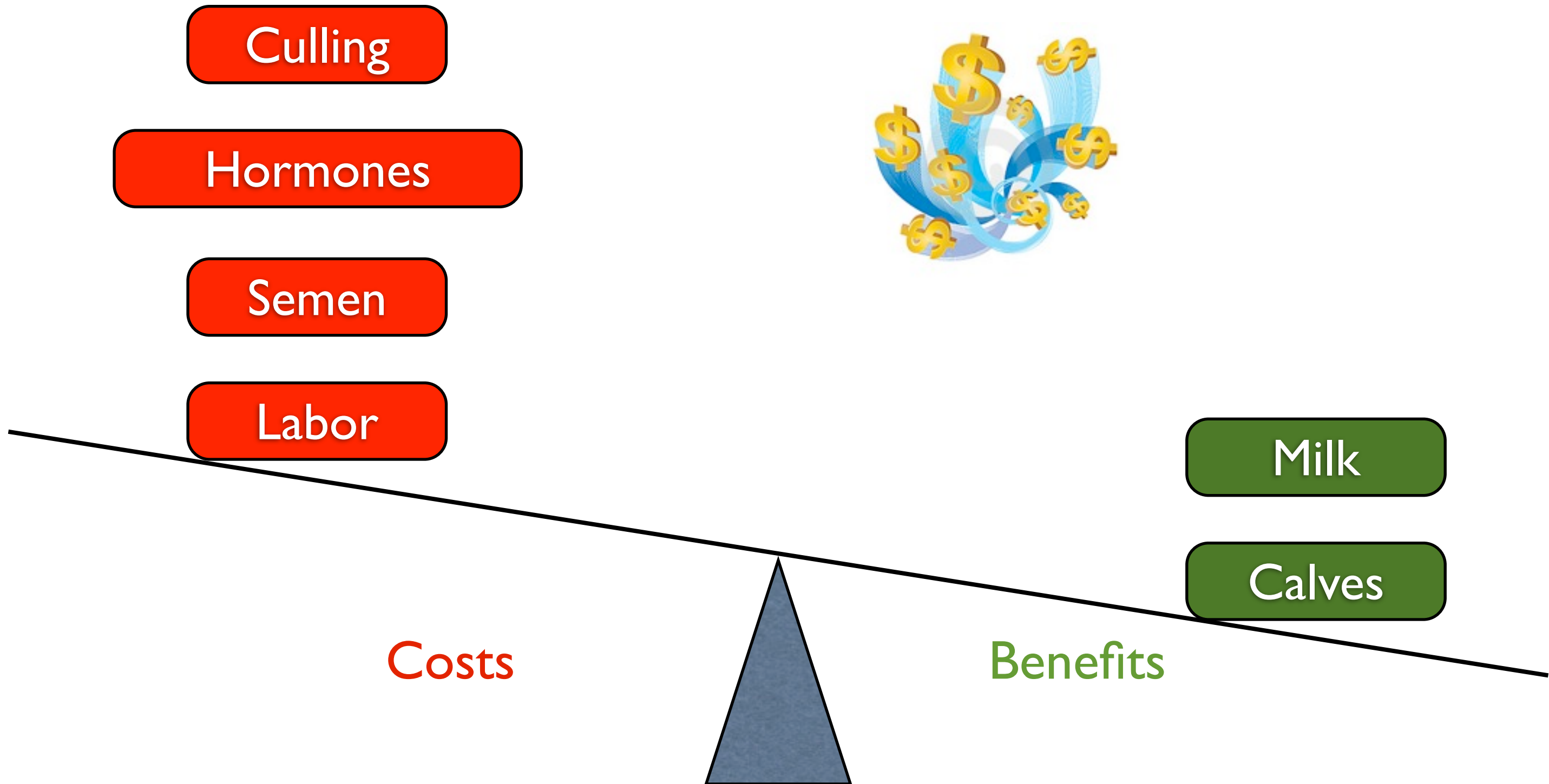
Finds the best reproductive program



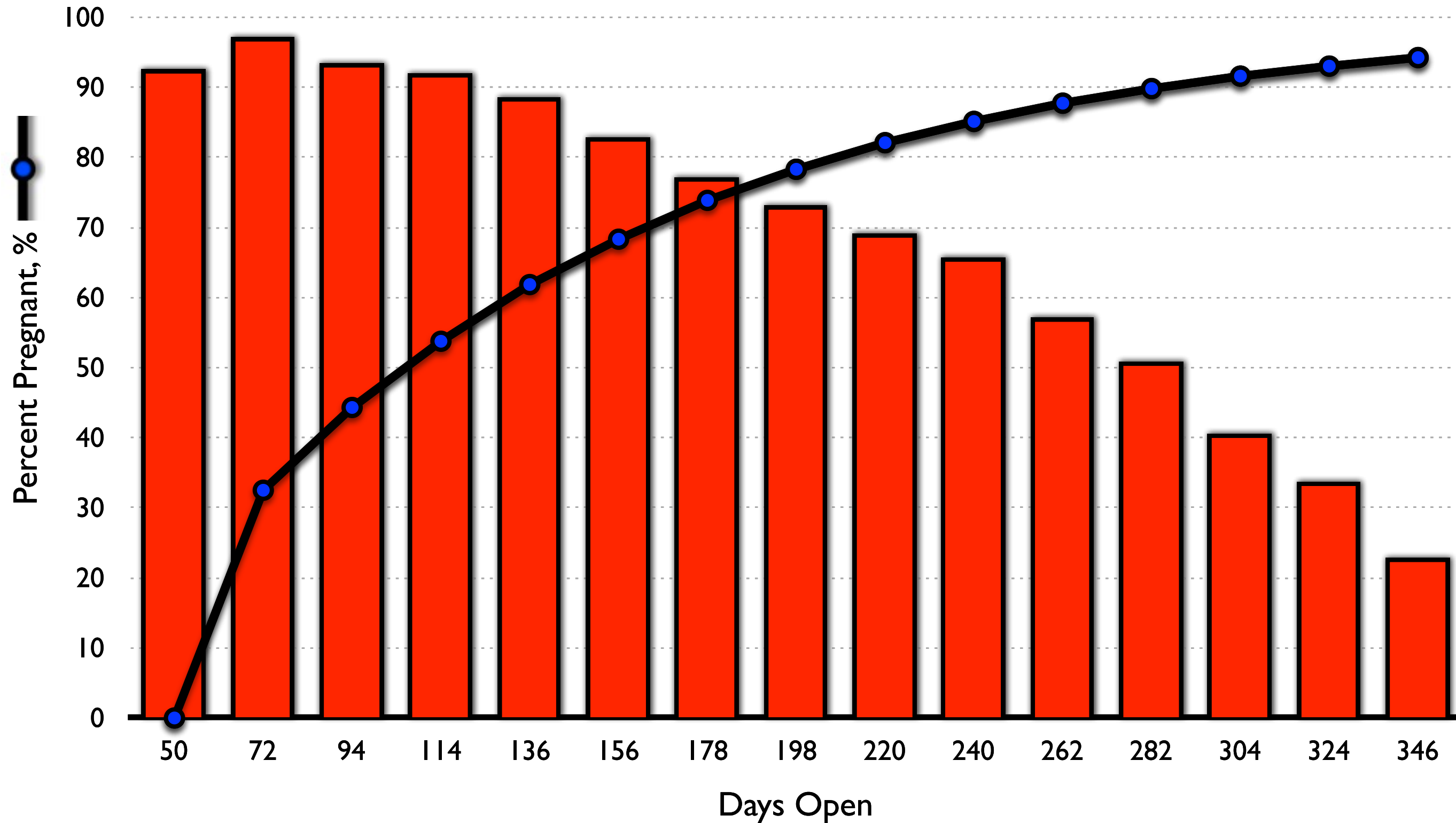
Reproduction Costs and Benefits



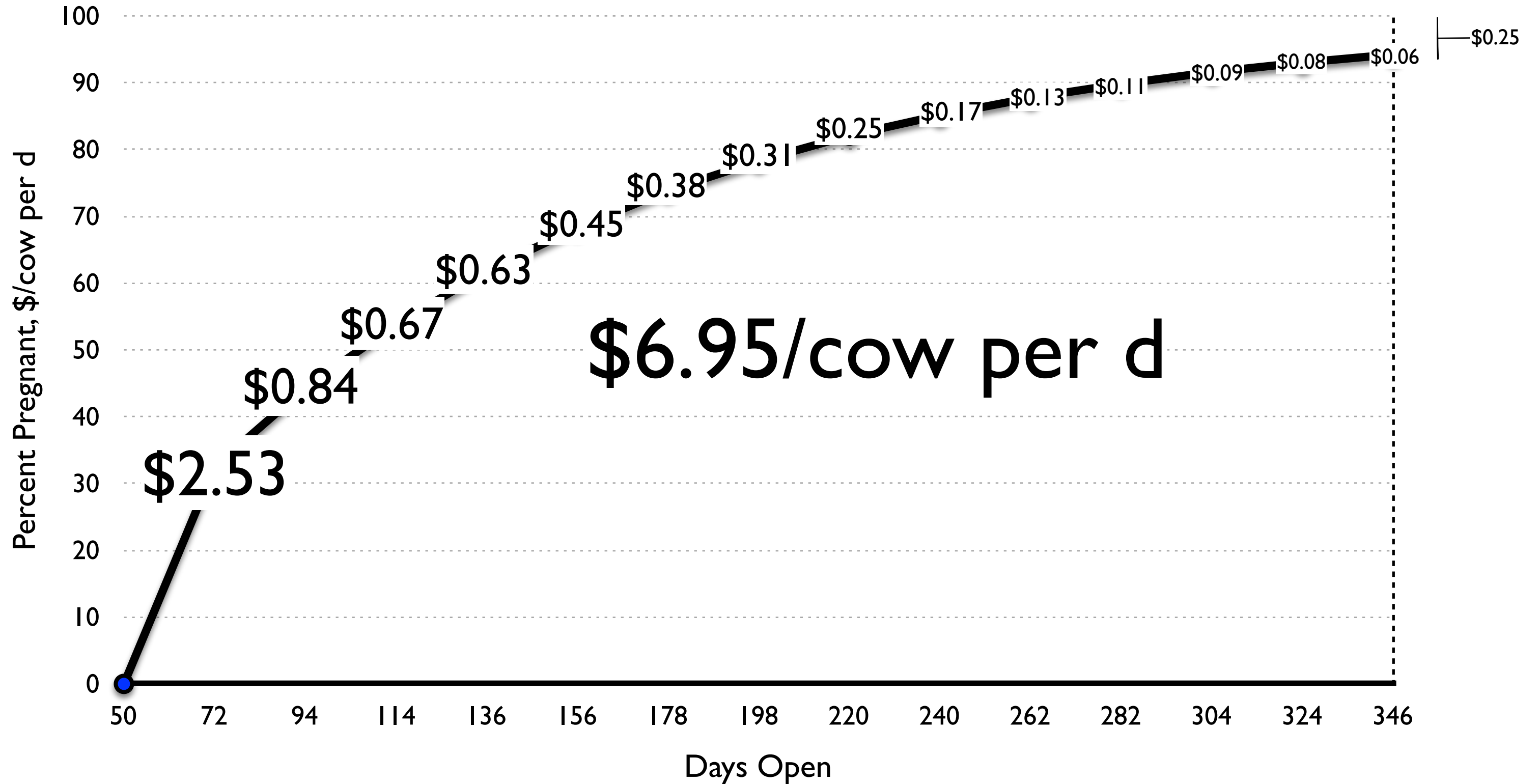
Reproduction Costs and Benefits



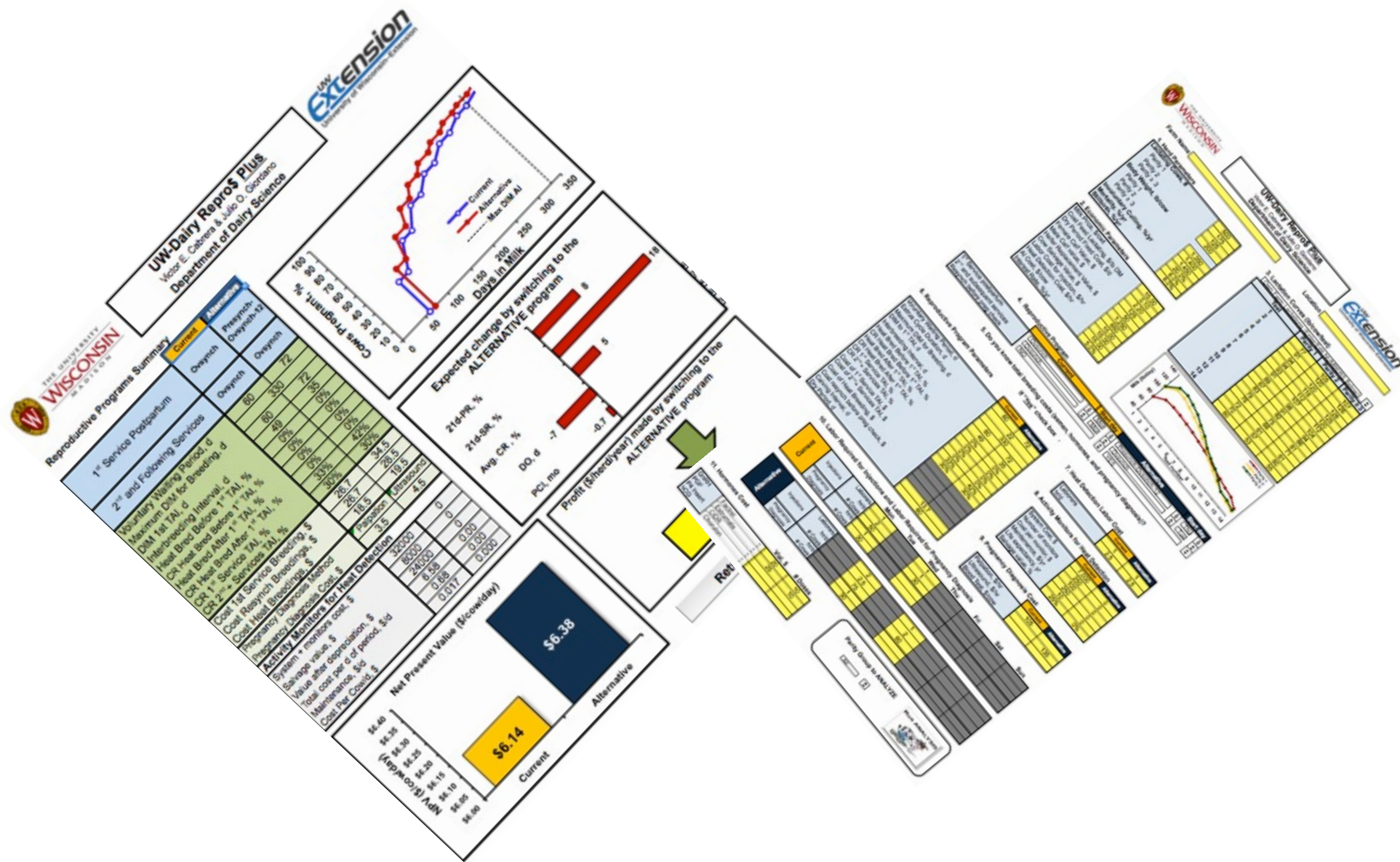
Reproduction vs. Profit



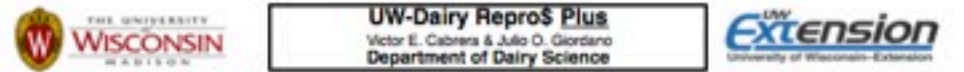
Value of a Reproductive Program



UW-DairyRepro\$Plus



UW-DairyRepro\$Plus



Farm Name: _____ Location: _____

1. Herd Parameters

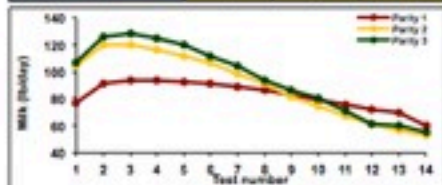
Lactating Cows, #	500
Parity 1	175
Parity 2	125
Parity ≥ 3	200
Body Weight, lb/cow	
Parity 1	1,350
Parity 2	1,400
Parity ≥ 3	1,450
Involuntary Culling, %/yr	20.0%
Mortality, %/yr	6.0%
Stillbirth, %/yr	6.0%

2. Economic Parameters

Milk Price, \$/cwt	15.00
Cost Feed Lactating, \$/lb DM	0.10
Dry Period Fixed Cost, \$/c	2.20
Female Calf Value, \$	125
Male Calf value, \$	50
Heifer Replacement Value, \$	1,250
Cow Salvage Value, \$	650
Labor Cost for Injection, \$/hr	15.00
Heat Detection Cost, \$/hr	15.00
AI Cost, \$/cow	15.00
Interest Rate, %/yr	5.0%

3. Lactation Curves (lb/cow/test)

Test	Parity 1	Parity 2	Parity ≥ 3
1	77	105	107
2	91	120	126
3	94	120	128
4	94	116	125
5	93	112	120
6	91	107	112
7	89	98	104
8	87	91	94
9	83	82	86
10	79	75	81
11	76	68	71
12	72	61	61
13	70	57	60
14	60	53	55



4. Reproductive Program

	Current	Start day	Alternative	Start day
1 st Service postpartum	Ovsynch	Med	Presynch-Ovsynch-12	Med
2 nd and subsequent services	Ovsynch	Med	Ovsynch	Med
Resynch before preg check	NO		YES	

5. Do you know total breeding costs (semen, hormones, and pregnancy diagnosis)?

If "Yes" check box

