



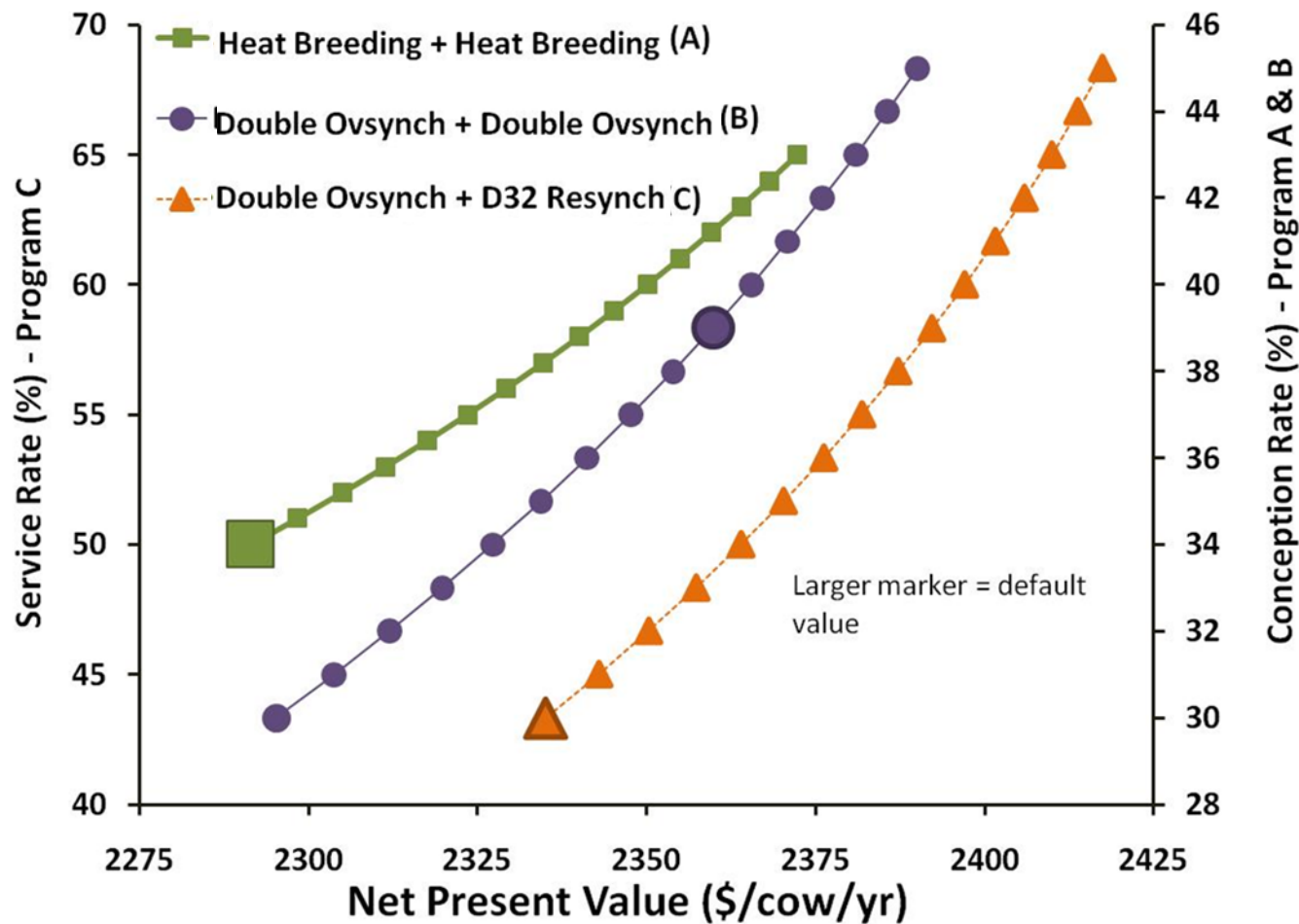
# Wisconsin Report

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# Economics of Reproductive Programs

