

LGM–Dairy Livestock Gross Margin Insurance The Basics

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SHOULDN'T WE
READ THE
INSTRUCTIONS?

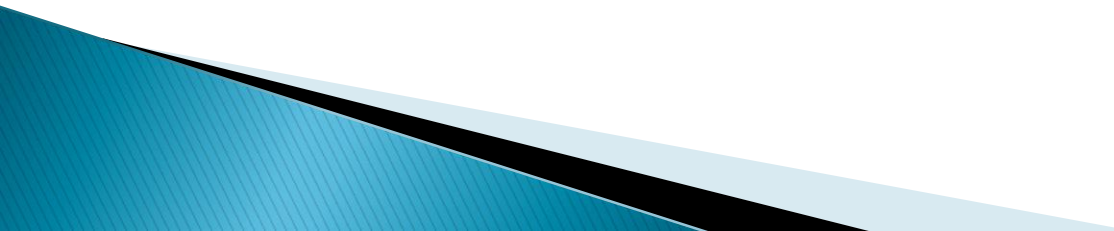
DO I LOOK
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SISSY?



Background – History

- ▶ **Agricultural crop insurance has been around for many decades.**
 - Authorization with Federal Crop Insurance Corporation, FCIC, 75th U.S. Congress on February 16, 1938.
 - The FCIC was created under Title V of the Agricultural Act of 1938.
 - It is the stated “purpose of this subtitle to promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing such insurance.”
 - Each new agricultural act or farm bill reauthorizes the FCIC and this is true of the current Food, Conservation, and Energy Act of 2008, Public Law 110–246.
- ▶ **The actual LGM–Dairy Insurance product was developed by Iowa Agricultural Insurance Innovations Consortium, L.L.C.(IAII).**
- ▶ **Section 508(h) of the FCIA provides for the submission of new insurance products to the FCIC, which, if found to be actuarially sound, can be offered for sale by certified agricultural crop insurance agencies.**
- ▶
- ▶ **The product itself is owned by IAII. IAII has created other livestock insurance products, such as LGM–Swine and LGM–Cattle prior to LGM–Dairy.**
- ▶
- ▶ **A complete set of documents covering all aspects of the LGM–Dairy can be accessed at the USDA RMA website <http://www.rma.usda.gov/livestock/>**

What is LGM Dairy?

- ▶ Federally reinsured dairy insurance program administered through the U.S. crop insurance program.
 - ▶ Indemnifies against unexpected declines in gross margin (market value of milk minus feed costs) on specified target quantity of marketed milk.
 - ▶ Uses averaged futures prices to determine the expected gross margin and the actual gross margin.
 - Mimics the 'Asian' option for both output and input prices
- 

What is the gross margin in Ohio?

- ▶ Milk price, yields, feed cost, nonfeed cost, operating cost and calculated margins for a typical Ohio dairy farm: 2003 – 2010.

USDA Cost and Returns Data: Ohio 2003 - 2010									
	2003	2004	2005	2006	2007	2008	2009	2010	2011?
Mailbox Price(a)	12.35	15.87	15.07	13.04	19.34	18.83	13.41	16.54	
Avg Yield(b)	47.3	47.6	48	48.9	49.3	49.8	51.4	53.3	
Feed Cost	9.06	9.3	8.95	7.87	8.85	12.19	9.52	9.28	
Nonfeed Cost	3.05	3.04	3.41	3.56	3.87	4.3	3.8	3.96	
Total OpCost(c)	11.83	12.05	12.06	11.17	12.44	16.2	13.03	12.92	
Income / Unit per cwt. Milk shipped									
Margin / Feed	3.29	6.57	6.12	5.17	10.49	6.64	3.89	7.26	
6.18		99.7%	-6.8%	-15.5%	102.9%	-36.7%	-41.4%	86.6%	
5.84	53%	106%	99%	84%	170%	107%	63%	117%	
Margin / Nfeed	9.3	12.83	11.66	9.48	15.47	14.53	9.61	12.58	
11.93		38.0%	-9.1%	-18.7%	63.2%	-6.1%	-33.9%	30.9%	
11.73	78%	108%	98%	79%	130%	122%	81%	105%	
Margin / TOC	0.52	3.82	3.01	1.87	6.9	2.63	0.38	3.62	
2.84		634.6%	-21.2%	-37.9%	269.0%	-61.9%	-85.6%	852.6%	
2.02	18%	134%	106%	66%	243%	92%	13%	127%	

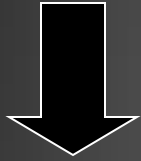
a) Mailbox price as reported by the Mideast Federal Milk Marketing Order.

b) Avg Yield calculated from the USDA Milk Production Reports.

c) Total OpCost excluding marketing cost.

How LGM-D Works

**Expected Prices
Determined**



**Producer Inputs
Target Marketings**



**Gross Margin
Guarantee**



**Actual Prices
Determined**

**Actual Gross
Margin
Calculated**

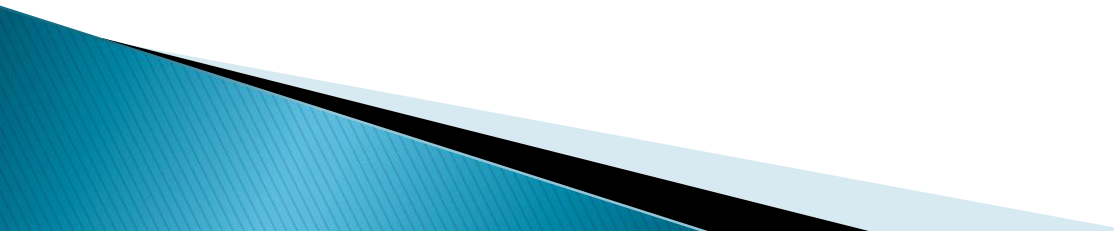


**Gross Margin Guarantee
Minus
Actual Gross Margin
=
Indemnity**

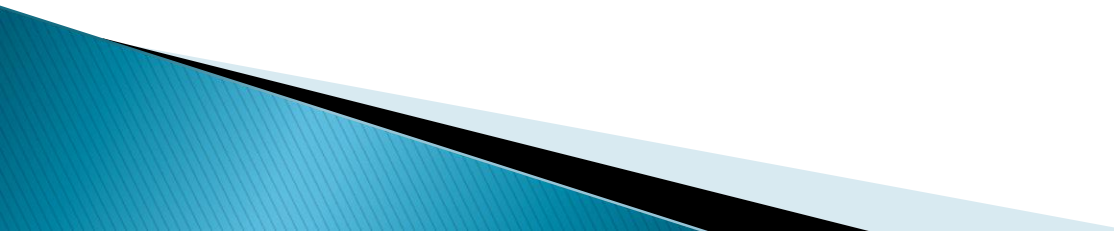
Causes of Loss Covered

- ▶ What is covered for loss?
 - LGM for Dairy covers the difference between the gross margin guarantee and the actual gross margin.
- ▶ What is not covered for loss?
 - LGM for Dairy does not insure against death loss or any other cause of production loss or damage to the producer's dairy cattle.