6. Reproductive Program Parameters

	Current	Alternative
Voluntary Waiting Period, d	60	72
Estrus Cycle Duration, d	22	
Maximum DIM for Breeding, d	330	
DIM to 1 st TAI, d	60	72
Interbreeding Interval, d	49	35
Heat Bred Before 1 st TAI, %	0%	0%
CR Heat Bred Before 1 st TAI, %	0%	0%
Heat Bred After 1 st TAI, %	0%	0%
CR Heat Bred After 1 st TAI, %	0%	0%
CR 1 st Service TAI, %	33%	42%
CR 2 nd + Services TAI, %	30%	30%
Cost of 1 st Service TAI, \$		
Cost of 2 nd + Services TAI, \$		
Cost of Heat Breeding, \$		
Cost resynch before preg check, \$		
Calving Interval, d	13.7	
Dry Period, d	60	

7. Heat Detection Labor Cost

	Current	Alternative
Laborers	1	1
hr/d	2.5	2.5

8. Activity Monitors for Heat Detection

	Current	Alternative
System Cost, \$	7,000	0
Number of monitors	250	0
Cost per monitor, \$	100	0
Maintenance, \$/yr	250	0
Life expectancy, yr	10	0
Salvage value, %	25%	0%

9. Pregnancy Diagnosis Cost

	Current	Alternative
Palpation, \$/hr	105	
Ultrasound, \$/hr		135
Blood Test, \$/cow		

10. Labor Required for Injections and Labor Required for Pregnancy Diagnosis

		Mon	Tue	Wed	Thu	Fri	Sat	Sun
Current	Injections	1		1				
	h/d	2		1				
Alternative	Injections		2		1			
	h/d		2.5		2			
Current	Pregnancy Diagnosis	1		30				
	# Cows	30						
Alternative	Pregnancy Diagnosis		1					
	# Cows		30					

11. Hormones Cost

	Vial, \$	# Doses
GnRH	Factrel	20
PGF	Estimate	25
P4 Insert	CIDR	10
hCG	Chorulon	

Parity Group to ANALYZE

ALL 2



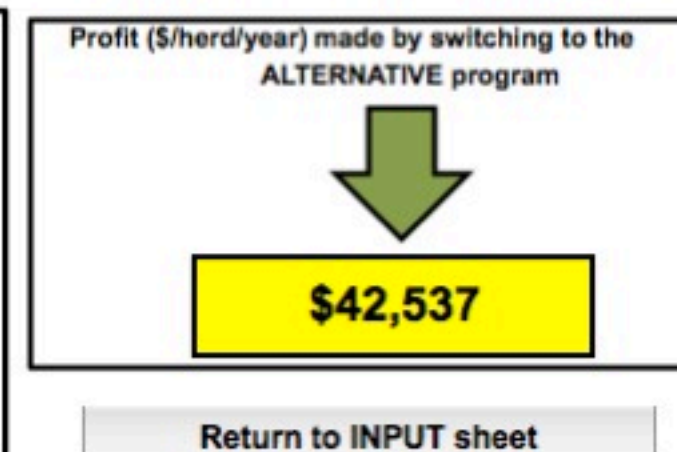
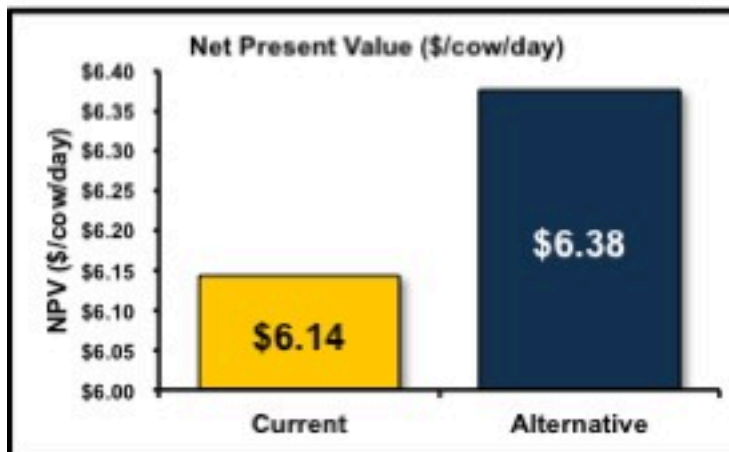
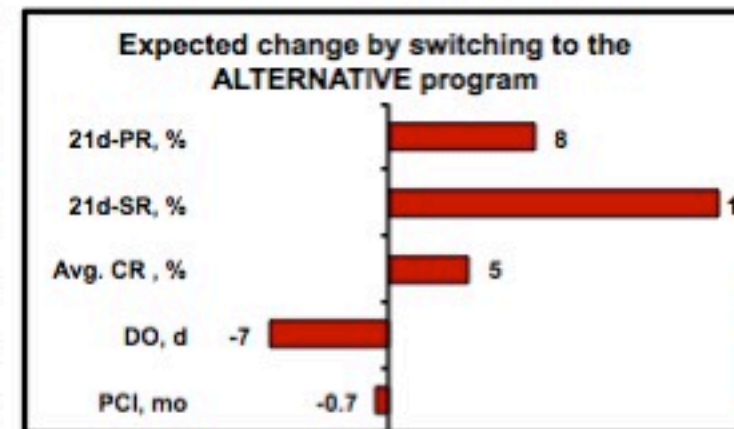
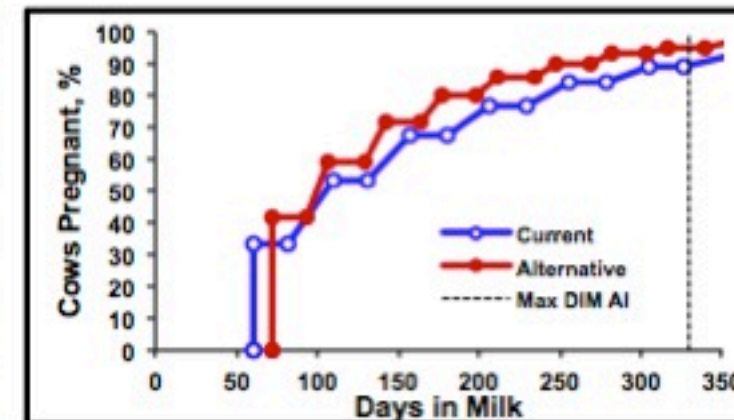
UW-DairyRepro\$ Plus