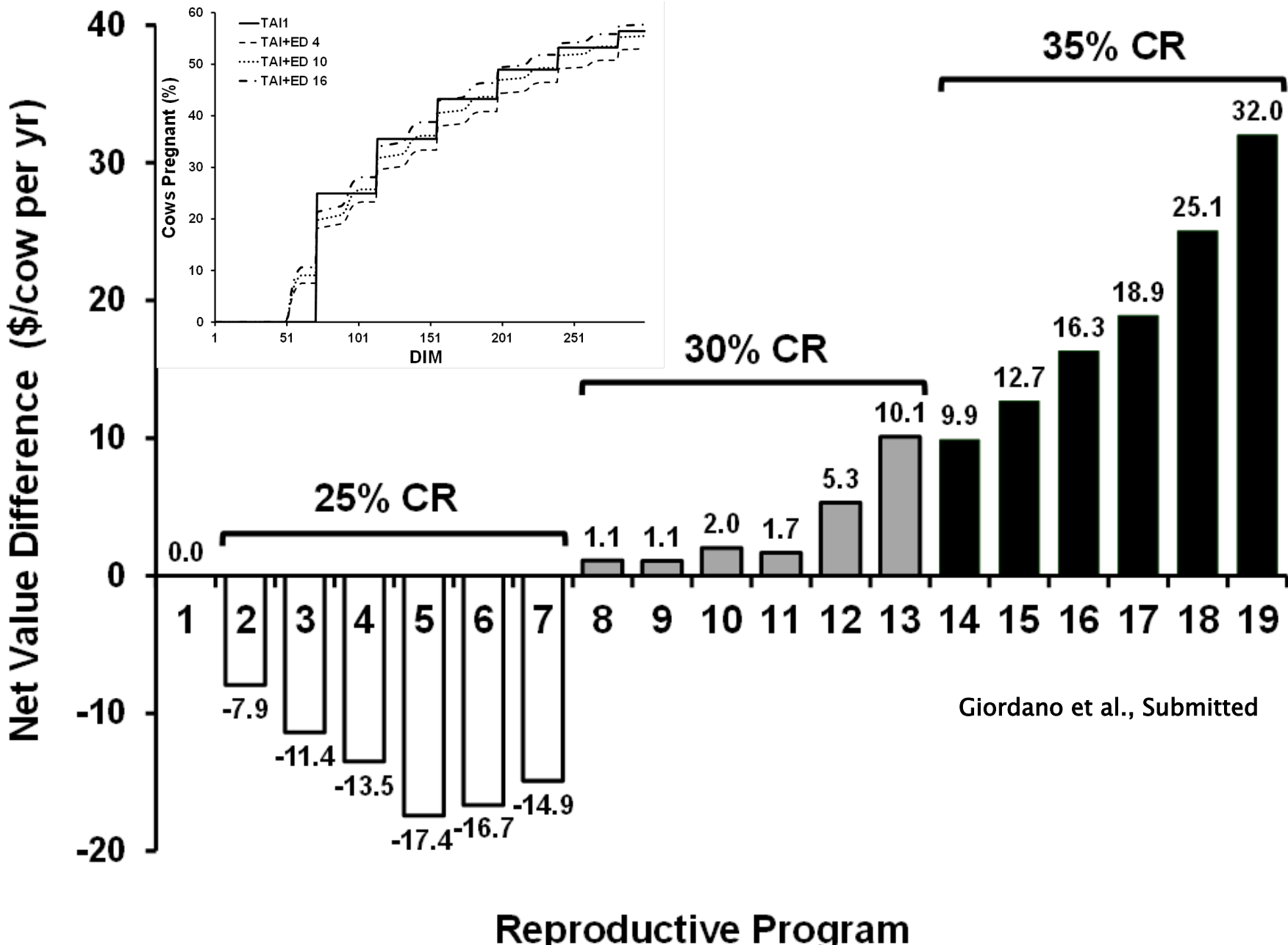


Giordano et al., 2011





# The Economic Value of Reproduction



# Mild and Moderate Clinical Mastitis

On-farm			Primiparous cows (\$)			Multiparous cows (\$)		
Culture	OFC Results	Treatment	A	B	C	A	B	C
<b>OFCW<sup>1</sup></b>			-324.33	-368.10	-317.27	-264.20	-429.66	-262.67
	Gram-positive	Do not treat	-264.94	-369.16	-239.86	-392.01	-529.95	-431.76
		Treat 2d	<b>-251.32</b>	<b>-362.53</b>	<b>-222.40</b>	<b>-366.97</b>	<b>-517.49</b>	<b>-401.01</b>
		Treat 5d	-285.65	-389.11	-255.31	-406.42	-549.08	-437.79
		Treat 8d	-321.85	-411.59	-289.98	-447.33	-574.95	-475.95
	Gram-negative	Do not treat	<b>-340.12</b>	<b>-378.58</b>	<b>-323.39</b>	<b>-266.35</b>	<b>-289.61</b>	<b>-255.35</b>
		Treat 2d	-362.25	-400.41	-345.65	-290.05	-313.41	-279.02
		Treat 5d	-409.42	-447.41	-392.89	-344.75	-368.22	-333.66
		Treat 8d	-459.50	-497.44	-442.99	-405.13	-428.25	-394.20
	"no growth"	Do not treat	<b>-383.80</b>	<b>-383.60</b>	<b>-383.59</b>	<b>-159.60</b>	<b>-159.82</b>	<b>-158.44</b>
		Treat 2d	-414.18	-413.98	-413.97	-199.47	-199.69	-198.31
		Treat 5d	-460.60	-460.40	-460.39	-260.16	-260.38	-259.00
		Treat 8d	-507.95	-507.75	-507.74	-322.88	-323.10	-321.72
<b>OFC<sup>2</sup></b>			-325.36	-364.15	-321.57	-263.79	-422.65	-266.39
	Gram-positive	Stop treat	-271.69	-375.91	-246.61	-398.76	-536.70	-438.51
