Milk Production Costs in 2007 on Selected Wisconsin Dairy Farms

by Ken Bolton and Jenny Vanderlin[1]

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The Basic Cost of Production increased in 2007 by $2.99/cwt equivalent (CWT EQ) and by $391/cow over 2006. On the positive side the U.S. All Milk Price at $19.15/cwt was both $6.27/cwt over the $12.88/cwt price in 2006 and the highest on record. This continues the milk price volatility of recent years, especially since 1995.

The US All Milk Price ($19.15) was more than the study farm's total economic cost of production ($17.73); creating a gain of $1.42/cwt. Total farm income averaged $19.15/CWT EQ producing $3.75/cwt equivalent of Net Farm Income. This is an improvement over 2006 with a gain of $1.22/CWT EQ which followed a $2.55/CWT EQ gain in 2005. Although the All Milk Price of $12.88/cwt in 2006 was less than the study farm's total economic cost of production of $13.48/CWT EQ, the 2005 All Milk Price of $15.13 exceeded total economic costs of $14.37/CWT EQ by $0.76/CWT EQ.

In this summary of 2007 financial records, 552 dairy farms averaging 148 cows and 21,975 lbs of milk sold per cow had a Basic Cost of production of $11.28/CWT EQ on income of $19.13 (U.S. average per hundredweight milk price in 2007). The total economic cost was $17.73 per CWT EQ producing a gain of $1.36.

During 2006, 594 dairy farms averaging 138 cows and producing 22,147 lbs of milk sold per cow had a Basic Cost of $8.29 per CWT EQ on income of $12.88 (US average per cwt milk price in 2006). The total economic cost for fiscal year 2006 was $13.48 per CWT EQ.

In the study of 2005 records, 672 farms milking an average of 134 cows producing 21,893 lbs milk/cow produced a Basic Cost of production of $9.11/CWT EQ as compared to an All Milk Price of $15.13 and a total income/Cwt EQ of $15.14. The total economic cost of production for 2005 was $14.37/CWT EQ.

Data Source

Lakeshore Farm Management Association, Fox Valley Management Association, Wisconsin County Agents, Wisconsin Technical College System Instructors, and the Center for Dairy Profitability originally collected this data. Personnel affiliated with these associations helped individual farm managers reconcile their financial data. Individual farm managers used a number of different manual and computerized record keeping systems to enter the initial financial records, including the Agricultural Accounting and Information Management System (AAIMS©) and Quickbooks©. The Agriculture Financial Advisor (AgFA©)[2] data set was used for this study. AgFA© is a sample of Wisconsin dairy farms from which financial and production data are collected annually. Total farm numbers in the AgFA data set summarized have declined each of the last three years from 672 farms in 2005, 594 in 2006 to 552 farms summarized in 2007.

[1] Center for dairy Profitability, University of Wisconsin-Madison/Extension. Authors wish to think Dr. Gary Frank for his review and editorial comments, and Jim Olsen for data retrieval.

2 AgFA@ (Agriculture Financial Advisor) – http://cdp.wisc.edu. AgFA@ is an active/real time database for collecting and analyzing data. The number of records will likely increase throughout the years.

Cost of Production

Using Table 1 you can compare your cost of production figures to those in this study. The "per Head" or the "per CWT EQ" column will help to identify categories of your expenses that are above average.[3] For instance, suppose your fuel and oil costs are $110 per cow -- is this okay? Compare your figure to the same line item on Table 1. If your farm's cost is NOT at or below the average you should find out why this is occurring and do what you can to decrease the costs in that category.

Table 1

Results-Per Whole Farm, Per Cow, Per CWT EQ

Table 1 shows the average cost of production in 2007 using three different report bases. They are whole farm, per cow and per CWT EQ. The costs are broken down into four different categories. They are: basic costs (similar to the Cost of Goods in non-farm accounting), interest costs, labor costs, and depreciation and equity costs.

Table 1 shows a basic cost of $2,848 per cow and $11.24 per CWT EQ. The total income per cow was $4,850 in 2007. Table 1 shows an economic gain averaging $53,210 per farm in 2007 or a gain of $360 per cow. This means that the average farm was able to contribute to the farm manager's unpaid labor and management or the equity capital even if one, the other or both did not receive a market competitive rate in 2007. The cost assigned to the farm manager's unpaid labor and management was $42,431 and the opportunity cost of the owner's equity capital was $42,626. These are non-cash costs however, cash is typically withdrawn for family living purposes and these costs are not included in farm expenses.