What LGM-D is Not

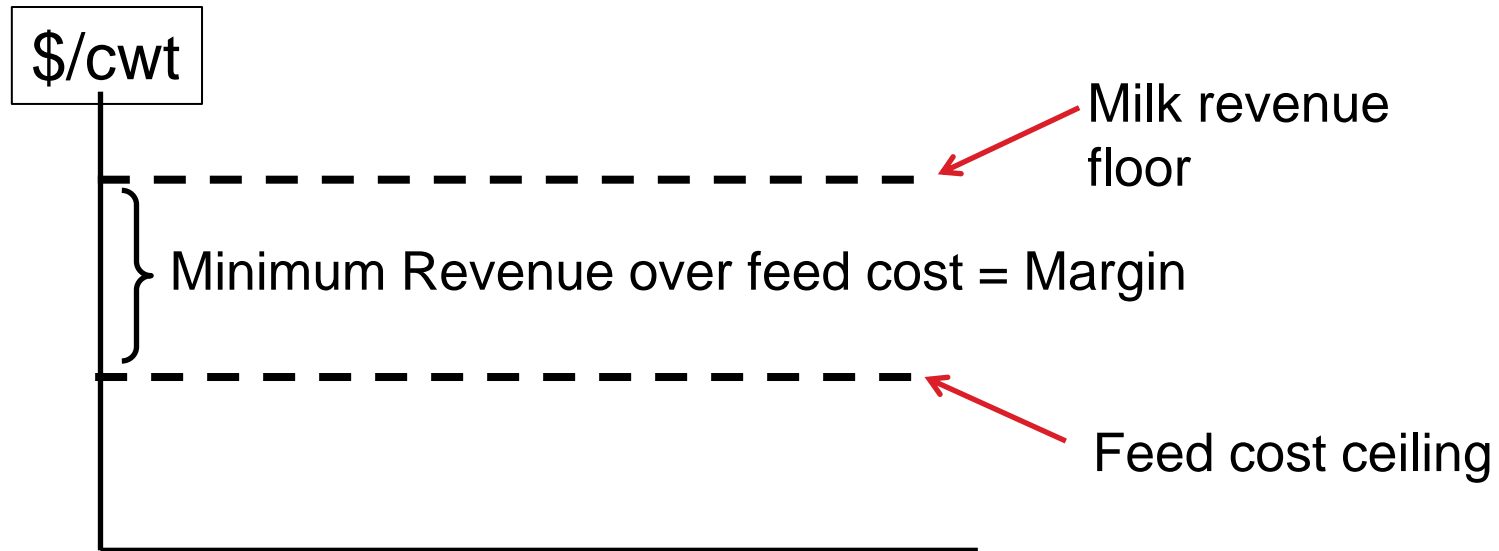
- ▶ LGM does not protect milk producers against multiple year declines in milk prices or increased feed costs
 - ▶ LGM does not protect milk producers against anticipated declines in milk prices or increased feed costs
- 

Dairy Gross Margin

- ▶ **Projected Margin** = Projected All Milk Price minus Projected Feed Costs
 - ▶ **Projected All Milk Price** = CME Futures Price (Class III milk contract)
 - ▶ **Projected Feed Costs** = Amount of corn * (CBOT Corn Price) + Amount of soybean meal * CBOT Soybean meal Price
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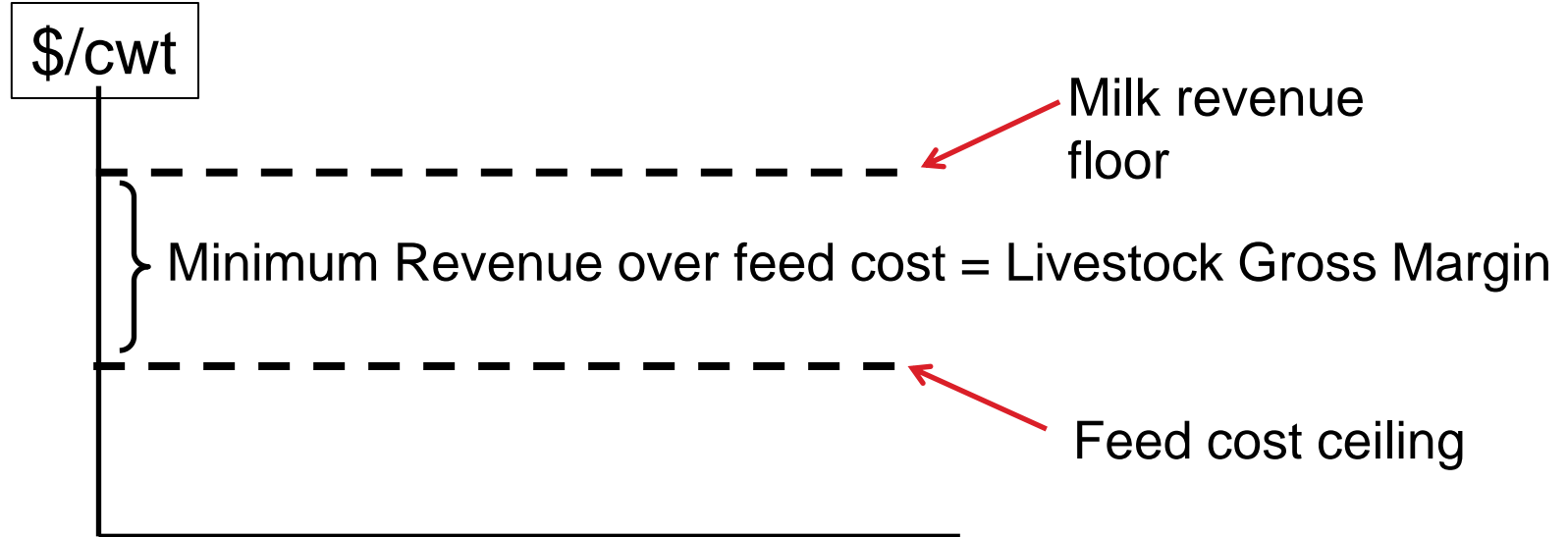
Dairy *Margin* Risk Management with Options

- How can a producer establish a *floor* on *Revenue over Feed Costs* (ROFC) using the option market?
 - Class III put options: Creates milk revenue *floor*
 - Requires a premium and broker fee and cannot be tailored to an individual farm size
 - Feed call options: Establishes feed cost *ceiling*
 - Requires a premium and broker fee and cannot be tailored to an individual farm size
 - Using this ***bundled option*** strategy, producer can establish an ROFC floor