		Continue 1d	<b>-241.73</b>	<b>-354.00</b>	<b>-212.81</b>	<b>-353.25</b>	<b>-504.59</b>	<b>-387.56</b>
		Continue 4d	-275.27	-379.99	-244.94	-392.08	-535.45	-423.71
		Continue 7d	-311.17	-402.15	-279.31	-432.68	-560.98	-461.55
	Gram-negative	Stop treat	<b>-346.87</b>	<b>-385.33</b>	<b>-330.14</b>	<b>-273.10</b>	<b>-296.36</b>	<b>-262.10</b>
		Continue 1d	-353.79	-392.02	-337.16	-279.27	-302.53	-268.28
		Continue 4d	-399.97	-437.99	-383.44	-332.14	-355.68	-321.02
		Continue 7d	-449.80	-487.77	-433.28	-392.28	-415.46	-381.32
	"no growth"	Stop treat	<b>-390.55</b>	<b>-390.35</b>	<b>-390.34</b>	<b>-166.35</b>	<b>-166.57</b>	<b>-165.19</b>
		Continue 1d	-405.74	-405.54	-405.53	-186.28	-186.50	-185.13
		Continue 4d	-451.85	-451.65	-451.64	-246.37	-246.59	-245.21
		Continue 7d	-498.94	-498.74	-498.73	-308.84	-309.06	-307.69
<b>NO OFC<sup>3</sup></b>			-323.10	-361.44	-313.89	-266.62	-420.57	-261.28
		Do not treat	<b>-323.10</b>	-366.74	<b>-313.89</b>	-266.97	-432.38	<b>-261.28</b>
						<b>-266.62</b>	<b>-420.57</b>	-267.70

A=Base prevalence, B=High prevalence contagious, C=High prevalence coliforms

<sup>1</sup>Use on-farm culture and wait 24 hours for microbiology results to base treatment on diagnostic

<sup>2</sup>Use on-farm culture and treat immediate then after 24 hours, the treatment is readjusted based on diagnostic. <sup>3</sup>Do not to use OFC