Victor E. Cabrera & Julio O. Giordano
Department of Dairy Science



Reproductive Programs Summary

	Current	Alternative
1 st Service Postpartum	Ovsynch	Presynch-Ovsynch-12
2 nd and Following Services	Ovsynch	Ovsynch
Voluntary Waiting Period, d	60	72
Maximum DIM for Breeding, d	330	
DIM 1 st TAI, d	60	72
Interbreeding Interval, d	49	35
Heat Bred Before 1 st TAI, %	0%	0%
CR Heat Bred Before 1 st TAI, %	0%	0%
Heat Bred After 1 st TAI, %	0%	0%
CR Heat Bred After 1 st TAI, %	0%	0%
CR 1 st Service TAI, %	33%	42%
CR 2 nd + Services TAI, %	30%	30%
Cost 1 st Service Breeding, \$	26.7	34.5
Cost Resynch Breedings, \$	26.7	28.5
Cost Heat Breedings, \$	18.5	19.5
Pregnancy Diagnosis Method	Palpation	Ultrasound
Pregnancy Diagnosis Cost, \$	3.5	4.5
Activity Monitors for Heat Detection		
System + monitors cost, \$	32000	0
Salvage value, \$	8000	0
Value after depreciation, \$	24000	0
Total cost per d of period, \$/d	6.58	0.00
Maintenance, \$/d	0.68	0.00
Cost Per Cow/d, \$	0.017	0.000



Return to INPUT sheet

Customize Your Farm

Herd

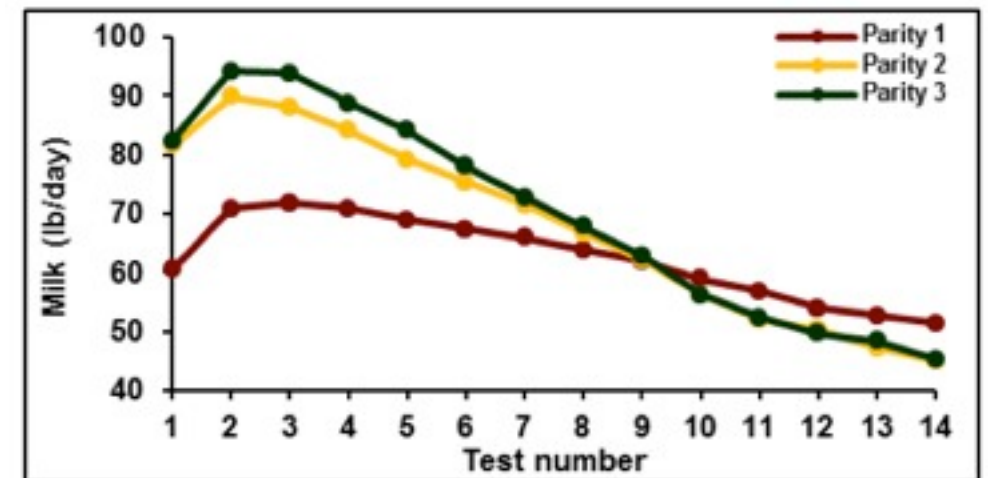
Lactating Cows, #	500
Parity 1	175
Parity 2	125
Parity ≥ 3	200
Body Weight, lb/cow	
Parity 1	1,350
Parity 2	1,400
Parity ≥ 3	1,450
Involuntary Culling, %/yr	20.0%
Mortality, %/yr	6.0%
Stillbirth, %/yr	6.0%

Lactation Curves

Own Farm Lactations (Enter/Edit NUMBERS Below)			
Test	Parity 1	Parity 2	Parity ≥ 3
1	77	105	107
2	91	120	126
3	94	120	128
4	94	116	125
5	93	112	120
6	91	107	112
7	89	98	104
8	87	91	94
9	83	82	86
10	79	75	81
11	76	68	71
12	72	61	61
13	70	57	60
14	60	53	55

Economics

Milk Price, \$/cwt	15.00
Cost Feed Lactating, \$/lb DM	0.10
Dry Period Fixed Cost, \$/d	2.20
Female Calf Value, \$	125
Male Calf value, \$	50
Heifer Replacement Value, \$	1,250
Cow Salvage Value, \$	650
Labor Cost for Injection, \$/hr	15.00
Heat Detection Cost, \$/hr	15.00
AI Cost, \$/cow	15.00
Interest Rate, %/yr	5.0%



Define Reproductive Programs

Reproductive Programs

	Current	Start day	Alternative	Start day
1 st Service postpartum	Ovsynch	Tue	Presynch-Ovsynch-12	Thu
2 nd and subsequent services	Ovsynch	Tue	Ovsynch	Tue
Resynch before preg check	YES		YES	

Reproductive parameters

	Current	Alternative
Voluntary Waiting Period, d	60	72
Estrus Cycle Duration, d	22	
Maximum DIM for <u>Breeding</u> , d	330	
DIM to 1 st TAI, d	60	72
Interbreeding Interval, d	49	35
Heat Bred Before 1 st TAI, %	50%	50%
CR Heat Bred Before 1 st TAI, %	35%	35%
Heat Bred After 1 st TAI, %	40%	40%
CR Heat Bred After 1 st TAI, %	35%	35%

Reproductive parameters

	Current	Alternative
CR 1 st Service TAI, %	33%	42%
CR 2 nd + Services TAI, %	30%	30%
Cost of 1 st Service TAI, \$		
Cost of 2 nd + Services TAI, \$		
Cost of Heat Breeding, \$		
Cost resynch before <u>preg</u> check, \$		
Calving Interval, d	13.7	
Dry Period, d	60	

Additional Info

Heat Detection Labor

	Current	Alternative
Laborers	1	1
hr/d	2.5	2.5

Hormones' Costs

Pregnancy Diagnosis

	Current	Alternative
Palpation, \$/hr	105	
Ultrasound, \$/hr		135
Blood Test, \$/cow		

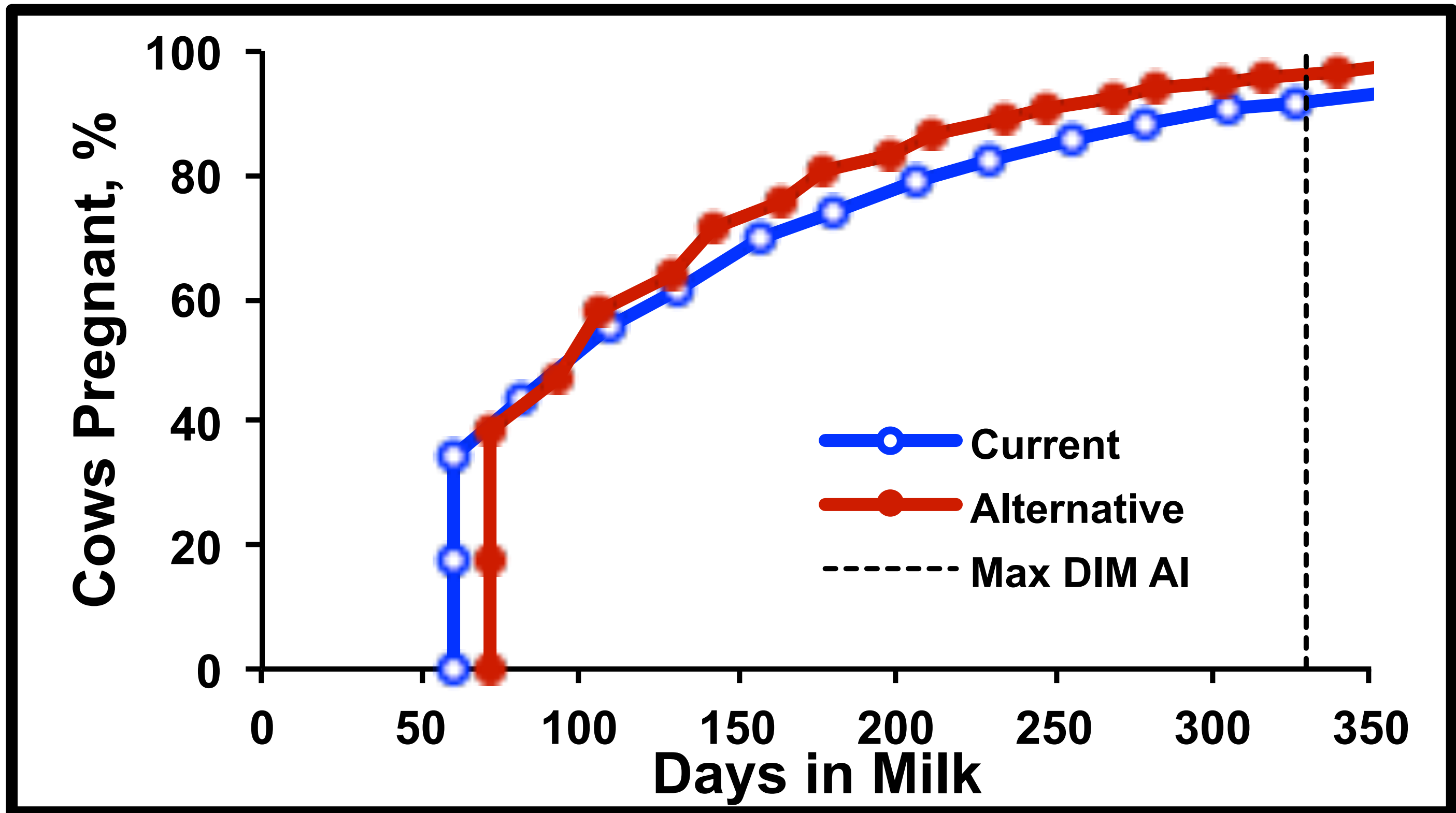
Labor for Injections and Pregnancy Diagnosis

Activity Monitors for Heat Detection

New!