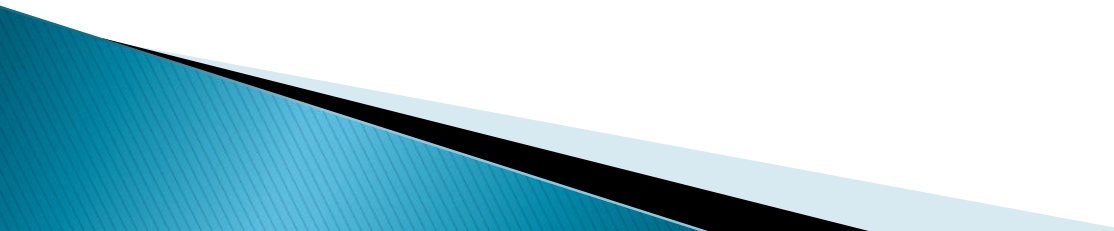


Dairy *Margin* Risk Management with LGM

- How can a producer establish a *floor* on *Revenue over Feed Costs* (ROFC) using the insurance market?
 - Purchase an LGM–Dairy contract
 - *Requires a premium, no broker fee, and can be tailored to an individual farm size*
 - Feed call options: Establishes feed cost *ceiling*
 - *Requires a premium, no broker fee, and can be tailored to an individual farm size*
 - Using this *insurance* strategy, producer can establish an ROFC floor



LGM-D Contract Sales Period

- ▶ LGM-Dairy: The sales dates for the policy are the end of business on the last Friday that is a business day for each of the 12 calendar months and ending at 8pm(CDT) the next day.
 - ▶ The application must be completed and filed not later than the sales closing date of the initial insurance period for which coverage is requested.
 - ▶ Coverage is effective only after the insurance company receives and accepts a completed application and a target marketing report, and the insurance company sends the producer a written summary of insurance.
- 

LGM–Dairy: Contract Sales Period

- *Contract sales period is the last Friday of the month that is a business day until 8:00pm (CDT) on Saturday.*

February 2011						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10		12
13	14	15	16	17	18	19
20	21	22	23	24	25	
27	28					

Insurance sign-up period

Insurance Period

- ▶ There are twelve insurance periods in each calendar year. Each insurance period runs for 11 months.
- ▶ For the first month of any insurance period, no milk can be insured.


Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<i>Policy purchased</i>	<i>No coverage</i>	 A diagram showing a timeline from October to July. A grey bar spans from October to July. Below it, a double-headed arrow is labeled "INSURANCE COVERAGE". <i>INSURANCE COVERAGE</i>									

Figure 2: Livestock Gross Margin for Dairy (LGM-Dairy) Insurance Periods. E.g., policy purchased on August Sales Closing Date.

LGM–Dairy: Expected Prices

- All 10 months of *Expected Prices*, {Class 3 milk and Corn and Soybean Meal} are known and used at time of sign-up
 - Average of last 3 days of futures settlement prices for each month/commodity including sign-up Friday

February 2011						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					



Futures market settle prices on these days are used to determine *Expected Prices*

Advantages of the LGM policy

- ▶ Two advantages over traditional options:
 - Convenience
 - Producers can sign up for LGM twelve (12) times per year and insure all of the milk they expect to market over a rolling 11-month insurance period.
 - Customization
 - The LGM policy can be tailored to any size farm.
 - Options cover fixed amounts of commodities and those amounts may be too large to be used in the risk management portfolio of some farms.
 - The producer does not have to decide on the mix of options to purchase, the strike price of the options, or the date of entry.

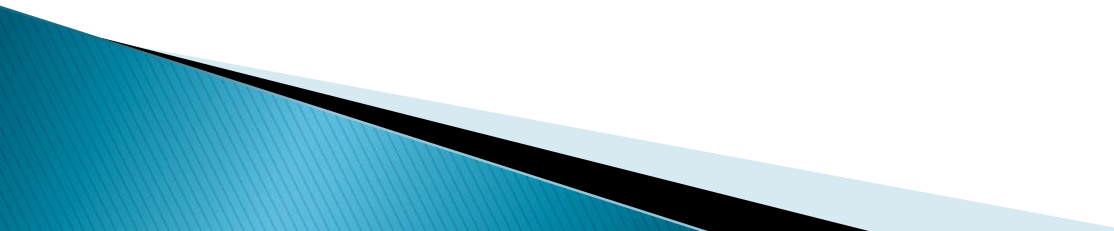
Approved Target Marketings

- ▶ *maximum amount of milk* that may be stated as Target Marketings on the application.
- ▶ Approved Target Marketings are certified by the producer and are *subject to inspection* by the insurance company.

LGM_Calc_Ver2_OSUE: An Excel Workbook Example

- ▶ LGM_Calc_Ver2_OSUE
 - Microsoft Excel Workbook available for both Excel 2003 or Excel 2007 versions.
 - Available on the Ohio Dairy Web 2011 website
 - <http://aede.osu.edu/programs/ohiodairy/>
 - Available by email request to thraen.1@osu.edu
- ▶ Includes all of the components required to evaluate Livestock Gross Margin – Dairy insurance product.
 - Actual premiums must be calculated using the RMA Premium Calculator at the time of the contract.
 - <http://www.rma.usda.gov/tools/premcalc.html>

Target Marketings

- ▶ **Target marketings** for any month of an insurance period cannot be greater than the approved target marketings for that insurance period.
 - ▶ Your **target marketings** are due at the time of application in the initial insurance period and your target Marketings Report is due by the sales closing date in subsequent insurance periods.
 - ▶ **Target marketings** cannot exceed 240,000 cwt for a single contract year and single owner.
- 

Target Marketings

- ▶ No indemnity will be owed, but producer will still be responsible for any premiums owed, if the producer's marketing report:
 - Is not supported by written, verifiable records in accordance with the definition of marketing report; or
 - Fails to accurately report actual marketings or other material information.
- ▶ In other words... no bogus bookwork !