# Optimal LGM–Dairy: Risk Aversion

Deductible and corresponding subsidy	Items of comparison	Constant Relative Rate of Risk Aversion ( $\theta$ ) <sup>1</sup>				
		0.5	1	2	3	4
<b>No deductible and 18% subsidy</b>	Total optimal coverage (% milk produced)	70%	82%	85%	87%	87%
	Mean of net expected return (\$)	112,743	113,030	113,094	113,264	113,261
	Standard deviation of net expected return (\$)	11,149	10,356	10,140	10,115	10,107
	Net guaranteed income over feed cost (\$/cwt)	10.17	10.32	10.38	10.55	10.54
<b>\$0.5 per cwt milk and 28% subsidy</b>	Total optimal coverage (% milk produced)	75%	80%	84%	84%	84%
	Mean of net expected return (\$)	113,013	113,119	113,252	113,271	113,272
	Standard deviation of net expected return (\$)	12,209	11,713	11,529	11,510	11,509
	Net guaranteed income over feed cost (\$/cwt)	9.98	10.12	10.15	10.16	10.16
<b>\$1.1 per cwt milk and 50% subsidy</b>	Total optimal coverage (% milk produced)	85%	91%	95%	95%	95%
	Mean of net expected return (\$)	113,404	113,652	113,805	113,829	113,829
	Standard deviation of net expected return (\$)	13,469	13,220	13,112	13,099	13,099
	Net guaranteed income over feed cost (\$/cwt)	9.74	9.81	9.84	9.85	9.85
<b>\$2 per cwt milk and 50% subsidy</b>	Total optimal coverage (% milk produced)	83%	83%	83%	83%	83%
	Mean of net expected return (\$)	112,524	112,524	112,523	112,523	112,523
	Standard deviation of net expected return (\$)	15,022	15,022	15,022	15,023	15,023
	Net guaranteed income over feed cost (\$/cwt)	9.36	9.30	9.30	9.30	9.30

<sup>1</sup>Optimal insurance contract (% milk produced at farm) under different risk aversion levels and deductibles with subsidies

# LP Optimization

	Z	Y		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1				Lactation Number																			
2				Keep the Cow										Replace the Cow									
3				1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
4	Max Net Return																						
5	\$1,305			33.85%	25.39%	17.26%	11.05%	6.63%	3.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.04%	0.00%	0.00%	0.00%
6																							
7				Expected Net Return																			
8	Constraints			\$1,000	\$1,500	\$2,000	\$1,500	\$1,000	\$500	\$300	\$200	\$100	-\$400	-\$500	-\$500	-\$500	-\$500	-\$500	-\$500	-\$500	-\$500	-\$500	-\$500
9	1	1																					
10	0	0	Lactation Number	1	75%	-32%	-36%	-40%	-43%	-46%	-50%	-54%	-57%	-100%	-1	-1	-1	-1	-1	-1	-1	-1	-1
11	0	0		2	-75%	1										1							
12	0	0		3		-68%	1										1						
13	0	0		4			-64%	1										1					
14	0	0		5				-60%	1										1				
15	0	0		6					-57%	1										1			
16	0	0		7						-54%	1										1		
17	0	0		8							-50%	1										1	
18	0	0		9								-46%	1										1
19	0	0		10									-43%	-100%									

Cabrera and Hildebrand, 2011



# Grazing Feeding Strategies

	Winter (January)			Summer (June)		
	CON	GRA	ORG	CON	GRA	ORG
<b>Feed Ingredient (kg DM/cow/d)</b>						
Grain mix	6.3	4.0	4.3	3.0	4.0	4.3
Protein mix	3.6	0.5	0.0	7.7	0.3	0.0
Hay	8.6	13.1	8	3.8	3.6	1.3
Corn silage	4.3	3.0	1.3	4.3	3.0	1.3
haylage/baleage	1.8	3.0	1.3	1.8	6.9	1.5
<b>Milk Production (kg/cow/d)</b>	27.3	20.0	10.4	28.2	22.0	15.0
<b>Cost of Feed (\$/cow/d)</b>	2.6	1.5	1.5	3.5	1.6	1.3
<b>Milk Price (\$/100 kg)</b>	34.5	35.8	62.1	32.4	32.3	58.2
<b>Income over Feed Cost IOFC (\$/cow/d)</b>	<u>6.8</u>	5.7	5.0	5.7	5.5	<u>7.5</u>

CON=Conventional, GRA=Grazing, ORG=Organic Dairy Farms

Dutreuil et al., 2011





# Business Production Survey

Farm Enterprise	Planning to Expand (N=78)	Not Planning to Expand (N=222)
<b>Dairy: Milking Herd</b>		
# of Cows	247.4	82.1
Rolling Herd Average (RHA, lbs)	21,747	20,642
<b>Milking per Day (%)</b>		
2x	72.0	94.5
3x	28.0	5.5
<b>Age (Mean)</b>	47.1	51.2
<b>Male</b>	94.8	95.5
<b>Female</b>	5.2	4.5
<b>3 Most Important Reasons Given for Expansion/No Expansion (%)</b>		
1 ↑ farm's net income	46.6	Maintain best size 36.8
2 ↓ production costs	24.1	Avoid costly investments 18.4
3 Other	20.7	Avoid stress 16.7