Table 1 also shows the average costs per CWT EQ for selected expense categories that closely match the expense categories on the Schedule F income tax form. It also shows opportunity cost for the unpaid labor and management and interest on equity capital.

Table 1 records the average per cow costs for all farms summarized. The purchased feed per cow increased in 2007 ($942) over 2006 ($747) by $195 per cow. Purchased feed costs per cow were $843, $891, $695, $638 and $648, in 2005, 2004, 2003, 2002 and 2001 respectively. Supplies have exhibited a variable but significant increased at $120 per cow in 2007, $106 per cow in 2006 and $112 per cow in 2005.

Interest costs per cow in 2007 increased continuing a steady tread over recent years. Interest paid per cow was $236, $222, $185, $175and $185 in 2007, 2006, 2005, 2004 and 2003 respectively. Paid labor costs were $481 per cow in 2007 which is a slight decrease ($1.86) per cow from 2006. Labor costs for dependents also increased in 2007 which is consistent with costs in 2006 compared to 2005. The trend previous to 2007 may be explained by the increase in the number of farms milking more cows with a higher percentage of paid versus unpaid family labor.

Check Table 1 values against your costs to see if yours are competitive. You can use the "per Cow" or the "per CWT EQ column from Table 1 to help you identify categories of your expenses that are above average.5 For instance, suppose your Purchased feed Costs are $1,100 per cow. Is this OK? How do you know? Use the "per Cow" column in Table 1or select the herd size representative of your farm from Table 4 to help you make the judgment call. If your farm's cost is NOT below the average, you may want to find out why this is and do what you can to decrease the cost in this area and/or increase production efficiency.

[3] Frank, Gary G. "Calculating Your Milk Production Costs and Using the Results to Manage Your Expenses." August 1996. Available on the Center for Dairy Profitability website: http://cdp.wisc.edu.

Table 1
Cost of Production, 2007
Report Basis: Whole Farm, Per Head, Per Hundredweight Equivalent

Income

	Economic	per Head	per CWT EO
Total Income	**715,347.30**	**4,850.18**	**19.15**

Expenses

	2007 Economic	2007 per Head	2007 per CWT EO
Basic Cost			
Cost of Items for Resale	187.83	1.27	0.01
Breeding Fees	8,517.19	57.75	0.23
Car and Truck Expenses	2,588.68	17.55	0.07
Crop Chemicals	8,443.52	57.25	0.23
Conservation Expenses	75.05	0.51	0.00
Custom Heifer Raising Expenses	3,833.93	25.99	0.10
Custom Hire (Machine Work)	21,989.61	149.09	0.59
Feed Purchase	138,940.85	942.04	3.72
Fertilizer and Lime	21,530.77	145.98	0.58
Freight and Trucking	7,174.20	48.64	0.19
Gasoline, Fuel, and Oil	20,505.13	139.03	0.55
Farm Insurance	7,699.37	52.20	0.21
Rent/Lease Equipment	2,804.74	19.02	0.08
Rent/Lease Other	20,383.45	138.20	0.55
Repairs and Maintenance	2,007.55	13.61	0.05
Building and Fence Repairs	9,409.84	63.80	0.25
Machinery Repairs	20,838.13	141.29	0.56
Seeds and Plants Purchased	16,715.41	113.33	0.45
Storage and Warehousing	14.07	0.10	0.00
Supplies Purchased	17,635.00	119.57	0.47
Taxes - Other	5,685.94	38.55	0.15
Taxes - Payroll	147.51	1.00	0.00
Utilities	14,006.83	94.97	0.37
Veterinary Fees and Medicine	20,918.10	141.83	0.56
Other Farm Expenses	6,029.34	40.88	0.16
Marketing & Hedging	8,478.48	57.49	0.23
Other Crop Expenses	5,279.45	35.80	0.14
Other Livestock Expenses	32,360.39	219.41	0.87
- Change in Prepaid Expenses	(15,305.03)	(103.77)	(0.41)
Change in Accounts Payable	(1,503.71)	(10.20)	(0.04)
Depreciation on Purchased Breeding Livestock	12,577.03	85.27	0.34
Total Basic Cost	**419,968.64**	**2,847.46**	**11.24**

Table 1 (Con't)
Cost of Production, 2007
Report Basis: Whole Farm, Per Head, Per Hundredweight Equivalent

