

Real Herds...Real Heifers

The Cost of Raising Dairy Replacements

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Intuitive Cost of Production Analysis (ICPA)

- An analysis system that calculates producer-specific costs and labor efficiencies associated with raising dairy replacements
- Evaluates cost and labor efficiencies
- Provides economic and labor efficiency benchmarks for dairy herd replacements



2013 ICPA Project

- 36 Wisconsin operations
 - ◆ Tie-stall operations
 - ◆ Free-stall operations
 - ◆ Custom calf and/or heifer grower operations
- 12 different counties
- Two enterprises
 - ◆ Calf
 - ◆ Heifer



Calf Enterprise

- Calf - An animal raised from birth until she is moved to group housing
- 30 operations evaluated
 - ◆ 12 tie-stall operations
 - ◆ 13 free-stall operations
 - ◆ 5 custom calf growers
- Feeding, management, housing and labor data was collected



Key Assumptions

Item	Assumption
Calf value	\$150 per calf
Labor (paid and unpaid)	\$13 per hour
Management (paid and unpaid)	\$22 per hour
Interest rate	4.5 percent
Pasteurized Waste Milk	\$5 per cwt
<u>Replacement value of calf housing</u>	
Homemade calf hutch	\$200
Purchased calf hutch	\$400
Greenhouse barn	\$10 per square foot
Post-Frame calf barn	\$15.50 per square foot



Calf Cost Centers (also applicable for Heifers)

- Feed Costs
- Labor and Management
- Other Variable Costs
 - ◆ Bedding
 - ◆ Veterinary
 - ◆ Death loss
 - ◆ Interest
- Fixed Costs
 - ◆ Buildings
 - ◆ Equipment