TargetMarketings

ENTER THIS INFORMATION: Daily Milk Production (pounds/cow):										65					
ENTER THIS INFORMATION: Average Herd Size (number of cows):										450					
										Enter your starting month number in the box (mm/dd/yyyy) =>					
										Starting month is the first contract month (no coverage in this month)					
Mo. No.	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Month	Days	Coverage Indicator (0/1)	Override Indicator (0/1)	Enter Coverage if different from #s * Cows	Contract Month	Estimated Monthly milk production (Cwt = #s * cows)	Milk Covered Under the Insurance Contract (cwt)	LGM Class 3 Calculated Average Price	LGM Anticipated Milk Revenue	Corn Fed Equiv Cost	SBM Fed Equiv. Cost	Expect Cost of Feed	LGM Anticipated Margin	
	November-10	Pmonth	No Coverage in the first contract month												
1	December-10														
2	January-11	31	1	1	4,534	1	9,068	4,534	17.48	79,249.95	14,388.42	3,002.41	17,390.83	61,859.12	
3	February-11	28	1	1	4,095	2	8,190	4,095	17.2	70,434.00	13,095.81	2,720.65	15,816.46	54,617.54	
4	March-11	31	1	1	4,534	3	9,068	4,534	16.86	76,439.03	14,609.44	3,021.80	17,631.24	58,807.78	
5	April-11	30	1	1	4,388	4	8,775	4,388	16.49	72,349.88	14,202.34	2,926.56	17,128.90	55,220.98	
6	May-11	31	1	1	4,534	5	9,068	4,534	16.55	75,033.56	14,719.95	3,026.35	17,746.30	57,287.26	
7	June-11	30	1	1	4,388	6	8,775	4,388	16.6	72,832.50	13,731.78	2,862.55	16,594.32	56,238.18	
8	July-11	31	1	1	4,534	7	9,068	4,534	16.63	75,396.26	13,659.06	2,881.60	16,540.66	58,855.61	
9	August-11	31	1	1	4,534	8	9,068	4,534	16.65	75,486.94	13,393.83	2,771.80	16,165.64	59,321.30	
10	September-11	30	1	1	4,388	9	8,775	4,388	16.43	72,086.63	12,726.49	2,672.20	15,398.69	56,687.93	
11	October-11	31	1	1	4,534	10	9,068	4,534	16.36	74,172.15	12,885.48	2,750.74	15,636.22	58,535.93	
						Total production (in Cwt) =	88,920			743,480.89	137,412.61	28,636.65	166,049.25	577,431.63	
						Total Insured production (in Cwt) =	88,920	44,460	Anticipated Revenue / cwt =	16.72		Anticipated Gross Margin / cwt	1.87	12.99	

Expected Class 3 Milk Price

- ▶ Expected Milk Price for any month is the simple average of the CME Class III milk contract final daily settlement price during the price discovery period ...
 - The expected price measurement period is the three days prior to and including the last Friday of the month that is a business day.

MilkPriceCalc{2}

Calculation of Expected Milk Price and Anticipated Milk Revenue Stream
Class 3 Settle Price

Start Year Month		Class 3 Settle Price Day -3 (\$/cwt)	Class 3 Settle Price Day -2 (\$/cwt)	Class 3 Settle Price Day -1 (\$/cwt)	Expected Average Milk Price (\$/cwt)	Milk Basis (\$/cwt)	Total Milk Price (\$/cwt)	Actual Milk Price (\$/cwt)	Actual Milk Price wBasis (\$/cwt)	Total Production cwt	Total LGM Revenue
Trade Dates		1	2	3	4	5	6	7		8	9
Year	Contract Month 1	17.48	17.48	17.48	17.48	0	17.48	13.85	13.85	4,534	79,249.95
	Contract Month 2	17.2	17.2	17.2	17.2	0	17.2	13.39	13.39	4,095	70,434.00
	Contract Month 3	16.86	16.86	16.86	16.86	0	16.86	17.48	17.48	4,534	76,439.03
	Contract Month 4	16.49	16.49	16.49	16.49	0	16.49	17.2	17.2	4,388	72,349.88
	Contract Month 5	16.55	16.55	16.55	16.55	0	16.55	16.86	16.86	4,534	75,033.56
	Contract Month 6	16.6	16.6	16.6	16.6	0	16.6	16.49	16.49	4,388	72,832.50
	Contract Month 7	16.63	16.63	16.63	16.63	0	16.63	16.55	16.55	4,534	75,396.26
	Contract Month 8	16.65	16.65	16.65	16.65	0	16.65	16.6	16.6	4,534	75,486.94
	Contract Month 9	16.43	16.43	16.43	16.43	0	16.43	16.63	16.63	4,388	72,086.63
	Contract Month 10	16.36	16.36	16.36	16.36	0	16.36	16.65	16.65	4,534	74,172.15
										44,460	
										Total Anticipated Revenue	743,480.89

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MilkPriceCalc

Calculation of Expected Milk Price and Anticipated Milk Revenue Stream									
Class 3 Settle Price									
Start Year Month		Class 3 Settle Price Day -3 (\$/cwt)	Class 3 Settle Price Day -2 (\$/cwt)	Class 3 Settle Price Day -1 (\$/cwt)	Average (\$/cwt)	Milk Basis (\$/cwt)	Total Milk Price (\$/cwt)	Total Production cwt	Total LGM Revenue
Year	Trade Dates	1	2	3	4	5	6	7	8
	Contract Month 1	10.08	10.08	10.08	10.08	2.31	12.39	12,740	157,848.60
	Contract Month 2	10.26	10.26	10.26	10.26	2.23	12.49	14,105	176,171.45
	Contract Month 3	10.5	10.5	10.5	10.5	2.32	12.82	13,650	174,993.00
	Contract Month 4	10.68	10.68	10.68	10.68	2.15	12.83	14,105	180,967.15
	Contract Month 5	11.34	11.34	11.34	11.34	2.34	13.68	13,650	186,732.00
	Contract Month 6	11.99	11.99	11.99	11.99	0.98	12.97	14,105	182,941.85
	Contract Month 7	12.19	12.19	12.19	12.19	1.25	13.44	14,105	189,571.20
	Contract Month 8	12.62	12.62	12.62	12.62	1.51	14.13	13,650	192,874.50
	Contract Month 9	12.92	12.92	12.92	12.92	1.63	14.55	14,105	205,227.75
	Contract Month 10	13.77	13.77	13.77	13.77	1.26	15.03	13,650	205,159.50
								137,865	
								Total Anticipated Revenue	1,852,487.00

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◀ Dec 2008 ▶							◀ Jan 2009 ▶							
M	T	W	T	F	S	S	M	T	W	T	F	S	S	
1	2	3	4	5	6	7					1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11	
15	16	17	18	19	20	21	12	13	14	15	16	17	18	
22	23	24	25	26	27	28	19	20	21	22	23	24	25	
29	30	31					26	27	28	29	30	31		
◀ Feb 2009 ▶							◀ Mar 2009 ▶							
M	T	W	T	F	S	S	M	T	W	T	F	S	S	
						1							1	
2	3	4	5	6	7	8	2	3	4	5	6	7	8	
9	10	11	12	13	14	15	9	10	11	12	13	14	15	
16	17	18	19	20	21	22	16	17	18	19	20	21	22	
23	24	25	26	27	28		23	24	25	26	27	28	29	
							30	31						