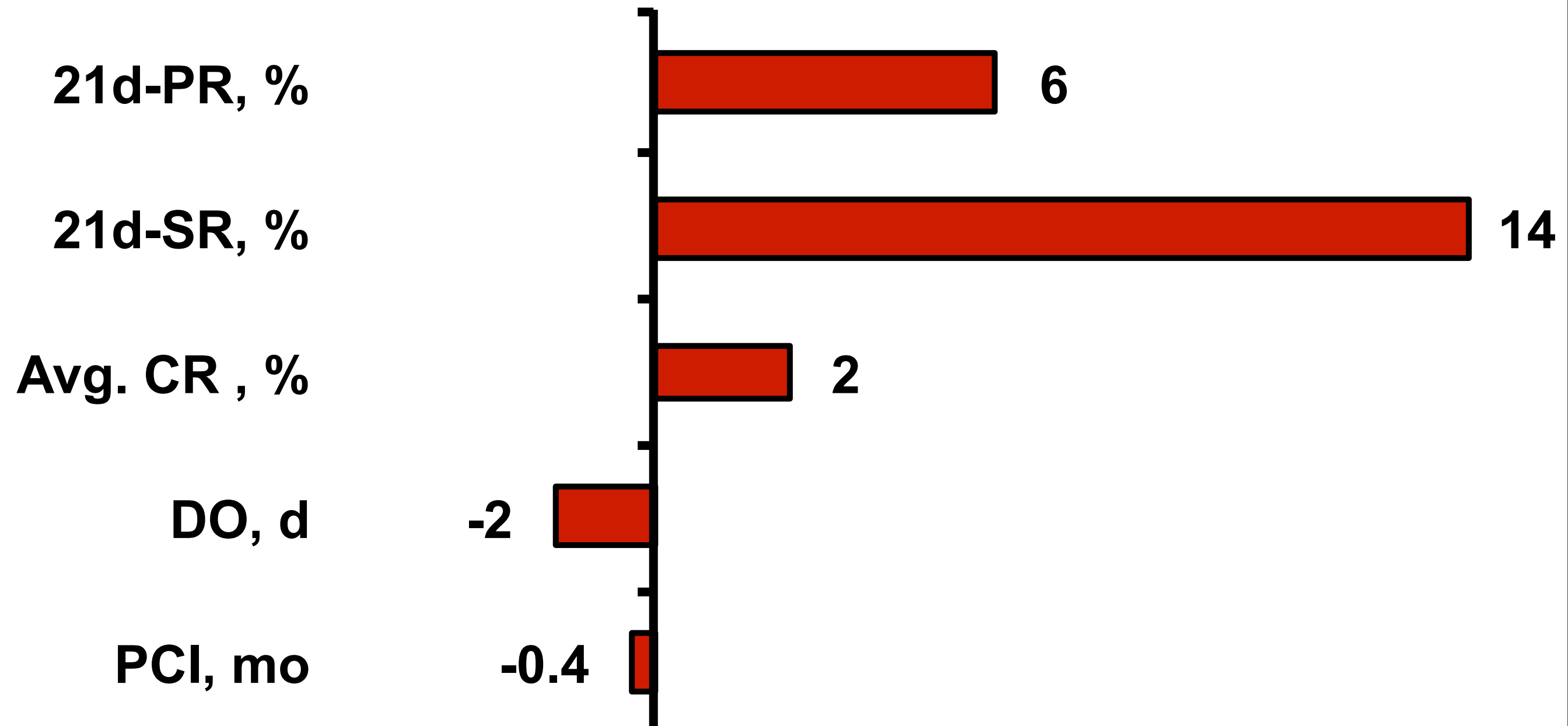
	Current	Alternative
System Cost, \$	0	7,000
Number of monitors	0	350
Cost per monitor, \$	0	110
Maintenance, \$/yr	0	350
Life expectancy, yr	0	10
Salvage value, %	0%	25%

Reproductive Performance



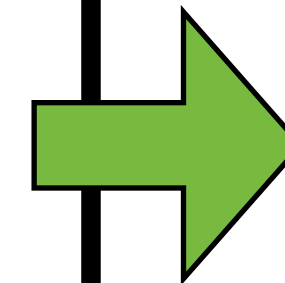
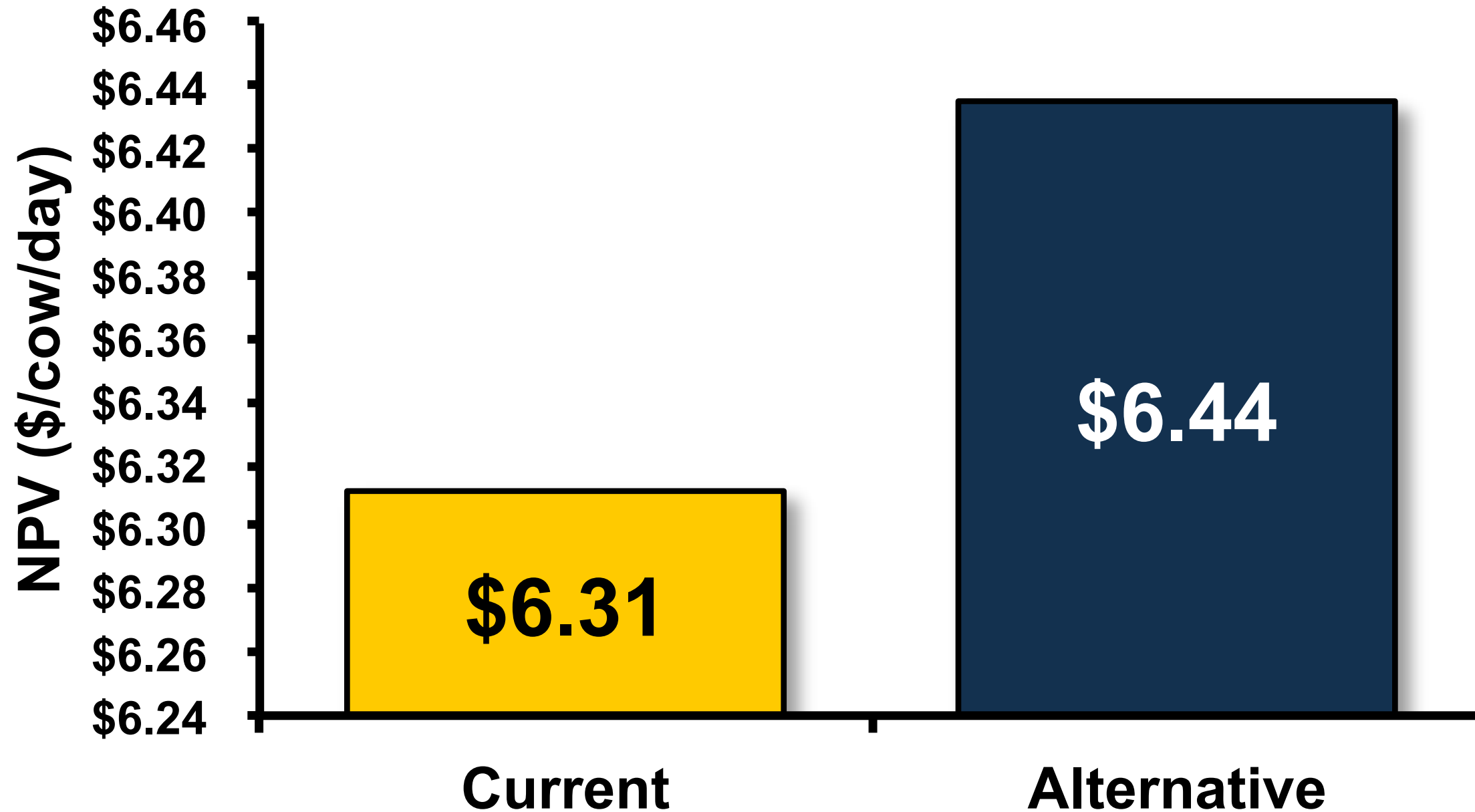
Reproductive Performance

Expected change by switching to the
ALTERNATIVE program



Economic Performance

Net Present Value (\$/cow/day)



\$47,450

per 1,000 cows per year

What is the most important economic factor for having cows pregnant at the right time?

Poll question!

A. Reproduction costs

Saving costs is important



B. Calves

Newborn calves

C. Milk

Lactation peak advantage

D. Labor

Heat detection, synchronization, pregnancy diagnosis, ...

E. Culling

Less reproductive culling

Acknowledgement

**Project Supported by University
of Wisconsin-Madison College of
Agriculture of Life Sciences Hatch**

Grant No. [WIS01577](#) to V.E.C.



FeedVal

Estimate the true value of dairy feed ingredients
Helps to find best feeds buys



FeedVal 2012
V.E. Cabrera, L. Armentano, R.D. Shaver
Department of Dairy Science

USDA Extension
NIFA
United States Department of Agriculture
National Institute of Food and Agriculture

WISCONSIN
Department of Dairy Science

Acknowledgements:
This project is supported by Agriculture and Food Research Initiative Competitive Grant No. 2011-68004-30340 from the USDA National Institute of Food and Agriculture

Supporting Documents:
• Tool overview
• Download FeedVal in Dairy Guide Docs in the User Manual
• FAQ, User Guide

Monthly Analysis
Download for: December 2012
Download Spreadsheet

Upload

Inputs - Price Inputs
Air-Fed Basis
2012 December 1

Ingredient	CP %	MEQ %	ADF %	CP \$/Tonne
Shelled Corn	8	0.32	4.2	-
Soybean Meal 48%	54	1	32.5	4.97
Soybean Meal 44%	46	0.87	16	0.32
Soybean Meal, expeller	40	1.08	28	1.25
Soybeans, raw	43	0.6	11.2	0.6
Soybeans, heated	36	0.67	15	0.5
Good Quality Hay	7	0.9	1.4	0.95
Poor Quality Hay	7	0.95	0	2.06
Corn Silage	8			
Distillers Dried Grains	8			
High-Moisture Corn	8			
Timothy				

OUTPUTS - Price Inputs

DM %	Price \$/Tonne	Unit
80	7.08	ton
80	647.3	ton
80	401.76	ton
80	424.52	ton
80	410	ton
80	761	ton
80	198	ton
80	60	ton
80	261	ton
80	200	ton
80	25	ton

OUTPUTS - Calculated

Predicted Value, \$/Tonne	Actual Price as % of Predicted Value
7.005	97
603.86	95
402.887	97
352.805	100
418.693	100
423.572	100
394.141	94
167.841	94
71.98	100
317.376	100
198.669	100
21.861	94

Ingredient	Value
Shelled Corn	7.08
Soybean Meal 48%	647.3
Soybean Meal 44%	401.76
Soybean Meal, expeller	424.52
Soybeans, raw	410
Soybeans, heated	761
Good Quality Hay	198
Poor Quality Hay	60
Corn Silage	261
Distillers Dried Grains	200
High-Moisture Corn	25
Timothy	

What FeedVal Does?