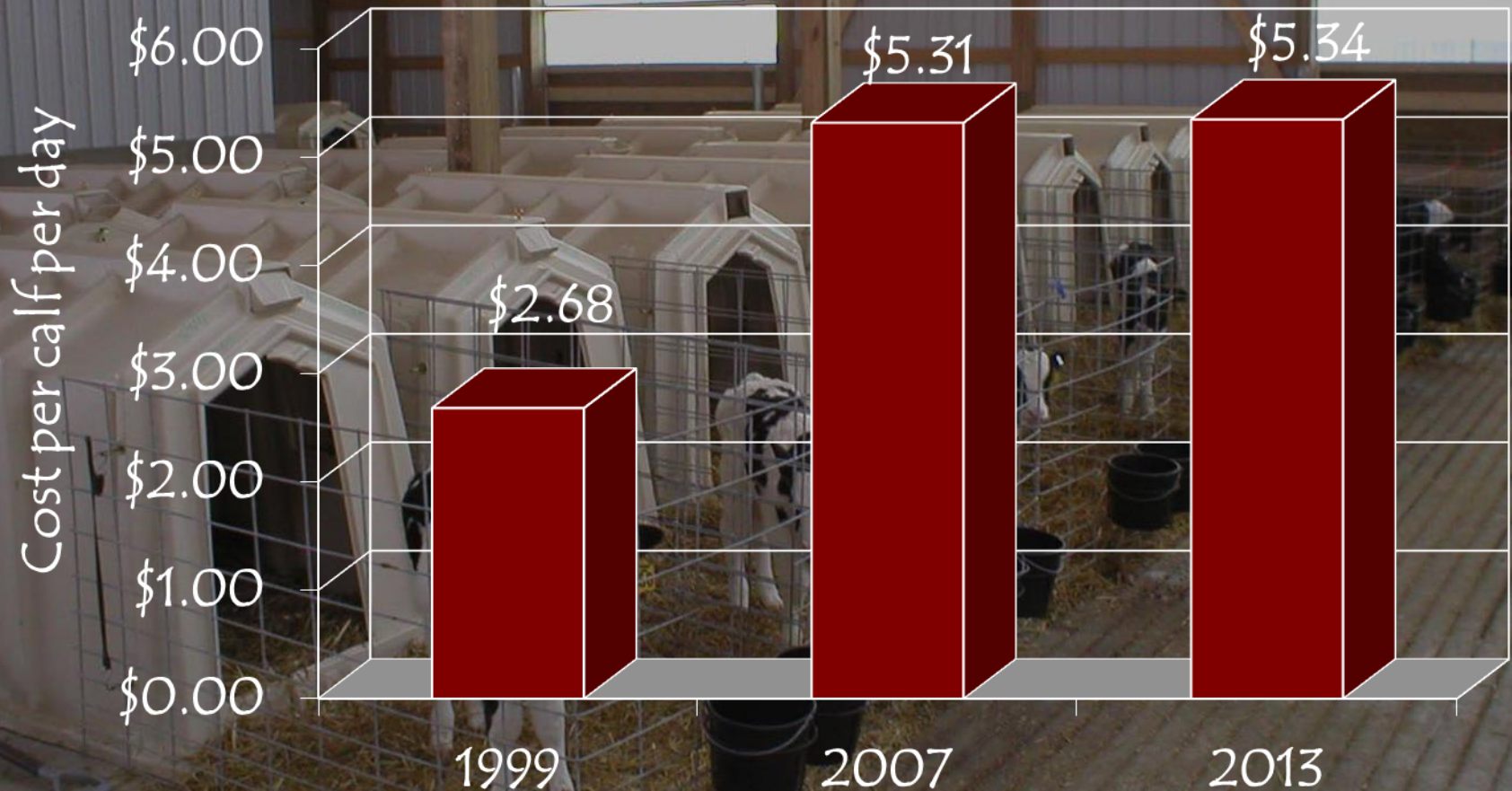
Cost of Raising a Calf in Wisconsin*

	1999	2007	2013
Total Cost	\$160.26	\$326.07	\$363.69
Daily Cost	\$2.68	\$5.31	\$5.34
Days on Feed	59.7	61.36	68.6
Weaning Age (weeks)	7.4	7.04	7.61

*Does not include \$150 calf value



Comparison of Daily Calf Raising Costs*



*Does not include \$150 calf value

Daily Calf Raising Costs*