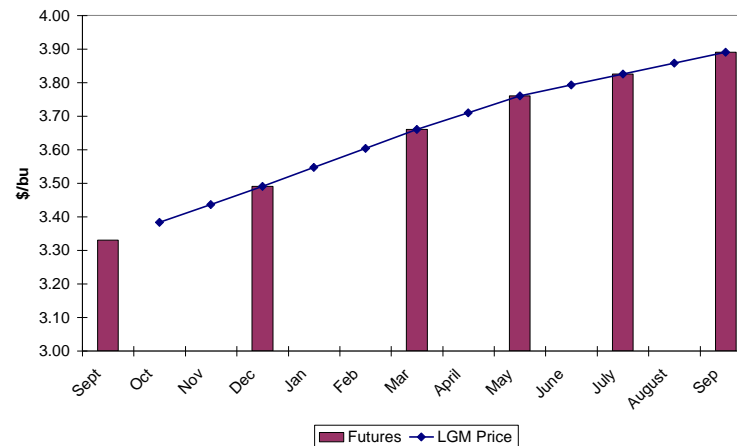
Expected Corn Price

- ▶ For CBOT contract months:
 - The expected corn price is the simple average of the settlement prices for the CME Group corn futures contract for the month during the expected price measurement period
- ▶ For CBOT non-contract months:
 - the expected corn price is the weighted average of the immediately surrounding months' simple average of the daily settlement prices during the expected price measurement period.
- ▶ The expected price measurement period is the three days prior to and including the last Friday of the month that is a business day.

FeedCostCalc{3}: Expected Corn Price

Contract Month	Corn Settle Price CBOT			Average (\$/bu)	Imputed Corn Price (\$/bu)	Corn Basis (\$/bu)	Corn Price (\$/bu)
	Day 1	Day 2	Day 3				
	1	2	3				
Contract Month 1	6.51	6.51	6.51	6.51	6.51	0	6.51
Contract Month 2	6.56	6.56	6.56	6.56	6.56	0	6.56
Contract Month 3	6.61	6.61	6.61	6.61	6.61	0	6.61
Contract Month 4	6.64	6.64	6.64	6.64	6.64	0	6.64
Contract Month 5	6.66	6.66	6.66	6.66	6.66	0	6.66
Contract Month 6	6.42	6.42	6.42	6.42	6.42	0	6.42
Contract Month 7	6.18	6.18	6.18	6.18	6.18	0	6.18
Contract Month 8	6.06	6.06	6.06	6.06	6.06	0	6.06
Contract Month 9	5.95	5.95	5.95	5.95	5.95	0	5.95
Contract Month 10	5.83	5.83	5.83	5.83	5.83	0	5.83

Converting Corn Futures Prices to LGM Corn Prices



Expected Soybean Meal Price

- ▶ For CBOT contract months:
 - The expected soybean meal price is the simple average of the settlement prices for the CME Group corn futures contract for the month during the expected price measurement period
- ▶ For CBOT non-contract months:
 - the expected soybean meal price is the weighted average of the immediately surrounding months' simple average of the daily settlement prices during the expected price measurement period.
- ▶ The expected price measurement period is the three days prior to and including the last Friday of the month that is a business day.

FeedCostCalc{3}: Soybean meal

	Soybean Meal Settle Price CBOT				Imputed SBM Price (\$/ton)
Contract Month	Day1 1	Day2 2	Day3 3	Average (\$/ton) 4	Price (\$/ton) 5
Contract Month 1	376.27	376.27	376.27	376.27	376.27
Contract Month 2	377.49	377.49	377.49	377.49	377.49
Contract Month 3	378.7	378.7	378.7	378.7	378.7
Contract Month 4	378.99	378.99	378.99	378.99	378.99
Contract Month 5	379.27	379.27	379.27	379.27	379.27
Contract Month 6	370.7	370.7	370.7	370.7	370.7
Contract Month 7	361.13	361.13	361.13	361.13	361.13
Contract Month 8	347.37	347.37	347.37	347.37	347.37
Contract Month 9	346.05	346.05	346.05	346.05	346.05
Contract Month 10	344.73	344.73	344.73	344.73	344.73

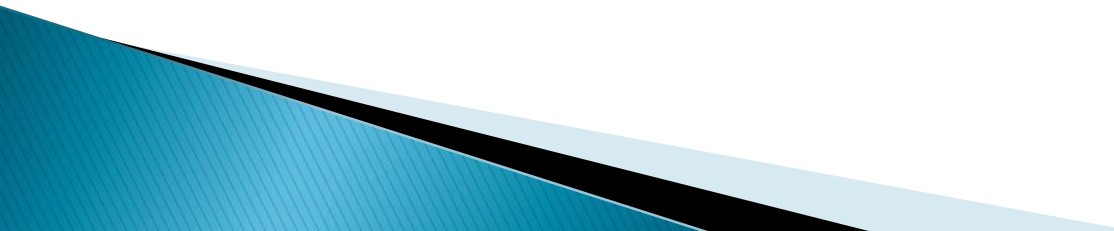
Expected Cost of Feed

- ▶ Must convert tons of feedstock used for energy into tons of corn equivalent and tons of feedstock used for protein into tons of soybean meal equivalent

Corn, Soybean equivalent conversion factors

Feed Stuff	Ratios	
	Soybean Meal	Corn
Barley	0.111	0.866
Blood Meal	2.025	-1.235
Brewer's Grain Dry	0.433	0.357
Brewer's Grain Wet (21% DM)	0.099	0.081
Brewer's Grain Wet (40% DM)	0.188	0.155
Corn, Shelled	0	1
Corn and cob meal (ear corn)	-0.007	0.985
Corn gluten meal, dry	1.408	-0.42
Corn gluten feed, dry	0.304	0.597
Whole cottonseed	0.323	0.85
Cottonseed meal (41% CP)	0.905	0.036
Cottonseed meal (36% CP)	0.867	0.015
DDGS (92% DM)	0.394	0.686
DDGS (60% DM)	0.257	0.447
Feather meal	1.6	-0.743
Fish meal, herring	1.875	-0.865
Fish meal, menhaden	1.651	-0.768
Hominy	0.057	0.977
Meat meal	1.227	-0.349
Meat and bone meal	1.426	-0.555
Molasses, cane, dry	0.075	0.791
Molasses, cane, wet	-0.037	0.747
Oats	0.12	0.779
Peanut skins	0.265	0.439
Whole soybeans	0.836	0.279
Soybean meal	1	0
Soyhulls	0.1	0.819
Thin stillage, slop, 6% DM	0.026	0.045
Wheat	0.161	0.884
Wheat bran	0.235	0.585
Wheat middlings	0.274	0.523

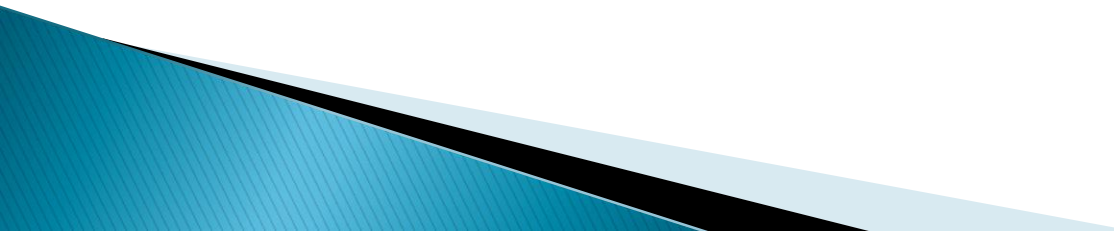
How Much Does LGM for Dairy Cost?