Estimates prices
Feed ingredients

Gives relative prices

Compared to market prices



Calculates values

Individual nutrients contained in feeds
based on referee feeds



Finds best buys

Assist on decisions of purchasing,
using, or formulating diets



Upload data as Excel file: no file selected

Commands

Disregard negative Nutrient Calculated Values

Select Number of Nutrients:

INPUTS - Nutrients for Ingredients

Nutrient

RUP % RDP % NE13x N Lipid % peNDF Ca %

Nutrient Calculated Value, \$/Unit DM

Results

	RUP %	RDP %	NE13x N	Lipid %	peNDF	Ca %
Shelled Corn	4.5	4.5	0.91	4.2	0	0.04
Soybean Meal 48%	21	33	1	1.1	0	0.35
Soybean Meal 44%	17.5	32.5	0.97	1.6	0	0.4
Soybean Meal, expeller	30	16	1.09	8	0	0.36
Soybeans Raw	12	28	1.25	19	0	0.32
Soybeans, heated	22	21	1.24	19	0	0.26
Good Quality Hay	5	14	0.6	2	35	1.3
Poor Quality Hay	4.8	11.2	0.5	2	50	1
Corn Silage	2.8	4.2	0.67	3.2	30	0.28
Distillers Dried Grains	15	15	0.9	12	0	0.22
High-Moisture Corn	3.6	5.4	0.95	4.2	0	0.03
Tallow	0	0	2.06	100	0	0
Blood Meal	76	19	1.06	1.2	0	0.3

Nutrient Content of Feed Ingredients

INPUTS - Price Inputs

As-Fed Basis

2012 Decembe

DM % Price \$/Unit Unit

DM %	Price \$/Unit	Unit
89	7.08	bu <input type="text"/>
89	447	ton <input type="text"/>
89	401	ton <input type="text"/>
92	424.53	ton <input type="text"/>
87	450	ton <input type="text"/>
92	700	ton <input type="text"/>
87	265	ton <input type="text"/>
87	188	ton <input type="text"/>
35	60	ton <input type="text"/>
89	265	ton <input type="text"/>
70	200	ton <input type="text"/>
99	25	cwt <input type="text"/>
94	1050	ton <input type="text"/>

Prices of Feed Ingredients

OUTPUTS

Calculated

Predicted Value, \$/Unit Actual Price as % of Predicted Value

Results

Feed Ingredients

Ingredient

Ingredients

<input checked="" type="checkbox"/> Shelled Corn
<input checked="" type="checkbox"/> Soybean Meal 48%
<input checked="" type="checkbox"/> Soybean Meal 44%
<input checked="" type="checkbox"/> Soybean Meal, expeller
<input checked="" type="checkbox"/> Soybeans Raw
<input checked="" type="checkbox"/> Soybeans, heated
<input checked="" type="checkbox"/> Good Quality Hay
<input checked="" type="checkbox"/> Poor Quality Hay
<input checked="" type="checkbox"/> Corn Silage
<input checked="" type="checkbox"/> Distillers Dried Grains
<input checked="" type="checkbox"/> High-Moisture Corn
<input checked="" type="checkbox"/> Tallow
<input checked="" type="checkbox"/> Blood Meal

Analyze

Disregard negative Nutrient Calculated Values

1 Select if to use negative nutrient values

Select Number of Nutrients: 6

Hide Price Inputs

Restore Defaults

INPUTS - Nutrients for Ingredients

		Nutrient					
<input checked="" type="checkbox"/> Ingredient		RUP %	RDP %	NEI3x N	Lipid %	peNDF %	Ca %
		Nutrient Calculated Value, \$/Unit DM					
Ingredients ↓							
<input checked="" type="checkbox"/>	Shelled Corn	4.5	4.5	0.91	4.2	0	0.04
<input checked="" type="checkbox"/>	Soybean Meal 48%	21	33	1	1.1	0	0.35
<input checked="" type="checkbox"/>	Soybean Meal 44%	17.5	32.5	0.97	1.6	0	0.4
<input checked="" type="checkbox"/>	Soybean Meal, expeller	30	16	1.09	8	0	0.36
<input checked="" type="checkbox"/>	Soybeans, raw	12	28	1.25	19	0	0.32
<input checked="" type="checkbox"/>	Soybeans, heated	22	21	1.24	19	0	0.26

2

Select number of nutrients

Select Number of Nutrients:

6

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Hide Price Inputs

Restore Default Values

Download Spreadsheet

Number of Nutrients for Ingredients

		Nutrient					
<input checked="" type="checkbox"/> Ingredient		RDP %	NEI3x N	Lipid %	peNDF %	Ca %	
		Nutrient Calculated Value, \$/Unit DM					
Ingredients ↓							
<input checked="" type="checkbox"/>	Shelled Corn	4.5	4.5	0.91	4.2	0	0.04
<input checked="" type="checkbox"/>	Soybean Meal 48%	21	33	1	1.1	0	0.35
<input checked="" type="checkbox"/>	Soybean Meal 44%	17.5	32.5	0.97	1.6	0	0.4
<input checked="" type="checkbox"/>	Soybean Meal, expeller	30	16	1.09	8	0	0.36
<input type="checkbox"/>	Soybean Meal, expeller	30	16	1.09	8	0	0.36

3

Select combination of nutrients

INPUTS - Nutrients for Ingredients

		Nutrient			
<input checked="" type="checkbox"/> Ingredient	RUP %	3x N	Lipid %	peNDF %	Ca %
		Calculated Value, \$/Unit DM			
Ingredients ↓					
<input checked="" type="checkbox"/> Shelled Corn	4.5	91	4.2	0	0.04
<input checked="" type="checkbox"/> Soybean Meal 48%	21		1.1	0	0.35
<input checked="" type="checkbox"/> Soybean Meal 44%	17.5	97	1.6	0	0.4
<input checked="" type="checkbox"/> Soybean Meal, expeller	30	09	8	0	0.36
<input type="checkbox"/> Soybean Meal, expeller	30	02	8	0	0.36
<input type="checkbox"/> Soybean Meal 44%	17.5	21	1.6	0	0.4

- RUP %**
- RDP %
- NEI3x Mcal/lb
- Lipid %
- peNDF %
- Ca %
- Phos %
- Lys %
- Met %
- NDF %
- dNDF
- Starch
- Sugars
- CP %

INPUTS - Nutrients for Ingredients

5

Edit ingredients & their nutrient composition

Nutrient						
<input checked="" type="checkbox"/> Ingredient	RUP %	RDP %	NEI3x N	Lipid %	peNDF	Ca %
Nutrient Calculated Value, \$/Unit DM						
Ingredients ↓						
<input checked="" type="checkbox"/> Shelled Corn	4.5	4.5	0.91	4.2	0	0.04
<input checked="" type="checkbox"/> Soybean Meal 48%	21	33	1	1.1	0	0.35
<input checked="" type="checkbox"/> Soybean Meal 44%	17.5	32.5	0.97	1.6	0	0.4
<input checked="" type="checkbox"/> Soybean Meal, expeller	30	16	1.09	8	0	0.36
<input checked="" type="checkbox"/> Soybeans, raw	12	28	1.25	19	0	0.32
<input checked="" type="checkbox"/> Soybeans, heated	22	21	1.24	19	0	0.26
<input checked="" type="checkbox"/> Good Quality Hay	6	14	0.6	2	35	1.3
<input checked="" type="checkbox"/> Poor Quality Hay	4.8	11.2	0.5	2	50	1
<input checked="" type="checkbox"/> Corn Silage	2.8	4.2	0.67	3.2	30	0.28
<input checked="" type="checkbox"/> Corn Silage	5.8	4.5	0.91	3.5	30	0.58

INPUTS - Price Inputs

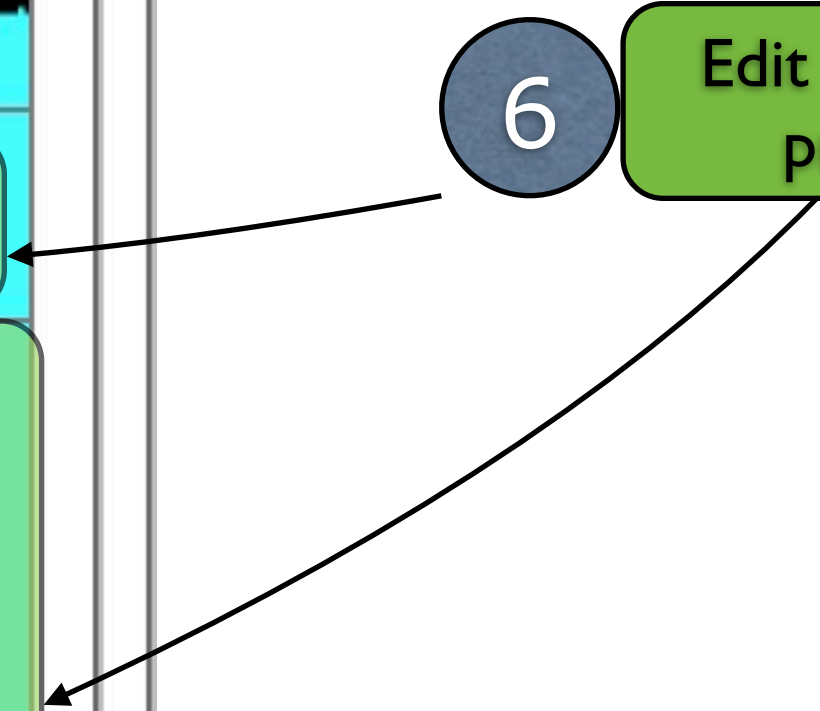
As-Fed Basis

2013 January

DM %	Price \$/Unit	Unit
89	7.44	bu
89	431	ton
89	387.12	ton
92	409.06	ton

6

Edit ingredients DM, price, and units



7

Perform a calculation!

Analyze Disregard negative Nutrient Calculated Values

Select Number of Nutrients: Hide Price Inputs Restore Default Values Download Spr

INPUTS - Nutrients for Ingredients

Nutrient						
<input checked="" type="checkbox"/> Ingredient	RUP %	RDP %	NEI3x N	Lipid %	peNDF %	Ca %
Nutrient Calculated Value, \$/Unit DM						
Ingredients ↓						
<input checked="" type="checkbox"/> Shelled Corn	4.5	4.5	0.91	4.2	0	0.04
<input type="checkbox"/> Shelled Corn	4.2	4.2	0.91	4.5	0	0.04
<input type="checkbox"/> Ingredients ↑						

- January 2013 prices
- All referee feeds

8 Analyze results

RUP %	RDP %	NEI3x N	Lipid %	peNDF %	Ca %
0.545	0.087	0.115	0.019	0.019	-0.578

	Predicted Price	Relative Price, %	
<input checked="" type="checkbox"/> Distillers Dried Grains	355.158 /ton	75	Bargain!
<input checked="" type="checkbox"/> Cottonseed Meal	279.019 /ton	102	OK
<input checked="" type="checkbox"/> Barley	11.077 /cwt	135	Overpriced

Some FeedVal Applications

Monthly market watch

Best feed ingredient prices **ranked**



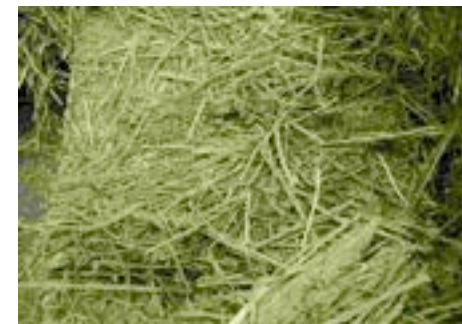
Pricing drought stressed corn silage

Assessment according to nutrient content

Pricing treated alfalfa hay

Fair price

Justify treating?