*Does not include \$150 calf value

Cost Per Day To Raise A Calf

Calf Cost per Day*

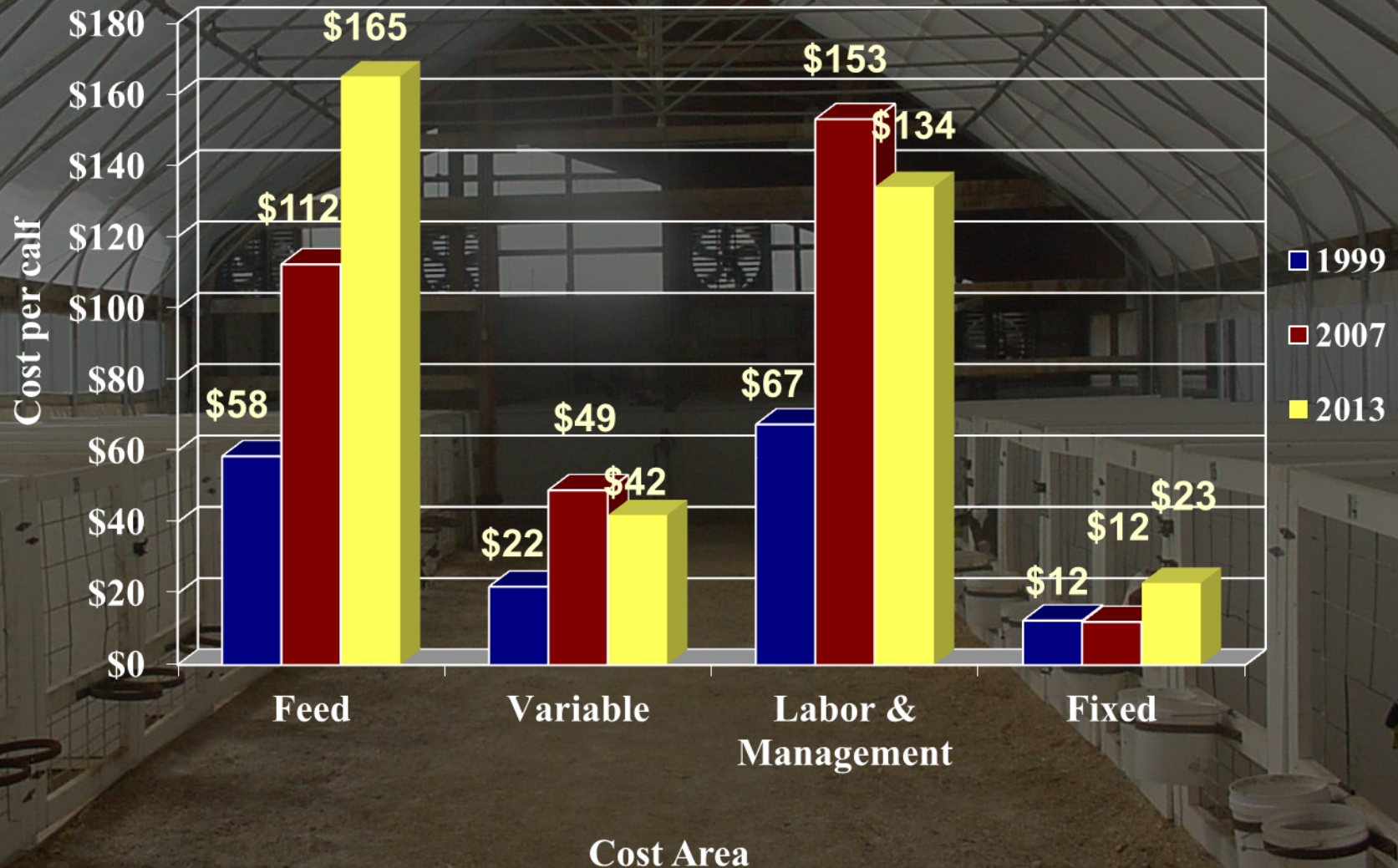
	Tie-Stall	Free-Stall	Grower	All
Feed Costs	\$2.44	\$2.36	\$2.00	\$2.37
Labor & Management	\$2.29	\$2.07	\$0.96	\$1.99
Other Variable Costs	\$0.54	\$0.66	\$0.63	\$0.64
Fixed Costs	\$0.21	\$0.50	\$0.21	\$0.35
Total Cost	\$5.48	\$5.59	\$3.81	\$5.34