- ▶ Premiums are set so that the farmer gets out what he puts in over the long haul
 - In times of high price volatility, premiums will be high.
 - Farmers who insure 10 months together will pay less than farmers who insure month to month.
 - Farmers who insure 100% of their margin will pay more than those who take a deductible.
 - if you have target marketings in at least two (2) months of an insurance period. No subsidy is available if you have only reported one (1) month of target marketings in an insurance period.
- 

Is there a subsidy applied to the insurance premium?

- ▶ If you have target marketings in at least two (2) months of an insurance period you will receive a subsidy on the premiums.
 - No subsidy is available if you have only reported one (1) month of target marketings in an insurance period.
 - The subsidy increases from ~20% to 50% as your selected deductible increases from zero to \$1.10 per hundredweight.
 - After \$1.10 the subsidy is fixed at 50% of the premium.

Example Dairy Farm

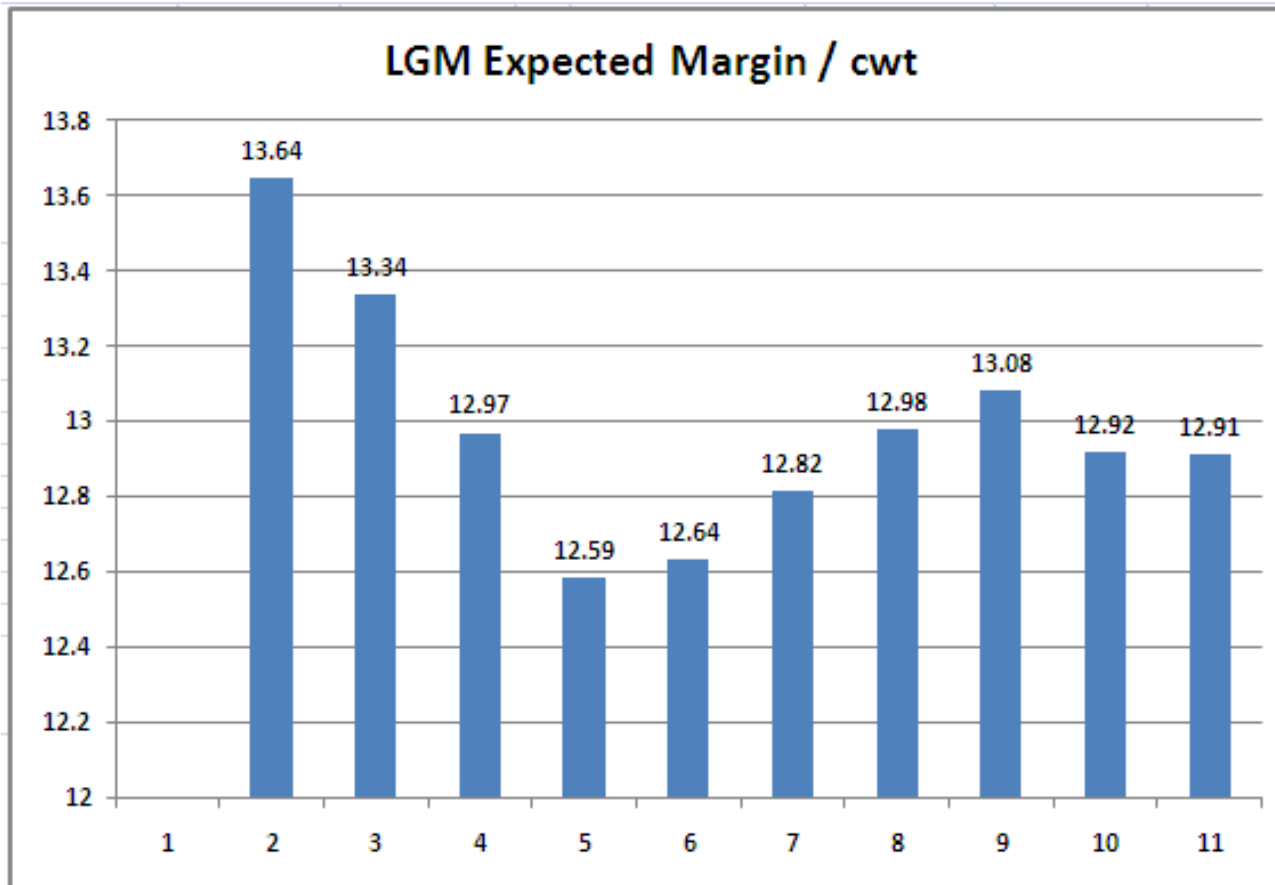
- ▶ 450 cows in milk.
 - ▶ 65 pounds of milk per cow per day.
 - ▶ Total Target Marketings = 44,460 cwt.
 - 50% of total anticipated marketings (88,920)
 - ▶ Buys LGM-D in November 2010 for insurance period January – October 2011.
 - ▶ 606.88 tons of corn equivalent use / contract
 - ▶ 78.25 tons of soybean meal use / contract
- 

Example Dairy Farm...