Cabrera and Janowski, 2011



# Feed Efficiency and Grouping

## Dairy Management - Grouping Cows to improve IOFC

Overview | Upload Farm Details | **Group Cows** | Reap Benefits | Sample Farm: Total Cows = 470

Do you group and feed different diets to lactating cows?  
**YES**

What criteria do you use to group lactating cows?  
 ??

How many groups can you handle and feed different diets to?  
 ??

How many groups can you handle and feed different diets to?  
 ??

How do you group your lactating cows?  
 ??

BACK

How many groups do you have for your lactating cows?

Two  
 Three  
 Four

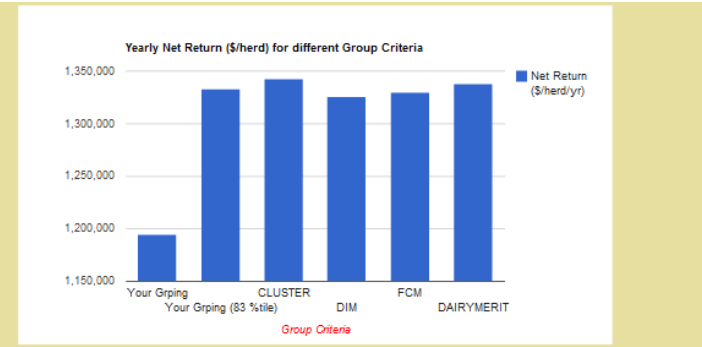
How many groups can you handle?

Two  
 Three  
 Four

Please enter the size of each group that you can handle.

Group	Size
Group1	100
Group2	100
Group3	100
Group4	170

NEXT



Click on the Group Criteria names (in blue/red) to know the actual distribution of cows across different groups.

Group Criteria	Group Number	Group Cows	NEL (Mcal/lb)	CP (%)	IOFC	Cost of Management			Savings on Additives	Total (\$/herd/yr)
						Depression	Depression	Depression		
<b>YOUR GROUPING (Current Diets)</b>	1	200	0.82	18.00	5.14					
	2	270	0.77	17.00	8.31					
	Mean		0.79	17.43	6.96	-0.00	-0.00	0.00	6.96	1,194,569
<b>YOUR GROUPING (83 Percentile Diets)</b>	1	200	0.67	14.71	6.36					
	2	270	0.71	16.05	8.81					
	Mean		0.69	15.48	7.77	-0.00	-0.00	0.00	7.77	1,332,807
<b>CLUSTER</b>	1	170	0.72	16.38	9.87					
	2	100	0.67	14.86	8.49					
	3	100	0.65	14.18	7.19					
	4	100	0.62	13.07	4.67					
	Mean		0.68	14.89	7.90	-0.07	-0.01	0.01	7.82	1,342,372
<b>DIM</b>	1	100	0.74	16.64	9.00					
	2	100	0.70	15.70	9.20					
	3	170	0.68	15.04	7.66					
	4	100	0.65	14.10	5.46					
	Mean		0.69	15.32	7.81	-0.07	-0.01	0.01	7.73	1,325,878
<b>FCM</b>	1	170	0.72	16.33	10.14					
	2	100	0.69	15.21	7.99					
	3	100	0.66	14.66	6.83					
	4	100	0.63	13.47	4.72					
	Mean		0.68	15.13	7.83	-0.07	-0.01	0.01	7.75	1,329,798
<b>DAIRYMERIT</b>	1	100	0.74	16.80	10.17					
	2	100	0.69	15.41	8.96					
	3	170	0.67	14.73	7.60					
	4	100	0.62	13.11	4.98					
	Mean		0.68	14.97	7.88	-0.07	-0.01	0.01	7.80	1,338,153

Genomic selection and herd management tools to improve feed efficiency of the dairy industry.







Thanks