Interest Cost			
Mortgage Interest	14,234.05	96.51	0.38
Other Interest	20,505.79	139.03	0.55
Total Interest Cost	**34,739.85**	**235.54**	**0.93**
Labor Cost			
Employee Benefits - Dependents	5,307.00	35.98	0.14
Employee Benefits - Non-Dependents	9,388.66	63.66	0.25
Labor Hired - Dependents	7,619.81	51.66	0.20
Labor Hired - Non-Dependents	48,475.87	328.67	1.30
Pension and Profit-Sharing Plans - Non-	1.65	0.01	0.00
Value of Unpaid Labor & Management	42,430.58	287.69	1.14
Total Labor Cost	**113,223.57**	**767.68**	**3.03**
Depreciation & Equity Cost			
Machinery, Equipment, Building Depreciation	51,579.26	349.72	1.38
Interest on Equity Capital	42,626.18	289.01	1.14
Total Depreciation & Equity Cost	**94,205.44**	**638.73**	**2.52**
Total Expenses	**662,137.51**	**4,489.40**	**17.73**
Total Income - Total Expenses	**53,209.79**	**360.77**	**1.42**

Table 2 shows the average Net Farm Income in 2007 was $951 per cow a significant increase over $366 in 2006. While Net Farm Income per cow and economic return were both significantly positive in 2007, the average herd experienced an economic loss in 2006 even though Net Farm Income per cow was positive. The difference lays in the definition of Net Farm Income. Net Farm Income is total farm income minus all farm expenses except the Value of Unpaid Labor and Management and Interest on Equity Capital. Net Farm Income is the return to the farm manager's (and all other) unpaid labor and management plus the return to equity capital. The difference between "Total Income – Total Expense" and Net Farm Income is the Interest on Equity Capital and the Value of Unpaid Labor and Management plus gain or loss on the sale of farm assets. After charges for Unpaid Labor and Management and for Equity Capital is deducted from 2007 Net Farm Income, an economic gain of $347 per cow results.

Table 2
Net Farm Income in 2007

Net Farm Income from Operations (NFIFO Summary)	**Per Farm**	**Per Head**	**Per CWT**
Total Allocated Costs	$577,081	$3913	$15.45
Net Farm Income From Operations (NFIFO)	138,267	937	3.70
Gain (Loss) on Sale of All Farm Capital Assets	1,949	13.21	0.05
Net Farm Income (NFI)	$140,215	$951	$3.75

Net Farm Income is sometimes used as a proxy for the dollars a farm manager has available to pay family living expenses and income and Social Security taxes. This is a fine proxy, but it is not very accurate because some of the incomes and expenses used to calculate Net Farm Income are non-cash (depreciation and others). Also some wages and benefits deducted as business expense are paid to family members. In addition, farm managers have other demands on the cash the farm operation generates such as debt repayment and down payments on new capital purchases, so the money available for family living usually does not equal Net Farm Income.