H	I	J	K	L	M	N	O	P
Estimated Monthly milk production (Cwt = #'s * cows)	Milk Covered Under the Insurance Contract (cwt)	LGM Class 3 Calculated Average Price	LGM Anticipated Milk Revenue	Corn Fed Equiv Cost	SBM Fed Equiv. Cost	Expect Cost of Feed	LGM Anticipated Margin	LGM Anticipated Margin / cwt
9,068	4,534	17.48	79,249.95	14,388.42	3,002.41	17,390.83	61,859.12	13.64
8,190	4,095	17.2	70,434.00	13,095.81	2,720.65	15,816.46	54,617.54	13.34
9,068	4,534	16.86	76,439.03	14,609.44	3,021.80	17,631.24	58,807.78	12.97
8,775	4,388	16.49	72,349.88	14,202.34	2,926.56	17,128.90	55,220.98	12.59
9,068	4,534	16.55	75,033.56	14,719.95	3,026.35	17,746.30	57,287.26	12.64
8,775	4,388	16.6	72,832.50	13,731.78	2,862.55	16,594.32	56,238.18	12.82
9,068	4,534	16.63	75,396.26	13,659.06	2,881.60	16,540.66	58,855.61	12.98
9,068	4,534	16.65	75,486.94	13,393.83	2,771.80	16,165.64	59,321.30	13.08
8,775	4,388	16.43	72,086.63	12,726.49	2,672.20	15,398.69	56,687.93	12.92
9,068	4,534	16.36	74,172.15	12,885.48	2,750.74	15,636.22	58,535.93	12.91
88,920			743,480.89	137,412.61	28,636.65	166,049.25	577,431.63	
88,920	44,460	Anticipated Revenue / cwt =	16.72		Anticipated Gross Margin / cwt	1.87	12.99	