***Does not include \$150 calf value**



Comparison of Calf Raising Costs

1999 vs 2007 vs 2013



Take Home Message(s)

- The opportunity cost in the UW-Extension ICPA studies conducted in 1999, 2007, and 2013 varied from \$100 (1999), \$150 (2013) to \$500 (2007) per calf.
- Almost all custom calf raisers used pasteurized milk instead of milk replacer. As a result, across all herds the cost of liquid feed fed to dairy calves only increased 9.3% between 2007 and 2013.



Take Home Message(s)

- Calf starter prices tripled between 2007 and 2013.
- Due to increases in labor and management efficiency, labor and management costs to raise dairy calves decreased.



Heifer Enterprise

A photograph of several black and white heifers in a grassy field. The heifers are standing in a line, facing towards the right. The background is a clear blue sky. The heifers have distinctive black and white patches.

- Heifer - An animal raised in group housing to time of freshening, or in the case of the custom heifer grower, the time the heifer is returned to the producer
- Feeding, management, housing and labor data was collected

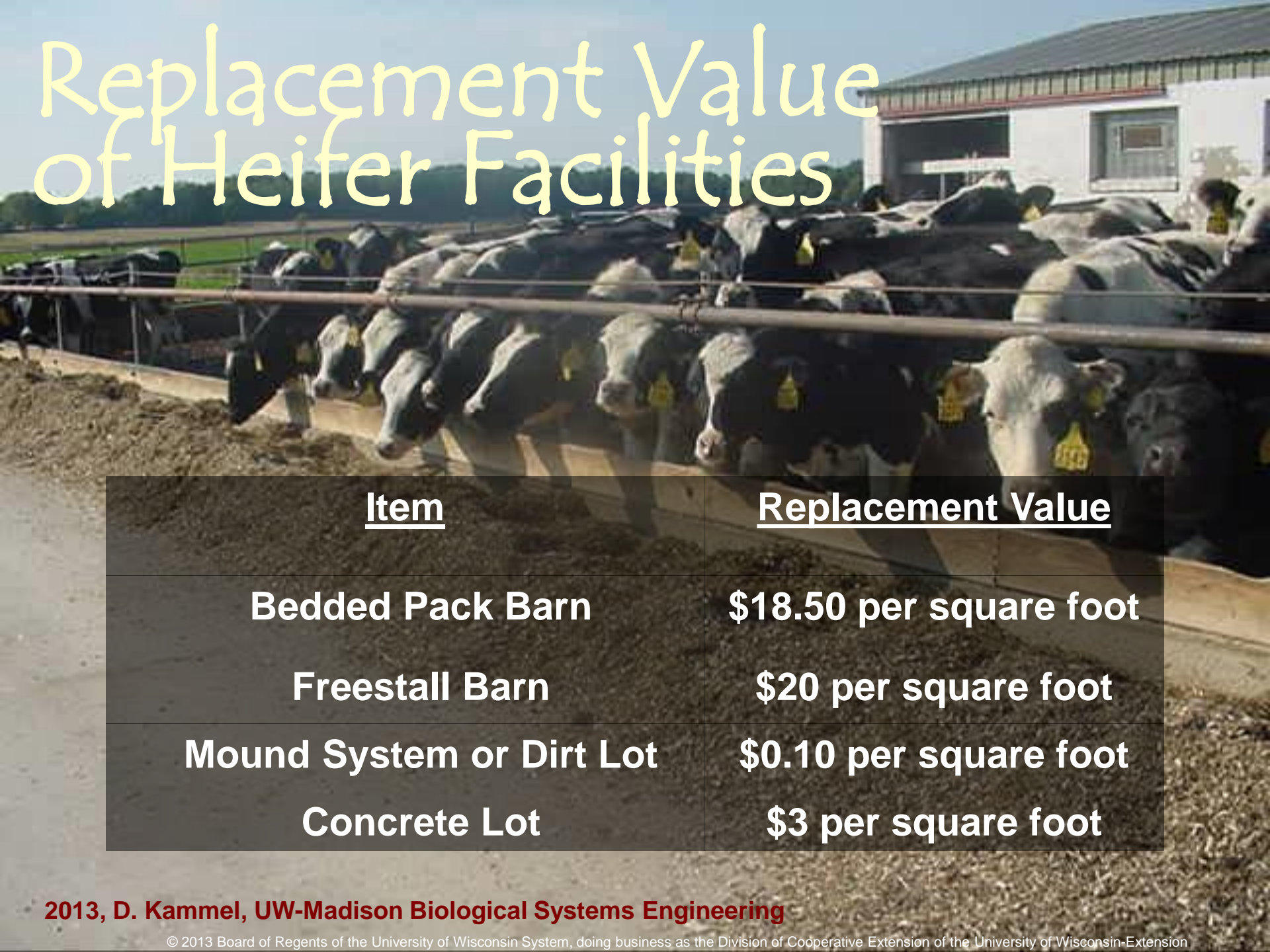
Key Assumptions...



Item	Defined Inputs
Feed Costs:	
Legume Silage	\$200 per ton DM
Corn Silage	\$140 per ton DM
Corn	\$250 per ton DM
Weigh-backs	\$150 per ton DM
Soybean Meal	\$375 per ton DM
Labor	\$13.00 per hour
Management	\$22.00 per hour
Interest rate	4.5%



Replacement Value of Heifer Facilities



<u>Item</u>	<u>Replacement Value</u>
Bedded Pack Barn	\$18.50 per square foot
Freestall Barn	\$20 per square foot
Mound System or Dirt Lot	\$0.10 per square foot
Concrete Lot	\$3 per square foot

2013, D. Kammel, UW-Madison Biological Systems Engineering

About the operations...