Monthly Price Market Watch

- All 38 feeds are used as referee feeds
- General wholesale Midwest prices
- 4 nutrients:
 - RUP, RDP, NEL, peNDF
 - None had negative coefficient

FeedVal 2012 predicted dairy feed prices and rankings for January 2013¹

V.E. Cabrera, P. Hoffman, and R. Shaver

Ingredient	DM %	Unit	Feed Prices (\$/Unit)		Actual Price as % of Predicted Value	Best-buy Ranking
			Market	Predicted		
Corn Stover	80	ton	68.00	115.39	59	1
Wet Distillers	45	ton	110.00	169.03	65	2
Hi-Pro Distillers	89	ton	300.00	431.47	70	3
Soybean Meal, expeller	92	ton	409.06	556.27	74	4
Distillers Dried Grains	89	ton	265.00	354.07	75	5
Brewers Dried Grains	89	ton	250.00	328.98	76	6
Beet Pulp	89	ton	150.00	195.41	77	7
Wet Brewers	25	ton	67.00	85.68	78	8
Cottonseed Meal	89	ton	330.00	391.95	84	9
Corn Silage	35	ton	60.00	70.90	85	10
Molasses	89	ton	165.00	192.50	86	11
Canola Meal, expeller	89	ton	330.00	361.42	91	12
Soybean Meal 44%	89	ton	387.13	419.42	92	13
Corn Gluten Feed	89	ton	241.00	261.98	92	14
Soybean Meal 48%	89	ton	431.00	459.78	94	15
Malt Sprouts	89	ton	250.00	260.18	96	16
Straw	85	ton	140.00	144.57	97	17
Soy Hulls	89	ton	210.00	209.54	100	18
Corn Gluten Meal	89	ton	670.00	661.03	101	19
Urea	99	ton	500.00	490.88	102	20
Tallow	99	cwt	25.00	23.96	104	21
Whole Cottonseed	89	ton	285.00	274.01	104	22
Linseed Meal	89	ton	340.00	327.49	104	23
High-Moisture Corn	70	ton	200.00	189.75	105	24
Oats	89	ton	236.25	225.31	105	25
Hominy	89	ton	245.00	230.24	106	26
Canola Meal, solvent	89	ton	347.00	320.94	108	27
Sunflower Meal	89	ton	265.00	240.20	110	28
Shelled Corn	89	bu	7.44	6.72	111	29
Blood Meal	94	ton	1140.00	1029.08	111	30
Wheat Bran	89	ton	240.00	207.51	116	31
Soybeans, raw	87	ton	490.00	409.30	120	32
Wheat	89	bu	8.33	6.88	121	33
Good Quality Hay	87	ton	260.00	207.59	125	34
Wheat Middlings	89	ton	280.00	223.31	125	35
Poor Quality Hay	87	ton	226.00	175.22	129	36
Barley	89	cwt	15.00	11.20	134	37
Soybeans, heated	92	ton	700.00	517.93	135	38

Bargain

Overpriced

Pricing Drought Stressed Corn Silage

Ingredients

Nutrients

INPUTS - Nutrients for Ingredients

	Nutrient	
<input type="checkbox"/> Select/Unselect All	CP %	TDN %
	Nutrient Calculated Value, \$/Unit	
Ingredients ↓		
<input checked="" type="checkbox"/> Shelled Corn	9.4	89
<input checked="" type="checkbox"/> Soybean Meal 48%	53.8	81
<input checked="" type="checkbox"/> Drought Stressed CS	10	65

INPUTS - Price Inputs

As-Fed Basis		
DM %	Price \$/Unit	Unit
84.5	8	bu
89	26	cwt
35	16	ton

OUTPUTS

Calculated	
Price	Actual
Value \$/Unit	Value \$/Unit
Predicted Value	Predicted Value
/bu	
/cwt	
/ton	

Prices

12 lb N x \$0.60
4 lb P x \$0.55
12 lb K x \$0.55

Pricing Fungicide Treated Alfalfa

Referee Feeds

Nutrients

Nutrient			INPUT			OUTPUTS	
Ingredient	CP %	NE13x M	DM %	Price \$/Unit	Unit	Predicted Value, \$/Unit	Actual Price as % of Predicted Value
Nutrient Calculated Value, \$/Unit DM							
Ingredients ↓	0.127	0.161					
<input checked="" type="checkbox"/> Shelled Corn	9	0.91	89	6.42	bu		
<input checked="" type="checkbox"/> Soybean Meal 48%	54	1	89	433.74	ton		
<input checked="" type="checkbox"/> Good Quality Hay	20	0.6	87	215.37	ton		
<input checked="" type="checkbox"/> Poor Quality Hay	16	0.5	87	79.05	ton		
<input checked="" type="checkbox"/> Corn Silage	7	0.67	35	51.32	ton		
<input type="checkbox"/> Untreated	27.87	0.761	91.76		ton	289.763 /ton	
<input type="checkbox"/> Headline	26.42	0.748	91.95		ton	283.132 /ton	
<input type="checkbox"/> Insecticide	27.98	0.762	91.74		ton	290.251 /ton	
<input type="checkbox"/> Insecticide + Headline	28.70	0.771	91.59		ton	294.104 /ton	

Treatments

Calculated price

289.763 /ton
283.132 /ton
290.251 /ton
294.104 /ton

What is the most important use you would give to FeedVal decision support tool?

Poll question!

A. Best feed buys

Purchasing decisions



B. Diet cost

Ingredients use decisions

C. Best feed sales

Sale decisions

D. Finding true feed values

Ranking feed values

E. Finding nutrient values

Use in other applications

Acknowledgement

Project Supported by the Agriculture and Food Research Initiative

Competitive Grant No. [2011-68004-30340](#)
from the USDA National Institute of Food
and Agriculture

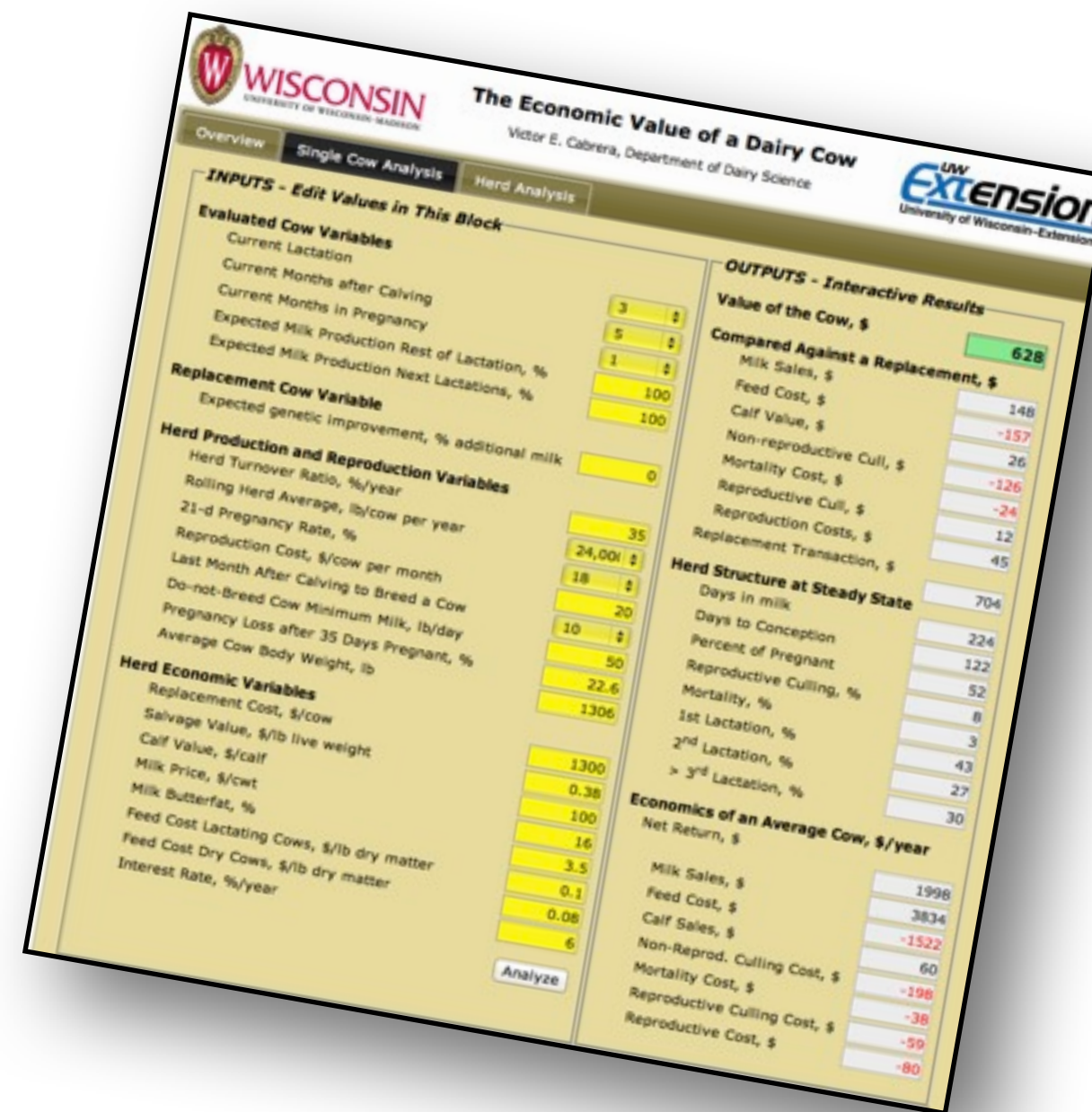


United States Department of Agriculture
National Institute of Food and Agriculture

Economic Value of a Dairy Cow

Calculates de value of a cow

Assists decision-making for replacement, reproduction, treatment, and long-term planning



What is the cow value?

What the cow value means?

Discounted future net return of a cow

- Compared to a replacement

General interpretation

- Positive (+) cow value = keep
- Negative (-) cow value = replace

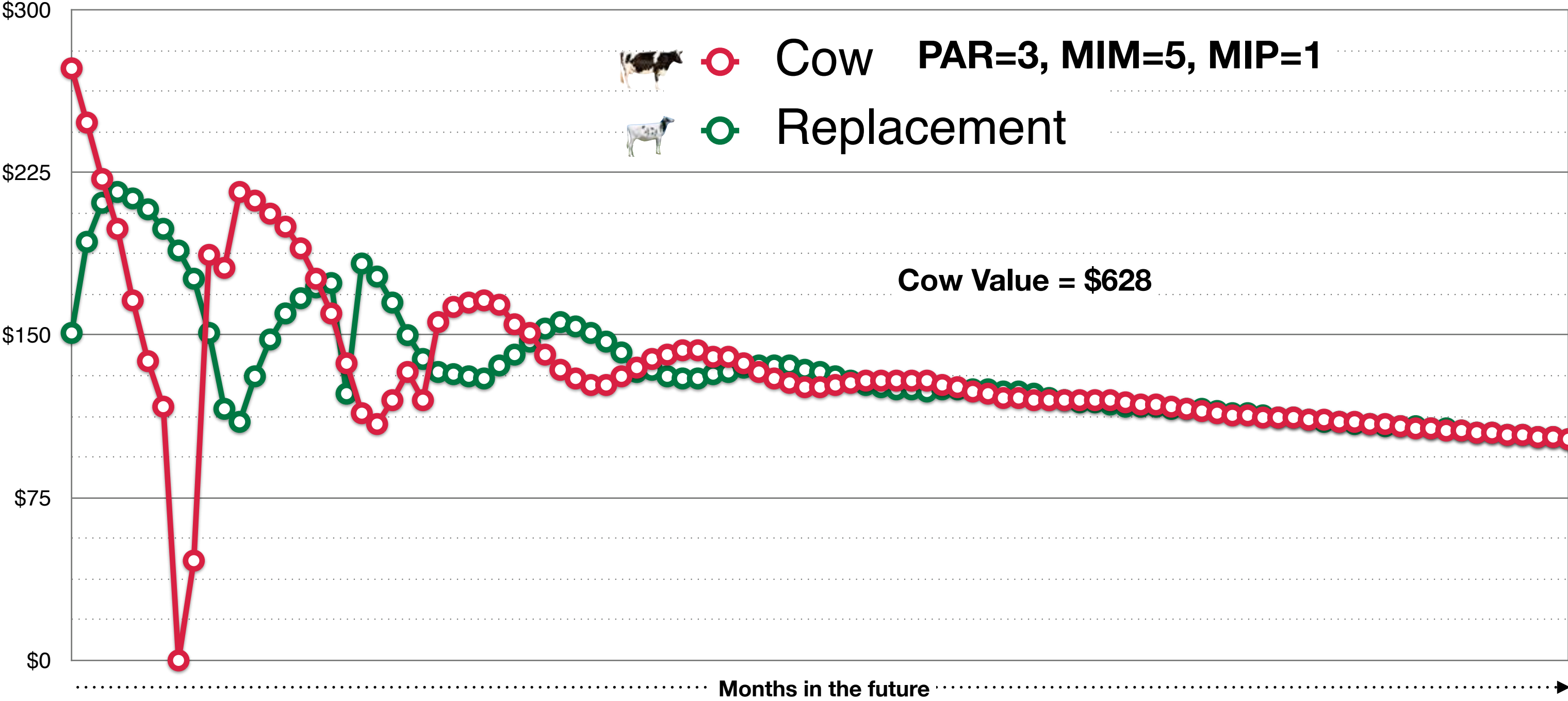


Vs.