Table 3
Milk Production Costs per Farm in 2007

Range in Herd Size	<=50 Cows	51 to 75	76 to 100	101 to 150	151 to 250	> 250 Cows
Number of Farms	97	157	96	78	53	63
Cows per Farm	41	62	87	127	192	603
Total Number of Cows	4,003	9,780	8,390	9,900	10,157	38,005
Milk Sold per Cow (lbs)	18,448	20,133	20,183	20,743	21,905	23,519
Dairy Livestock Sales per Cow	328	307	255	219	234	199
Crop Acres per Cow	4.43	4.18	3.87	3.63	2.69	1.51
Total Crop Acres Farmed	183	260	338	461	516	911
Cost of Items for Resale	22.22	246.00	0.00	278.94	748.00	0.00
Breeding Fees	2,433.89	3,857.41	4,919.91	7,353.36	12,017.51	33,473.84
Car and Truck Expenses	1,900.50	2,009.65	1,909.29	2,846.22	2,284.73	6,063.37
Chemicals	2,202.49	4,623.97	8,922.74	10,450.06	13,190.63	20,363.11
Custom Heifer Raising Expenses	0.00	320.32	0.00	492.31	0.00	31,697.89
Custom Hire (Machine Work)	3,751.68	8,543.62	13,148.63	17,083.47	31,710.19	94,947.10
Feed Purchased	27,443.23	42,729.34	62,257.89	100,542.53	170,456.71	688,254.63
Fertilizer and Lime	7,050.23	14,398.34	16,831.77	25,893.01	29,518.29	56,640.54
Freight and Trucking	2,329.73	3,428.21	3,797.33	5,392.76	6,941.62	31,515.32
Gasoline, Fuel, and Oil	6,704.02	10,093.98	15,278.85	21,142.32	26,281.88	70,014.81
Farm Insurance	3,081.90	4,972.61	6,448.92	9,541.49	10,335.22	19,011.35
Rent/Lease Equipment	274.54	620.53	1,091.92	2,209.64	4,027.09	14,462.11
Rent/Lease Other	3,613.37	7,399.49	13,889.11	18,990.68	29,098.17	82,850.02
Repairs and Maintenance	657.55	1,522.45	2,993.30	2,688.68	922.62	3,862.35
Building and Fence Repairs	2,327.76	3,653.71	5,565.50	8,714.13	11,975.70	39,219.43
Machinery Repairs	6,287.55	10,339.66	14,996.45	24,325.58	32,344.08	64,308.51
Seeds and Plants Purchased	5,768.80	9,359.29	13,162.13	19,928.79	21,116.75	49,634.92
Supplies Purchased	6,826.17	9,819.29	12,913.86	18,777.00	23,452.58	54,640.51
Taxes	2,621.68	3,824.10	4,851.28	6,625.68	6,653.08	15,612.19
Utilities	5245.73	7555.39	10228.45	13482.14	18860.46	45897.48
Veterinary Fees and Medicine	4361.80	7329.27	10428.58	15609.87	25852.32	98678.89
Other Farm Expenses	4658.40	8685.05	16071.70	24673.05	45484.83	255730.44
Marketing & Hedging	1433.13	2298.82	2978.71	4586.51	7642.35	48628.83
- Change in Prepaid Expenses	-3364.85	-6753.73	-9103.68	-17897.07	-15449.09	-61118.76
Change in Accounts Payable	-566.82	85.53	-1155.99	16.06	-3410.08	-7714.42
Depreciation on Purchased Breeding Livestock	2484.03	2785.20	6143.13	9570.99	15025.72	63984.75
Basic Costs	99548.74	163747.48	238569.77	353318.20	527081.37	1820659.18
Mortgage Interest	2770.59	4677.58	6569.45	14167.12	22895.07	60175.52
Other Interest	3679.60	5700.20	10819.55	17532.55	23743.17	99026.90
SST & Emp Bens (Dep)	4905.61	6213.62	6487.02	4775.32	5794.60	2115.59
SST & Emp Bens (Non-dep)	610.57	2094.99	3817.31	8624.88	11275.89	48942.29
Labor Hired (Dependents)	4445.12	7295.90	8084.71	7115.09	7038.15	13720.86
Labor Hired (Non-dep)	2376.52	8057.01	17188.85	37413.40	67964.08	265157.59
Dpr - Mach, equip, build	16162.34	25933.99	34371.34	52178.41	68329.37	181408.17
Total Allocated Costs	**134499.08**	**223720.78**	**325908.00**	**495124.96**	**734121.71**	**2491206.10**
Total Farm Incomes	**180455.06**	**298010.31**	**421210.40**	**630715.88**	**908366.75**	**2969550.74**
NFIFO*	**45955.98**	**74289.53**	**95302.40**	**135590.91**	**174245.04**	**478344.64**
Gain (loss) on sale of all Farm Capital Assets	532.14	1077.15	2349.71	1871.94	1781.23	5927.77
NFI	**46488.13**	**75366.68**	**97652.11**	**137462.86**	**176026.26**	**484272.42**
NFI + Dependents Labor and Benefits	55838.86	88876.20	112223.83	149353.27	188859.02	500108.86

*Net Farm Income from Operations

Table 3
Results – Per Farm

You should be very careful when comparing your farm to Table 3. Even though the table is broken down into different herd size categories the herd size range is wide. NOTE: Tables 4 and 5 can be used without this caution because they are generated with standardized data on a per cow or CWT EQ report basis.

Table 3 shows the per farm cost of production averages in six herd size categories. To assist in your understanding of the entire table, the "Range in Herd Size-76 to 100" column is used as an example.

There were 96 herds in the data set that had more than 76 cows and less than 101 cows. Those herds averaged 87 cows per farm and sold an average of 20,183 pounds of milk per cow. They had an average of 3.87 crop acres per cow and farmed 338 acres of cropland.

The average amount of purchased feed was $62,258 per farm. In addition, they paid $8,923 for crop chemicals, $16,832 for fertilizer, $20,563 for repairs and $10,428 for vet & medicine expense. These are higher than 2006 costs where purchased feed was $48,830 per farm, $5,899 for crop chemicals, $10,554 for fertilizer, $18,883 for repairs and $9,685 for vet & medicine expense.