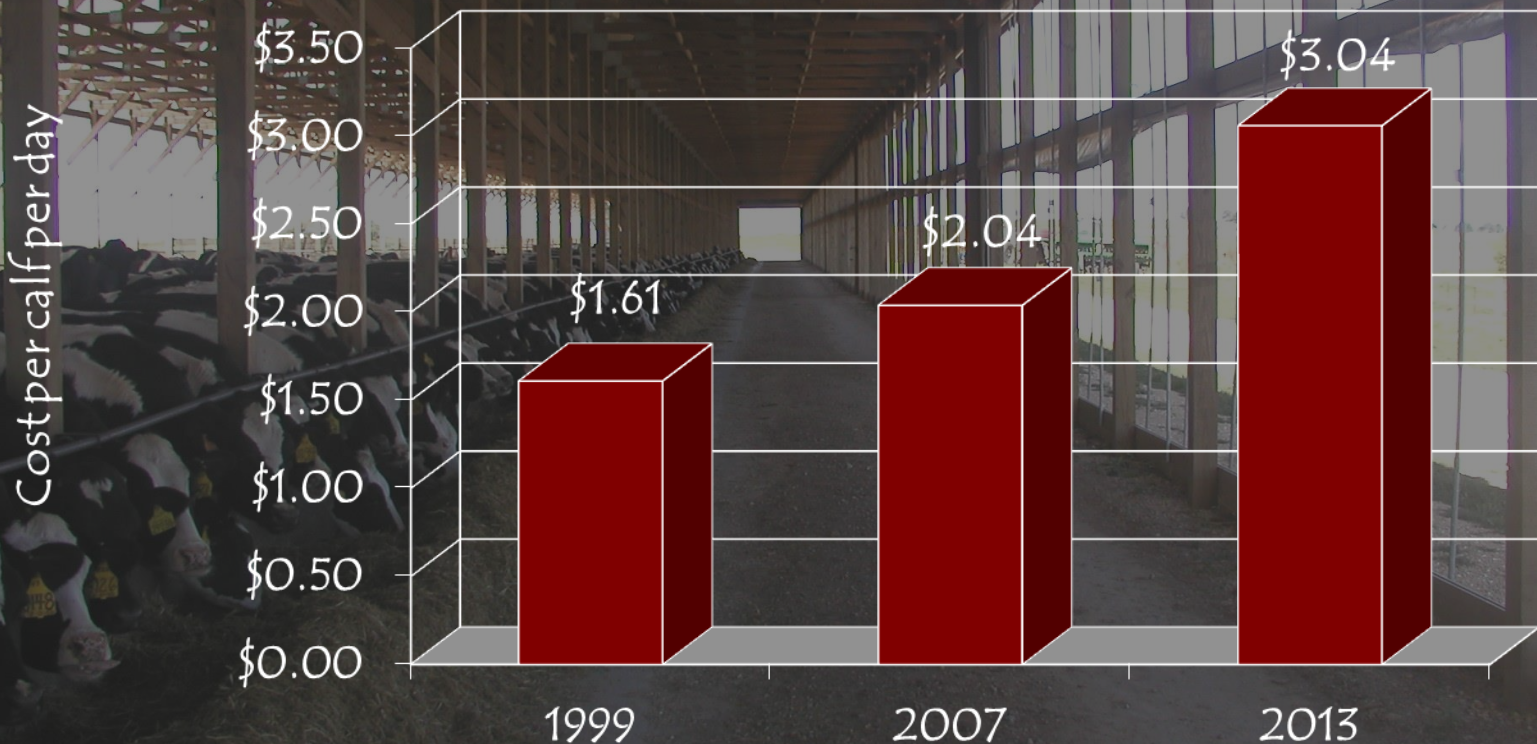
- 32 operations evaluated
 - ◆ 12 tie-stall operations
 - ◆ 13 free-stall operations
 - ◆ 7 custom heifer growers
- Feeding, management, housing and labor data was collected

Cost of Raising a Heifer in Wisconsin*

	1999	2007	2013
Total Cost	\$1099.12	\$1322.70	\$1863.19
Daily Cost	\$1.61	\$2.04	\$3.04
Days on Feed	683	648	628