Economic net return

Expected future net returns



Importance of the cow value

Critical economic implications

Optimal management

- Keep or replace

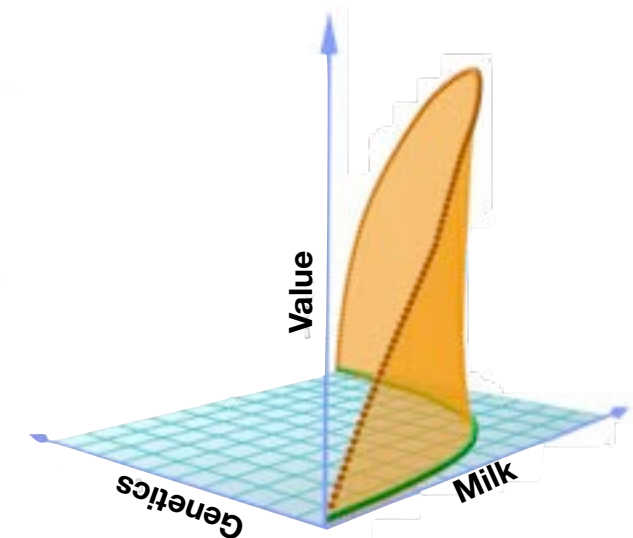
Important information

- Value of pregnancy
- Cost of pregnancy loss
- Cost of a day open



Crucial decisions

- Treat or not treat
- Breed or not breed
- Individual cow management



INPUTS - Edit Values in This Block

Evaluated Cow Variables

Current Lactation	3
Current Months after Calving	5
Current Months in Pregnancy	1
Expected Milk Production Rest of Lactation, %	100
Expected Milk Production Next Lactations, %	100

Replacement Cow Variable

Expected genetic improvement, % additional milk	0
---	---

Herd Production and Reproduction Variables

Herd Turnover Ratio, %/year	35
Rolling Herd Average, lb/cow per year	24,000
21-d Pregnancy Rate, %	18
Reproduction Cost, \$/cow per month	20
Last Month After Calving to Breed a Cow	10
Do-not-Breed Cow Minimum Milk, lb/day	50
Pregnancy Loss after 35 Days Pregnant, %	22.6
Average Cow Body Weight, lb	1306

Herd Economic Variables

Replacement Cost, \$/cow	1300
Salvage Value, \$/lb live weight	0.38
Calf Value, \$/calf	100
Milk Price, \$/cwt	16
Milk Butterfat, %	3.5
Feed Cost Lactating Cows, \$/lb dry matter	0.1
Feed Cost Dry Cows, \$/lb dry matter	0.08
Interest Rate, %/year	6

Analyze

OUTPUTS - Interactive Results

Value of the Cow, \$ **628**

Compared Against a Replacement, \$

Milk Sales, \$	148
Feed Cost, \$	-157
Calf Value, \$	26
Non-reproductive Cull, \$	-126
Mortality Cost, \$	-24
Reproductive Cull, \$	12
Reproduction Costs, \$	45
Replacement Transaction, \$	704

Herd Structure at Steady State

Days in milk	224
Days to Conception	122
Percent of Pregnant	52
Reproductive Culling, %	8
Mortality, %	3
1st Lactation, %	43
2 nd Lactation, %	27
> 3 rd Lactation, %	30

Economics of an Average Cow, \$/year

Net Return, \$	1998
Milk Sales, \$	3834
Feed Cost, \$	-1522
Calf Sales, \$	60
Non-Reprod. Culling Cost, \$	-198
Mortality Cost, \$	-38
Reproductive Culling Cost, \$	-59
Reproductive Cost, \$	-80

Most Important Factors

Other Factors

Dollar Value

Breakdown Value of the Cow

Bonus Info

INPUTS - Edit Values in This Block

Download Parameter Excel File

[Download Parameters File](#)

Upload Parameters as Excel File

Select the Excel File:

Replacement Cow Variable

Expected genetic improvement, % additional milk

Herd Production and Reproduction Variables

Herd Turnover Ratio, %/year

Rolling Herd Average, lb/cow per year

21-d Pregnancy Rate, %

Reproduction Cost, \$/cow per month

Last Month After Calving to Breed a Cow

Do-not-Breed Cow Minimum Milk, lb/day

Pregnancy Loss after 35 Days Pregnant, %

Average Cow Body Weight, lb

Herd Economic Variables

Replacement Cost, \$/cow

Salvage Value, \$/lb live weight

Calf Value, \$/calf

Milk Price, \$/cwt

Milk Butterfat, %

Feed Cost Lactating Cows, \$/lb dry matter

Feed Cost Dry Cows, \$/lb dry matter

Interest Rate, %/year

OUTPUTS - Interactive Results

Number of Cows: **1595**

Creating Excel Spreadsheet ...

Progress bar

CowID	Cow Value,\$	CowID	Cow Value,\$
3747	-5685	4846	-2687
6752	-5086	4540	-2649
4370	-4686	3838	-2614
6141	-4119	6402	-2602
5666	-4094	6050	-2579
5331	-3999	6736	-2579
6963	-3941	4174	-2572
6552	-3651	4236	-2550
4763	-3517	6918	-2525
6362	-3488	6472	-2505
4799	-3440	5508	-2488
4104	-3297	5681	-2484
5208	-3233	5940	-2440
6867	-3180	6721	-2436
4906	-3090	6633	-2430
6122	-3064	5790	-2423
6224	-3041	6801	-2420
6928	-3028	6857	-2420
6748	-2973	6820	-2388
6666	-2908	4586	-2333
3892	-2899	4264	-2323
4192	-2776	5766	-2282
3727	-2724	6303	-2282
4639	-2700	6975	-2282
4876	-2693

[Download Results as Excel Spreadsheet](#)

List of all cows in a herd

Count of cows

Same factors as individual cow

Results snapshot

Analyze results

Herd Selection Guide

Individual cow breeding and replacement decisions



AgSource

Ranked Economic Value of a Dairy Cow

Identification and Status					Reproduction					Current Lactation			Lifetime Average			Genetics		Test		
Ctrl Num	Barn Name	Lact	Calv date	DIM	Last Bred	Serv Sire	No. Serv	Days Open	Repro Status /DCC	ME Milk	LS SCC	TCI	ME Milk	LS SCC	TCI	NM\$	Gen Ind.	Milk		
3241	1522	1	9/25/11	DRY	3/29/12	7HO08946	2	186	P/233	46513	1.1		46513	1.1		99				\$4,576
3304	1585	1	1/21/12	301	5/16/12	7HO09420	2	116	P/185	43440	0.8		43440			142		78	0.9	\$3,684
3377	1658	1	8/6/12	103	10/21/12	7HO09893	1	76		42577	1.9		42577			146		131	1.3	\$3,571
3327	1608	1	3/14/12	248	6/11/12	7HO09229	2	89	P/159	42690	1.4		42690			567		109	0.9	\$3,468
3326	1607	1	4/15/12	216	7/20/12	7HO10176	2	96	P/120	41259	1.6		41259			340		112	1.5	\$3,156
3359	1640	1	6/4/12	166	10/24/12	7HO10091	2	142		42777	2.4		42777			20		125	2.2	\$3,130
3077	1358	2	1/25/12	297	11/10/12	7HO09471	6	290		39417	5.4	2404	39616	0.5	2404	318		128	3.9	\$278
3085	1367	2	7/15/12	125					N	33255	0.9	428	35944	4.6	428	71		131	1.2	\$276
2871	1154	3	1/14/12	DRY	3/25/12	7HO09052	1	71	P/237	33183	1	-913	34185	1.7	-76	344				\$273
3253	1534	2	10/28/12	20						31578	1.4	3517	34188	3.8	3517	285		119	1.4	\$273
3269	1550	1	1/22/12	DRY	3/31/12	7HO09420	1	69	P/231	34011	3.8		34011	3.8						\$270
3281	1562	1	2/4/12	287	4/15/12	7HO09165	1	71	P/216	33609	1.6		33609			185		59	1.9	\$269
2945	1228	3	9/25/12	53						27406	0.8	612	36670	1.9	226	194		115	1	\$265
3371	1652	1	8/19/12	90						33556	0.9		33556			124		100	0.8	\$256
3217	1499	2	10/8/12	40						17783	1.2	-6148	26926	3.3	-6148			47	1.1	(\$3,473)
3429	1710	1	10/29/12	19						23564	2.1		23564					53	2.1	(\$3,654)
3421	1702	1	10/30/12	18						19546	1.7		19546					34	1.7	(\$5,128)
3428	1709	1	10/11/12	37						19173	1.6		19173					41	0.8	(\$5,151)
3400	1681	1	10/18/12	30						18936	1.6		18936					41	1.6	(\$5,384)
3389	1670	1	10/18/12	30						17321	1.3		17321					34	1.3	(\$5,958)