In 2006 there was an increase in Prepaid Expenses of $2,692 as well as a slight increase of $115 in Accounts Payable. Although a total economic loss was recorded for 2005, either sufficient cash was available from the positive economic gain during 2004 to prepay certain expenses or funds were borrowed to make purchases at perceived advantageous prices. Other Interest did increase from $6595 in 2004 to $7,828 in 2005.

Total Basic Costs for the 76-100 cow herd size farms was $238,570 in 2007, $204,923 in 2006; $214,420 in 2005 and $204,847 per farm in 2004.

In addition to Basic Costs the 2007 group of farms paid $25,274 ($8,085 to Dependents and $17,189 to Non-dependents). This is approximately $316 more than in 2006 and $532 more than in 2005.

Social Security Taxes plus Benefits totaled $10,305 ($6487 for Dependents and $3817 for Non-dependents) in 2007 versus $10,082 in 2006 and $8,748 in 2005. As with non-agriculture employers, the benefits portion of an agricultural employee's benefit package continues to grow. In our sample, it increased 2.2 percent from 2006 to 2007. There was also $17,389 ($6,569 plus $10,820) of interest expenses. This is an increase of approximately $2,754 from 2006. In 2007, $40,514 of Depreciation was claimed. Some of that depreciation ($6,143) was taken on purchased livestock.

The Total Allocated Costs are $325,908 in 2007 versus $350,442 per farm in 2006 and $356,330 in 2005. The Total Income per farm was $421,210 in 2007 and ($19,387) and $5,473 in 2006 and 2005 respectively. The Net Farm Income from Operations (NFIFO) in 2007 of $95,302 compared to $45,737 in 2006 and $69,403 in 2005. The total return to the owner-operator-manger's (and unpaid family's) labor, management and equity capital is the last line in Table 3 ($112,224). It has the amount paid to dependents added to the NFI.

When comparing NFIFO in 2007 to those in 2006, all farm size categories had substantial increases, most in the 200 percent range. However, the largest farms, those in the herd size categories in excess of 250 cows, had an increase in NFIFO of over 400 percent or in absolute terms, $366,949.

Table 4
Milk Production Costs per Cow in 2007

Range in Herd Size	<=50 Cows	51 to 75	76 to 100	101 to 150	151 to 250	> 250 Cows
Number of Farms	97	157	96	78	53	63
Cows per Farm	41	62	87	127	192	603
Total Number of Cows	4,003	9,780	8,390	9,900	10,157	38,005
Milk Sold per Cow (lbs)	18,448	20,133	20,183	20,743	21,905	23,519
Dairy Livestock Sales per Cow	328	307	255	219	234	199
Crop Acres per Cow	4.43	4.18	3.87	3.63	2.69	1.51
Total Crop Acres Farmed	183	260	338	461	516	911
Cost of Items for Resale	0.54	3.95	0.00	2.20	3.90	0.00
Breeding Fees	58.98	61.93	56.29	57.94	62.71	55.49
Car and Truck Expenses	46.06	32.26	21.85	22.43	11.92	10.05
Chemicals	53.37	74.23	102.10	82.34	68.83	33.76
Custom Heifer Raising Expenses	0.00	5.14	0.00	3.88	0.00	52.54
Custom Hire (Machine Work)	90.92	137.16	150.45	134.60	165.47	157.39
Feed Purchased	665.04	685.98	712.37	792.19	889.46	1,140.89
Fertilizer and Lime	170.85	231.15	192.59	204.02	154.03	93.89
Freight and Trucking	56.46	55.04	43.45	42.49	36.22	52.24
Gasoline, Fuel, and Oil	162.46	162.05	174.82	166.58	137.14	116.06
Farm Insurance	74.69	79.83	73.79	75.18	53.93	31.51
Rent/Lease Equipment	6.65	9.96	12.49	17.41	21.01	23.97
Rent/Lease Other	87.56	118.79	158.92	149.63	151.84	137.34
Repairs and Maintenance	15.93	24.44	34.25	21.18	4.81	6.40
Building and Fence Repairs	56.41	58.66	63.68	68.66	62.49	65.01
Machinery Repairs	152.37	165.99	171.59	191.67	168.77	106.60
Seeds and Plants Purchased	139.80	150.25	150.60	157.02	110.19	82.28
Supplies Purchased	165.42	157.64	147.76	147.95	122.38	90.58
Taxes	63.53	61.39	55.51	52.20	34.72	25.88
Utilities	127.12	121.29	117.04	106.23	98.42	76.08
Veterinary Fees and Medicine	105.70	117.66	119.33	122.99	134.90	163.58
Other Farm Expenses	112.89	139.43	183.90	194.40	237.34	423.92
Marketing & Hedging	34.73	36.91	34.08	36.14	39.88	80.61
- Change in Prepaid Expenses	(81.54)	(108.42)	(104.17)	(141.01)	(80.61)	(101.31)
Change in Accounts Payable	(13.74)	1.37	(13.23)	0.13	(17.79)	(12.79)
Depreciation on Purchased Breeding Livestock	60.20	44.71	70.29	75.41	78.41	106.07
Basic Costs	2,412.41	2,628.80	2,729.78	2,783.86	2,750.35	3,018.04
Mortgage Interest	67.14	75.09	75.17	111.63	119.47	99.75
Other Interest	89.17	91.51	123.80	138.14	123.89	164.15
SST & Emp Bens (Dep)	118.88	99.75	74.23	37.63	30.24	3.51
SST & Emp Bens (Non-dep)	14.80	33.63	43.68	67.96	58.84	81.13
Labor Hired (Dependents)	107.72	117.13	92.51	56.06	36.73	22.74
Labor Hired (Non-dep)	57.59	129.35	196.68	294.79	354.64	439.54
Dpr - Mach, equip, build	391.67	416.34	393.29	411.12	356.55	300.71
Total Allocated Costs	**3,259.38**	**3,591.61**	**3,729.12**	**3,901.18**	**3,830.70**	**4,129.58**
Total Farm Incomes	**4,373.05**	**4,784.25**	**4,819.60**	**4,969.53**	**4,739.93**	**4,922.52**
NFIFO*	**1,113.67**	**1,192.64**	**1,090.47**	**1,068.35**	**909.22**	**792.93**
Gain (loss) on sale of all Farm Capital Assets	12.90	17.29	26.89	14.75	9.29	9.83
NFI	**1,126.57**	**1,209.94**	**1,117.36**	**1,083.10**	**918.52**	**802.76**