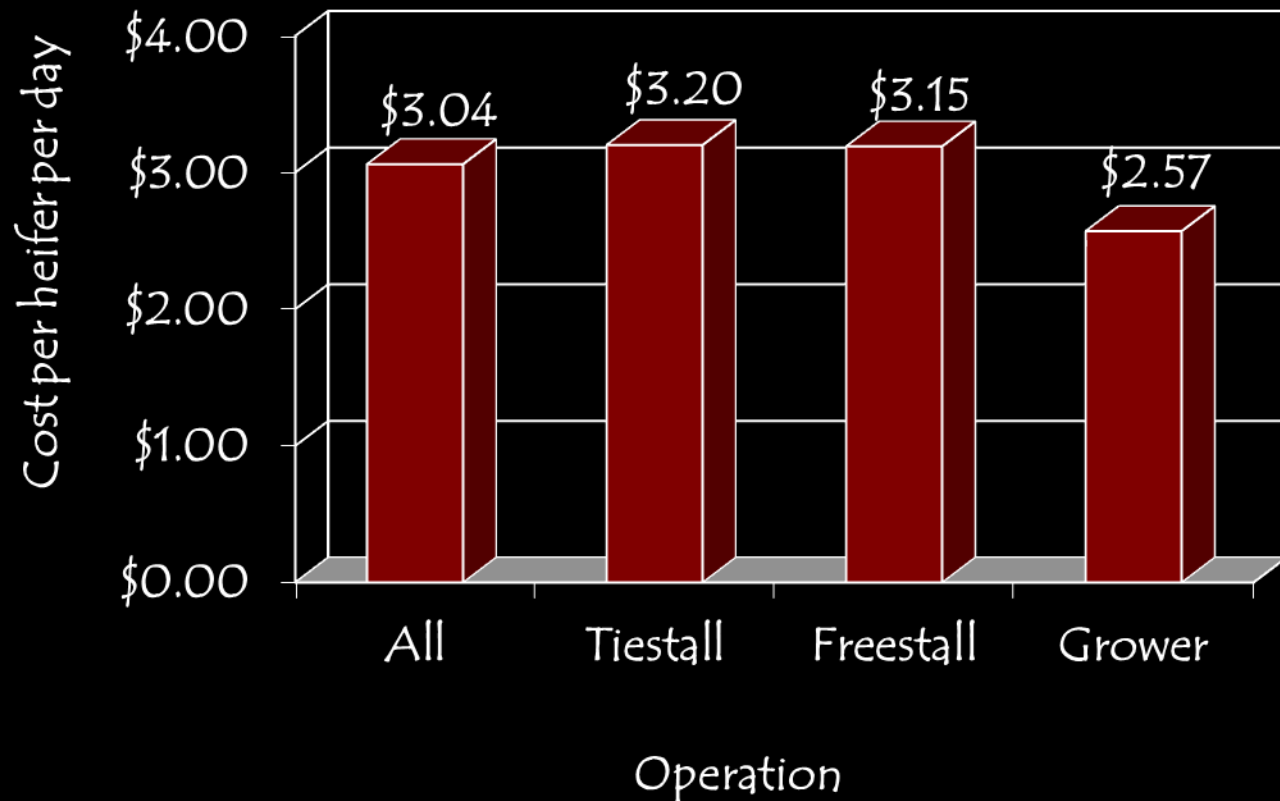
*Does not include \$150 calf value

Comparison of Daily Heifer Raising Costs*



***Does not include \$150 calf value**

Daily Heifer Raising Costs*



***Does not include \$150 calf value**

Cost Per Day To Raise A Heifer

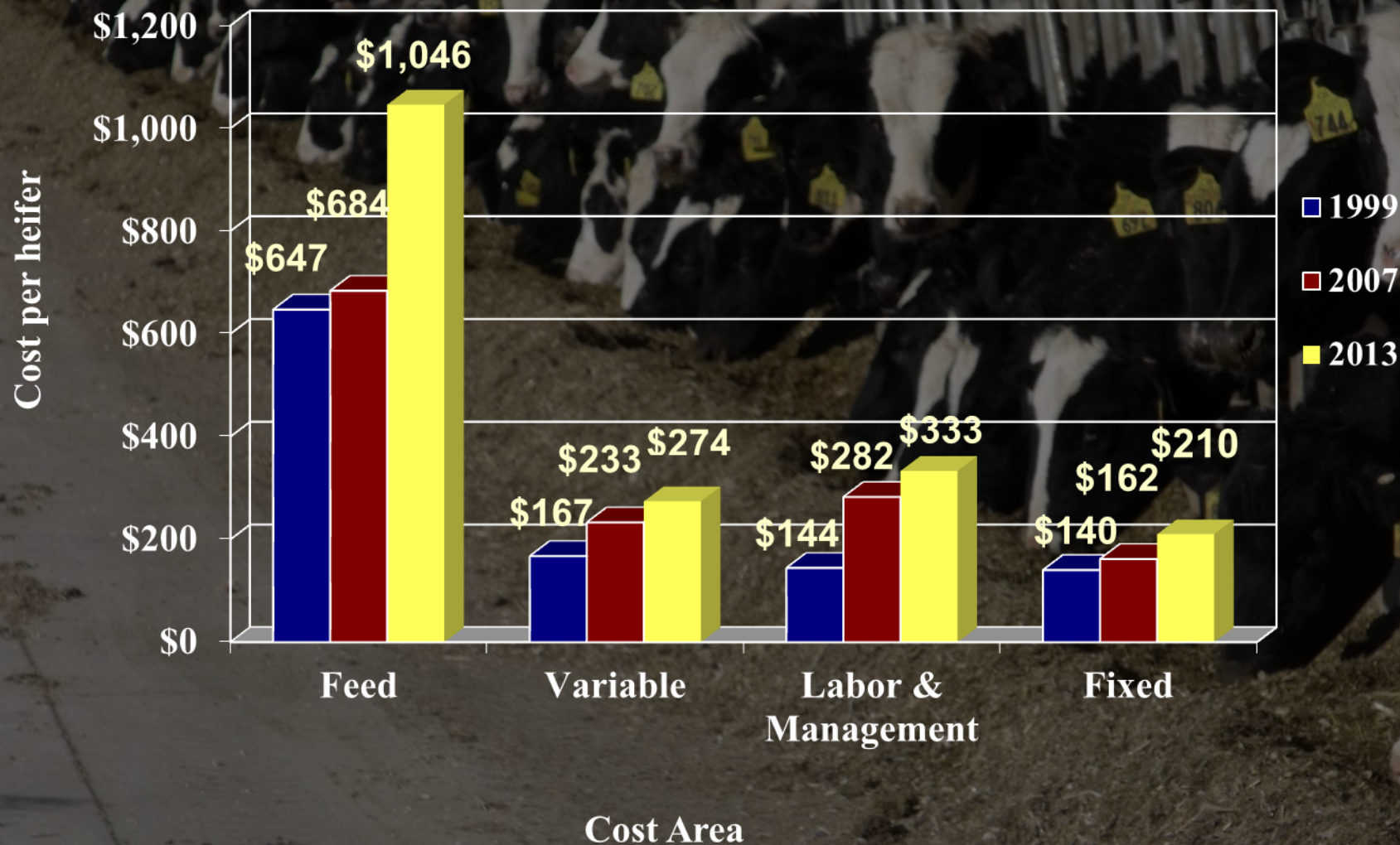
Heifer Cost per Day*

	Tiestall	Freestall	Grower	All
Feed Costs	\$1.66	\$1.83	\$1.55	\$1.71
Labor & Management	\$0.66	\$0.51	\$0.39	\$0.54
Other Variable Costs	\$0.46	\$0.49	\$0.35	\$0.44
Fixed Costs	\$0.42	\$0.33	\$0.29	\$0.35
Total Cost	\$3.20	\$3.15	\$2.57	\$3.04

***Does not include \$150 calf value**



Comparison of Heifer Raising Costs 1999 vs 2007 vs 2013



Total Cost to Raise a Dairy Replacement from Birth to Freshening*

	1999	2007	2013
Total Cost	\$1259.38	\$1648.77	\$2226.88
Days on Feed	743	709	680
Calving Age (months)	24.6	23.9	23.4

*Does not include \$150 calf value

Total Cost to Raise a Dairy Replacement from Birth to Freshening

1999 vs 2007 vs 2013



Take Home Message(s)

- Custom heifer growers do not typically raise dairy heifers to calving thus total days on feed are less for heifers raised on custom heifer rearing operations.
- The cost of semen and breeding services are sometimes paid by the owner therefore breeding cost may be artificially low.



Take Home Message(s)

- The total cost to raise a dairy replacement from birth to calving on Wisconsin dairy and custom calf and heifer operations (not counting the opportunity cost of the calf) has increased approximately \$600 from 2007 to 2013.
- The majority of the increase is due to increased feed and labor costs.



Cost of Raising a Heifer in Wisconsin* (2014 Adjusted Feed Expense)

	2013	Example 2013	Example 2014
Total Cost (Ave)	\$1863.19	\$2221.27	\$2154.82
Total Cost (T/S)	\$1955.89		
Daily Cost	\$3.04	\$3.48	\$3.38
Feed Cost (Ave)	\$1.71		
Feed Cost (T/S)	\$1.66	\$1.57	\$1.47
Days on Feed	611	638	638

$$.10/\text{hd}/\text{day} \times 638 = \$63.80$$

*Does not include \$150 calf value

Thank You...

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For more information please refer to:

ICPA Information Website

tinyurl.com/kgd2npy