Model illustration

Average cow and replacement, lactation 2

Open cow value

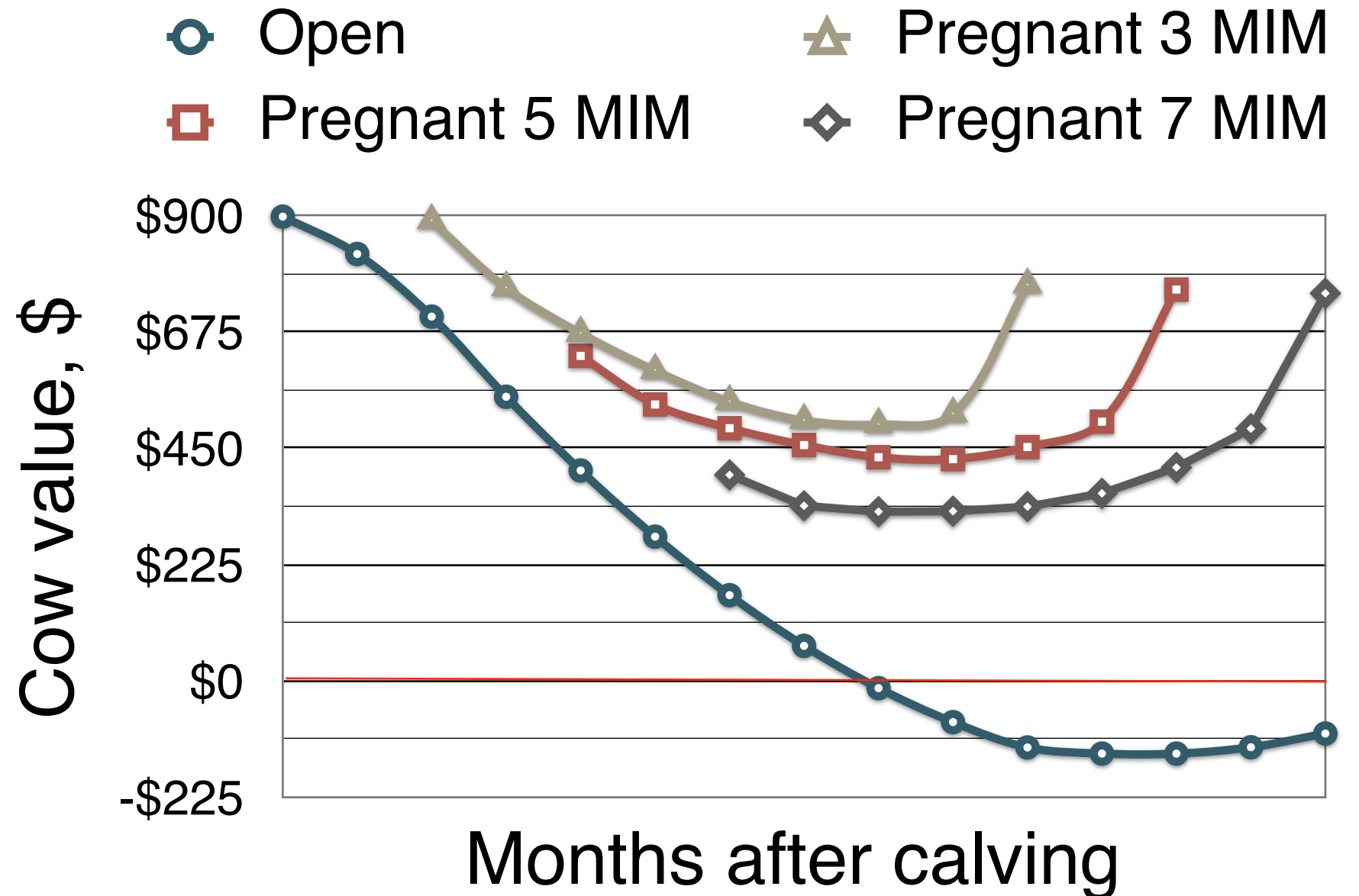
- Decreases
- Becomes negative

Pregnant cow value

- Higher than open
- U-shaped
- Similar value at calving

Overall cow value

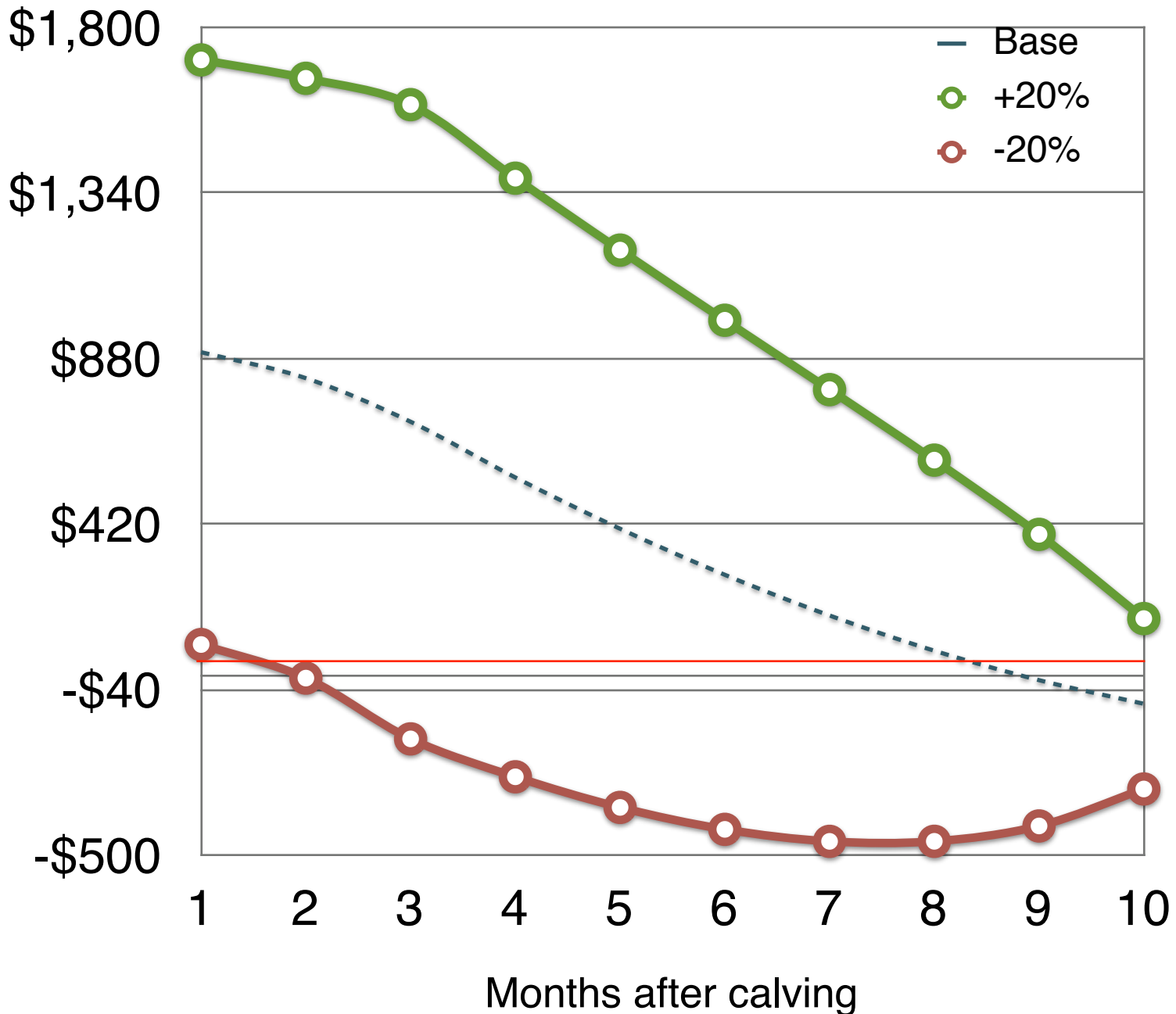
- Increases to 3rd or 4rd lactation then decreases



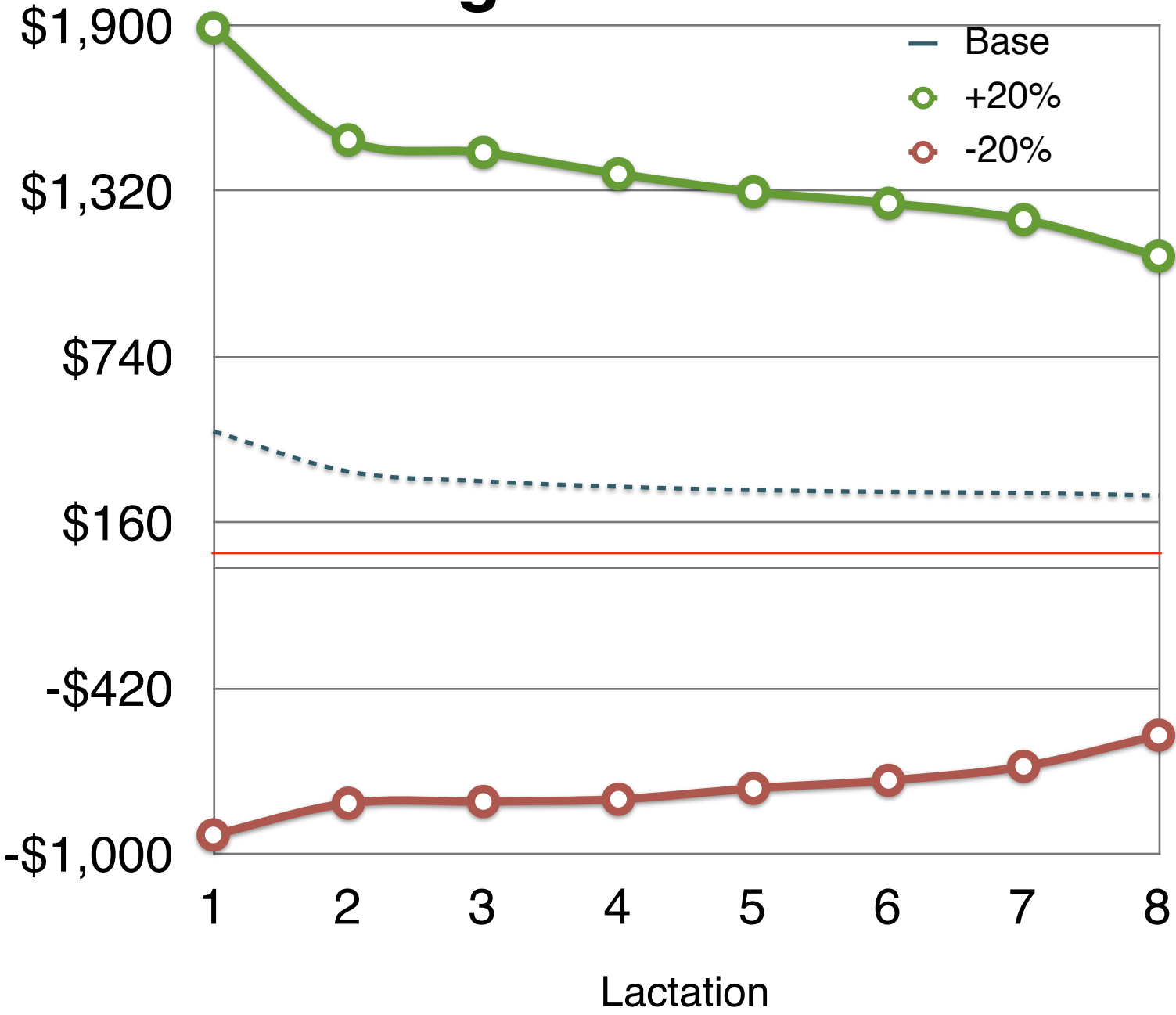
Model illustration

The impact of expected milk productivity, next lactations

Non-pregnant, lactation 2



2 months pregnant, 8 months lactating

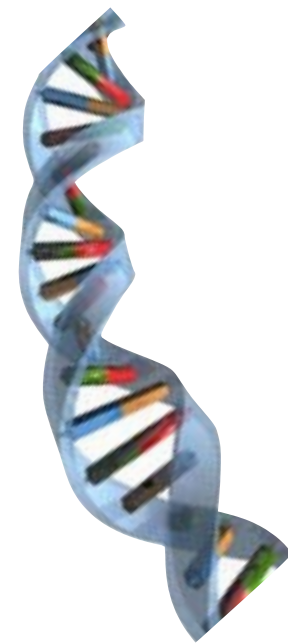


Model illustration

The impact of genetic gain with a replacement

Replacement genetic gain

- Cow value is \$211 lower for every 1% expected improved milk productivity of a replacement



What is the most important use you would give to the economic value of a dairy cow tool?

Poll question!

A. Replacement

Better culling decisions



B. Health

Disease treatment decisions

C. Reproduction

Cow level adjustments

D. Feeding

Diet and feeding decisions

E. Calculate metrics for decision-making

Value of a new pregnancy, cost of a pregnancy loss, etc.

Acknowledgement

Project Supported by the Agriculture and Food Research Initiative

Competitive Grant No. [2010-85122-20612](#)
from the USDA National Institute of Food
and Agriculture



United States Department of Agriculture
National Institute of Food and Agriculture



Thanks

Upcoming Hoard's Dairyman webinars:

March 11, 2013

ABCs of alfalfa harvest

presented by Ev Thomas, William H. Miner Ag Research Institute

sponsored by W-L Alfalfas

April 8, 2013

Getting your money's worth from feed

presented by Mike Hutjens, University of Illinois

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Hoard's Dairyman Webinar

“New dairy software tools and they’re free”

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