*Net Farm Income from Operations

Table 4
Results – Per Cow

Table 4 shows per cow averages for six herd size categories for 2007. The 63 herds in the >250 cow category have more than three times the number of cows per herd than in the 151 – 250 cow category, almost five times the number cows per herd in the 101 – 150 cow category and just under seven times the number of cows per herd in the 76-100 cow grouping.

Table 4 also indicates that the larger herds (based on cow numbers) have fewer crop acres per cow and lower Taxes per cow. However, larger farms have higher Purchased Feed costs, $1,141 versus $665 for the smallest herd in the six categories. Larger farms cost per cow was higher for Custom Heifer Raising, Veterinary Fees and Medicine, Other Farm Expenses, Other Interest and Hired Labor.

All herd size categories recorded declines in Prepaid Expenses. Only the 51 -75 and 101 – 150 cow categories showed increases in Accounts Payable.

Basic Cost in the largest herd size category exceeded the Basic Cost in the smallest category by $606 per cow ($3,018 vs. $2,412). This amount appeared to be $451 in 2006. The 2007 difference is largely due to Purchased Feed cost, Hired Labor, Custom Heifer Raising and Other Farm Expenses. Other Interest paid per cow increases steadily from the smallest to largest herd summary category. The larger herds filed lower costs per cow in the Breeding Fees, Car & Truck Expense, Chemicals, Fertilizer & Lime, Gasoline, Fuel & Oil, Farm Insurance, all Repair categories, Seeds & Plants Purchased, Supplies Purchased, Taxes, Utilities, Other Crop Expense, SST & Employee Benefits for Dependants and Depreciation- Machinery, Equipment and Buildings categories. The NFIFO between the largest and smallest herd categories was $321 per cow in favor of the small herd category.

Total Allocated Costs per cow are $901 ($4,130 versus $3,259) higher in the largest farm size category than the <50 cow group. The larger herds also generated, on average, $550 more Total Income per cow as compared to the smallest herds.

Basic Cost of Production per Hundredweight Equivalent

Cost of Production per Unit Calculation Method Used

This study uses the "Cost per Unit of Equivalent Production" method to calculate the cost of producing milk. Using this method, the cost of milk production can be compared directly to the price of milk. This method also permits the calculation of cost per hundredweight equivalent on individual expense items.

"Total Allocated Expenses" are Total Expenses minus the value of unpaid labor, management and equity. "Basic Costs" are Total Allocated Expenses minus interest paid, and all wages and benefits paid and, non-livestock depreciation expenses. Basic Cost is a useful measure when comparing one farm to another, because it is not influenced by the composition of the milk sold, other price premiums, the farm's debt structure and the amount of paid versus unpaid labor or the depreciation claimed.

An average Basic Cost of $11.24 in 2007 per CWT EQ was calculated by summing the total Basic Costs on all farms and dividing by the number of CWT EQ produced. 74% had a Basic Cost of $12.00 or less – a decrease from the 99.3% who had Basic Costs of $12.00 or less in 2006. This is consistent with 2005-98.5% and 2004 – 98%. In table 6 selected ranges of Basic Costs are presented. It shows the number and percent of farms in each range.

The $11.28 average Basic Cost means that the average farmer in the study had $7.85 (The US average milk price in 2007 of $19.13 minus the basic expenses of $11.28 per CWT EQ) of income available per CWT EQ to use for other costs; versus $4.59 in 2006. Other costs are items such as hired labor, scheduled principal and interest payments, a down payment when purchasing assets, and/or family living draw.

Table 5
Milk Production Costs per CWT EQ in 2007

Range in Herd Size	<=50 Cows	51 to 75	76 to 100	101 to 150	151 to 250	> 250 Cows
Number of Farms	97	157	96	78	53	63
Cows per Farm	41	62	87	127	192	603
Total Number of Cows	4,003	9,780	8,390	9,900	10,157	38,005
Milk Sold per Cow (lbs)	18,448	20,133	20,183	20,743	21,905	23,519
Dairy Livestock Sales per Cow	328	307	255	219	234	199
Crop Acres per Cow	4.43	4.18	3.87	3.63	2.69	1.51
Total Crop Acres Farmed	183	260	338	461	516	911
Cost of Items for Resale	0.00	0.02	0.00	0.01	0.02	0.00
Breeding Fees	0.26	0.25	0.22	0.22	0.25	0.22
Car and Truck Expenses	0.20	0.13	0.09	0.09	0.05	0.04
Chemicals	0.23	0.30	0.41	0.32	0.28	0.13
Custom Heifer Raising Expenses	0.00	0.02	0.00	0.01	0.00	0.20
Custom Hire (Machine Work)	0.40	0.55	0.60	0.52	0.67	0.61
Feed Purchase	2.91	2.75	2.83	3.05	3.59	4.44
Fertilizer and Lime	0.75	0.93	0.77	0.79	0.62	0.37
Freight and Trucking	0.25	0.22	0.17	0.16	0.15	0.20
Gasoline, Fuel, and Oil	0.71	0.65	0.69	0.64	0.55	0.45
Farm Insurance	0.33	0.32	0.29	0.29	0.22	0.12
Rent/Lease Equipment	0.03	0.04	0.05	0.07	0.08	0.09
Rent/Lease Other	0.38	0.48	0.63	0.58	0.61	0.53
Repairs and Maintenance	0.07	0.10	0.14	0.08	0.02	0.02
Building and Fence Repairs	0.25	0.23	0.25	0.26	0.25	0.25
Machinery Repairs	0.67	0.66	0.68	0.74	0.68	0.41
Seeds and Plants Purchased	0.61	0.60	0.60	0.61	0.45	0.32
Supplies Purchased	0.72	0.63	0.59	0.57	0.49	0.35
Taxes	0.28	0.25	0.22	0.20	0.14	0.10
Utilities	0.56	0.49	0.47	0.41	0.40	0.30
Veterinary Fees and Medicine	0.46	0.47	0.47	0.47	0.55	0.64
Other Farm Expenses	0.49	0.56	0.73	0.75	0.96	1.65
Marketing & Hedging	0.15	0.15	0.14	0.14	0.16	0.31
- Change in Prepaid Expenses	(0.36)	(0.43)	(0.41)	(0.54)	(0.33)	(0.39)
Change in Accounts Payable	(0.06)	0.01	(0.05)	0.00	(0.07)	(0.05)
Depreciation on Purchased Breeding Livestock	0.26	0.18	0.28	0.29	0.32	0.41
Basic Costs	**10.56**	**10.52**	**10.85**	**10.73**	**11.11**	**11.74**
Mortgage Interest	0.29	0.30	0.30	0.43	0.48	0.39
Other Interest	0.39	0.37	0.49	0.53	0.50	0.64
SST & Emp Bens (Dep)	0.52	0.40	0.29	0.14	0.12	0.01
SST & Emp Bens (Non-dep)	0.06	0.13	0.17	0.26	0.24	0.32
Labor Hired (Dependents)	0.47	0.47	0.37	0.22	0.15	0.09
Labor Hired (Non-dep)	0.25	0.52	0.78	1.14	1.43	1.71
Dpr - Mach, equip, build	1.72	1.67	1.56	1.58	1.44	1.17
Total Allocated Costs	**14.27**	**14.38**	**14.82**	**15.03**	**15.48**	**16.07**
Total Farm Incomes	**19.15**	**19.15**	**19.15**	**19.15**	**19.15**	**19.15**
NFIFO*	**4.88**	**4.77**	**4.33**	**4.12**	**3.67**	**3.08**
Gain (loss) on sale of all Farm Capital Assets	0.06	0.07	0.11	0.06	0.04	0.04
NFI	**4.93**	**4.84**	**4.44**	**4.17**	**3.71**	**3.12**

*Net Farm Income from Operations

Table 5
Results – Per CWT EQ

Table 5 records the cost of milk per CWT EQ for six herd size ranges. Purchased feed cost increases by $1.69 ($2.75 versus $4.44) per CWT EQ from the second smallest to the largest herd size category. This is offset by lower expenditures on Car & Truck Expense (-$0.16), Chemical (-$0.10), Fertilizer & Lime (-$.38), Gasoline, Fuel & Oil (-$0.26), Farm Insurance (-$0.21), Repairs & Maintenance(-$0.05), Machinery Repairs (-$0.26), Seeds & Plants Purchased (-$0.37), Taxes (-$0.08), Utilities (-$0.26), Employee Benefits (-$0.51) and Depreciation – machinery, equipment, buildings (-$0.55) for a total of -$3.48 per CWT EQ. for the large herd category. Because little unpaid family labor is utilized on larger farms, their Hired labor expense was $1.46/CWT EQ higher than herds in the smallest category.

Vet & Medicine cost are approximately 36% higher per CWT EQ for large herds than herds in the 76-100 cow range. Other Expenses increase by $1.16 per CWT EQ from the smallest to the largest herd sizes summarized. A portion of this may be the cost of estrus synchronization programs and/or rBST.

The "51-75- cow" farms record the lowest Basic Costs of $10.52 per CWT EQ. The range in Basic Cost per CWT EQ among farm size groups is $1.22 versus $0.35 in 2006 and $0.01 in 2005. Livestock Depreciation is $0.26 per CWT EQ in the smallest herd size group and $0.41 in the largest herd size category.

The "<50 cow" herd size range turned in the highest NFIFO per CWT EQ in 2007 at $4.88. In 2006 NFIFO was $1.91 and in 2005, $2.92. The largest herd size category filed the lowest NFIFO per CWT EQ of $3.08 for 2007. However, when the amount paid to family members is added back into NFI and multiplied by the number of CWT EQ per farm, the return to the owner-manager-operator-managers tell a different story. *The larger herds return an average of $484,272 for family living and return to equity capital versus $46, 488 for those in the "<50 cow" herd-size category.* Note: this fact was stated early but because of it's importance is noted again.

Summary

The average herd size for herds summarized in 2007 was 148 cows. The milk sold per cow averaged 21,975 pounds. The average herd size in 2006 was 138 cows and average milk sold was 22, 147 pounds.

Total economic cost of production per CWT EQ was $1.42 less than the US All Milk Price in 2007. This means that the average Wisconsin dairy producer had an economic gain of $1.42 per CWT EQ produced in 2007. In 2006 the total economic cost of production was $0.60 more than he US All Milk Price. The 2005 cost of production was also less than the US All Milk Price by $0.76 per CWT EQ.

Purchased feed costs remain the largest cost item. Having declined in 2006 over 2005 but increasing again in 2007 over 2006 prices by $1.24 per CWT EQ. Purchased Feed costs per cow was $942, $747, $843 and $891for 2007, 2006, 2005 and 2004 respectively. Purchased Feed costs per CWT EQ were $3.72, $2.50, $2.97 and $3.41 for the same years.

Total Allocated Costs per cow averaged $3,913 in 2007, an increase of $697 over 2006 ($3,251). However, the return to the farmer's (and family's) unpaid labor, management and equity capital (Net Farm Income from Operations) was significantly higher at $951 as compared to$521 in 2006 as well as $792 for 2005 levels.