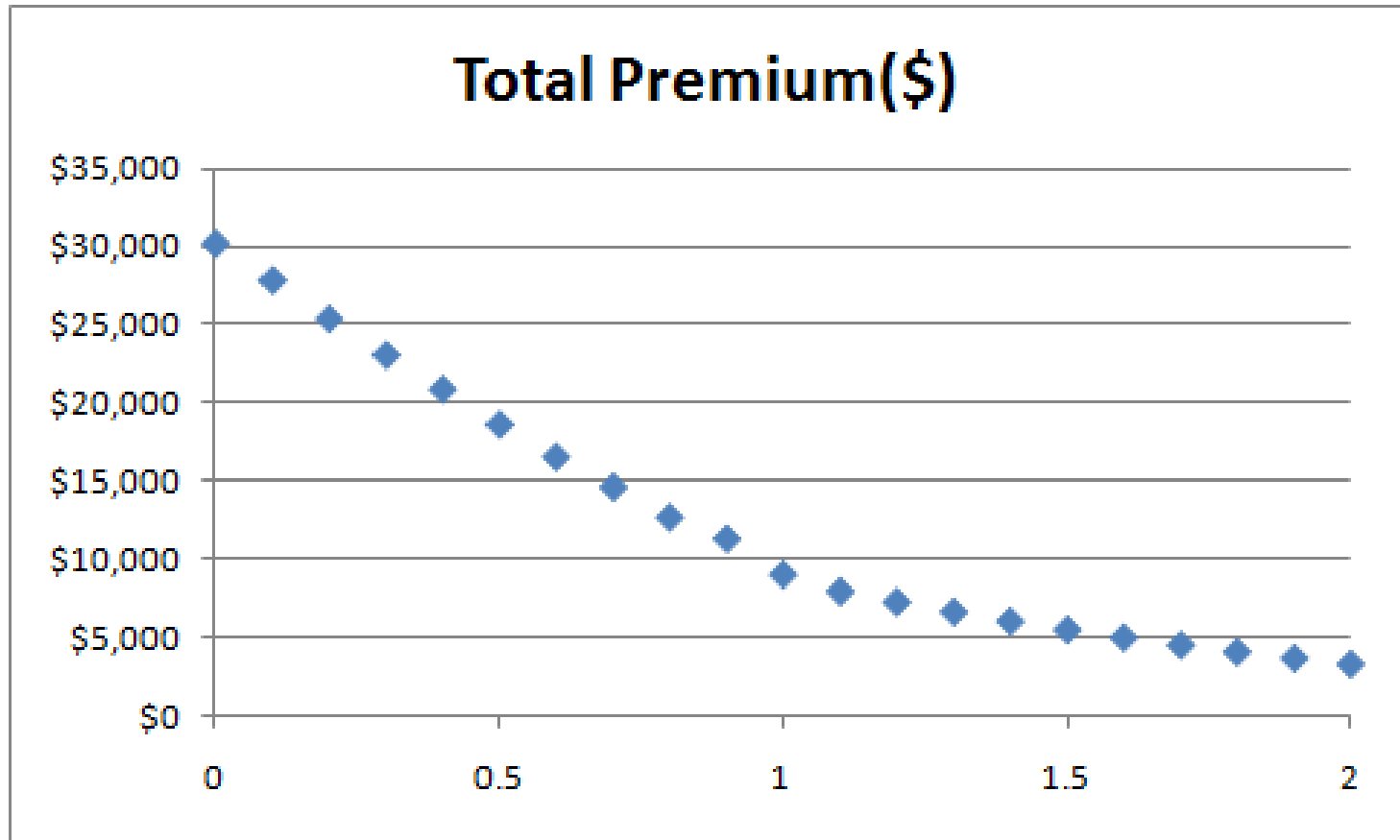
Worksheet: TargetMarketings{1}

Expected Gross Margin

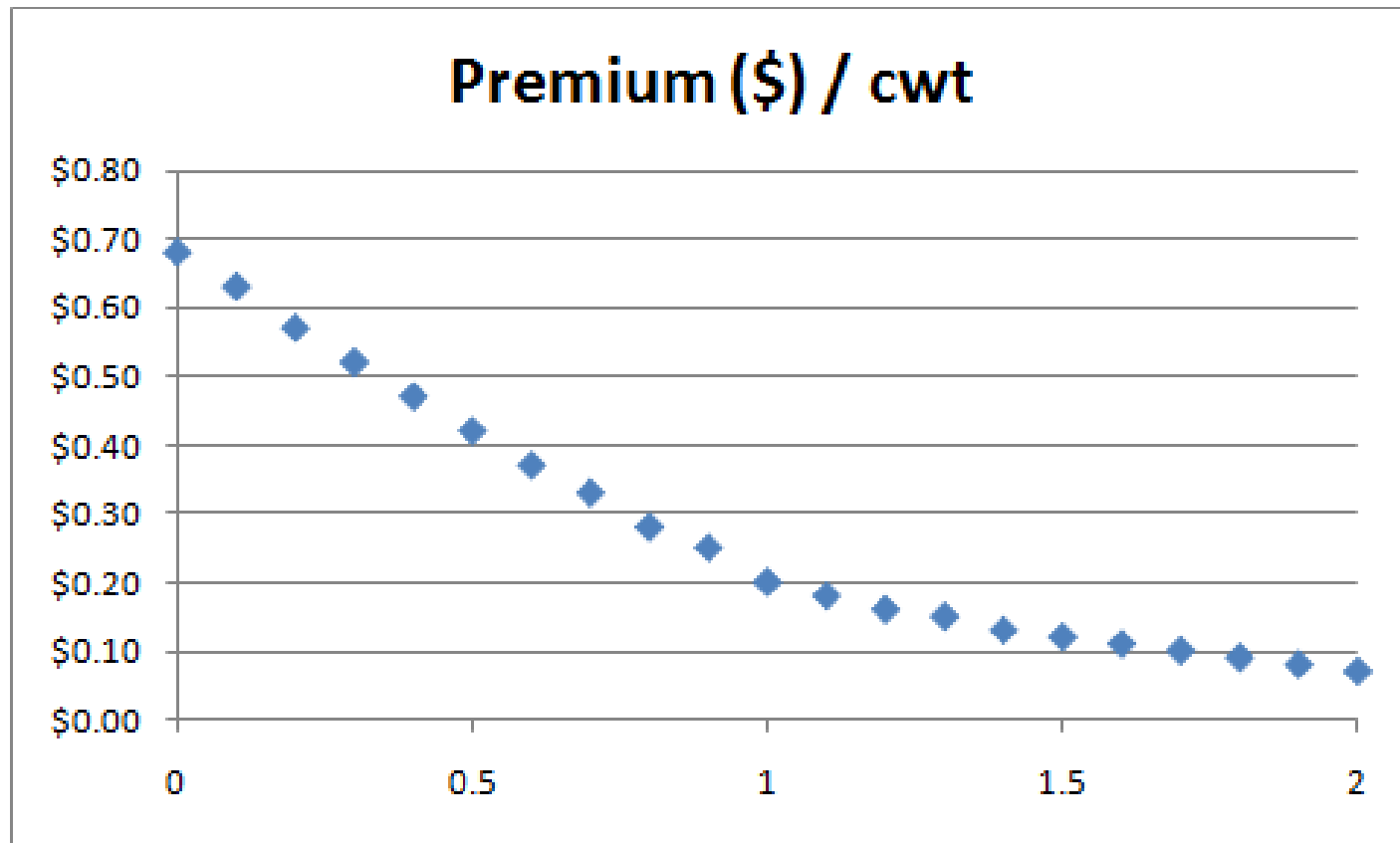


Average per month = \$ 12.99 / cwt.

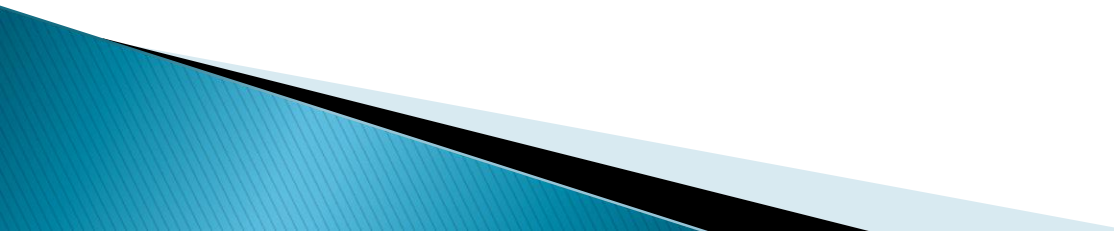
Total (subsidized) premium vs. deductible on 44,463 cwt of LGM milk



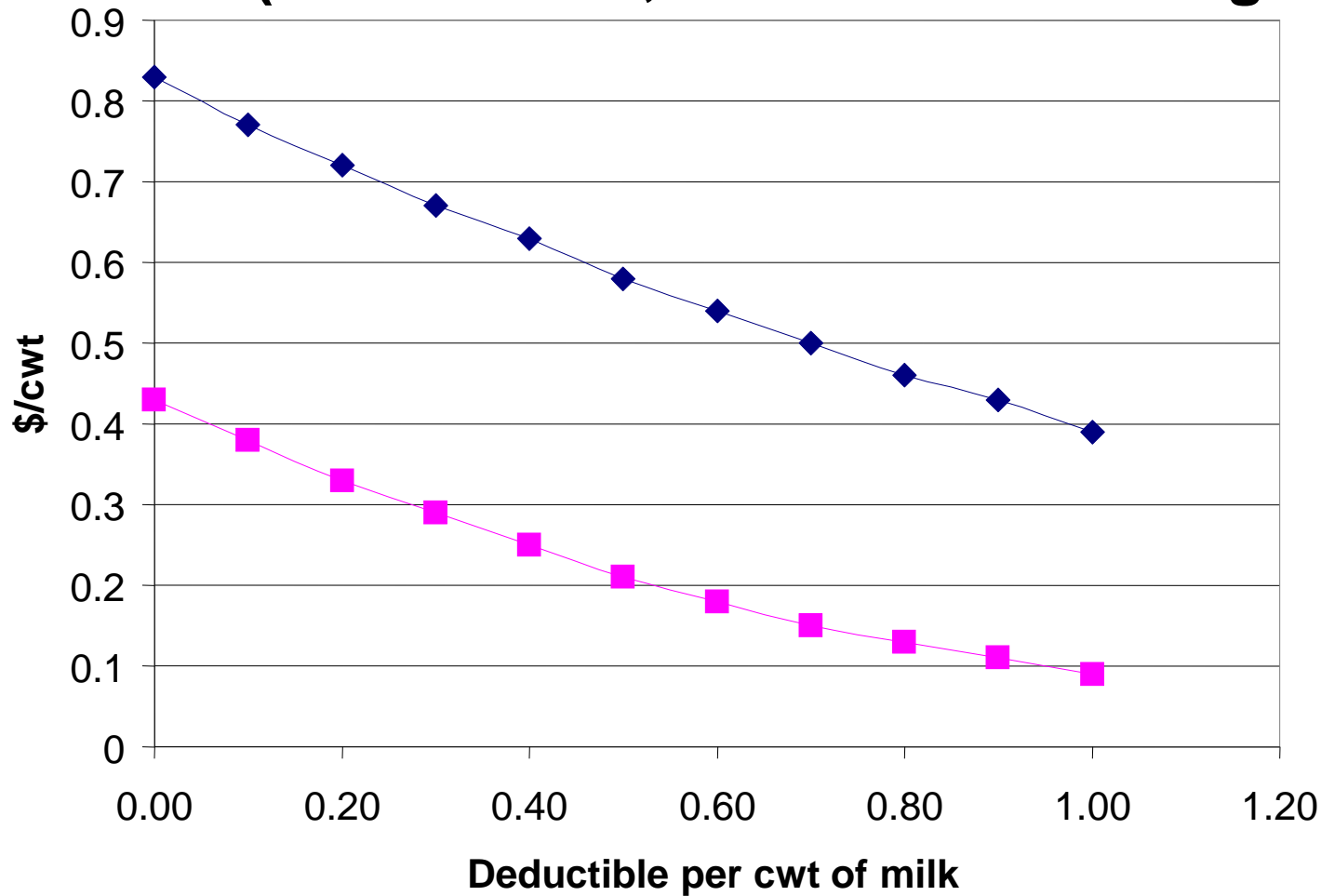
Total (subsidized) premium vs. deductible on 44,463 cwt of LGM milk



Premium key points

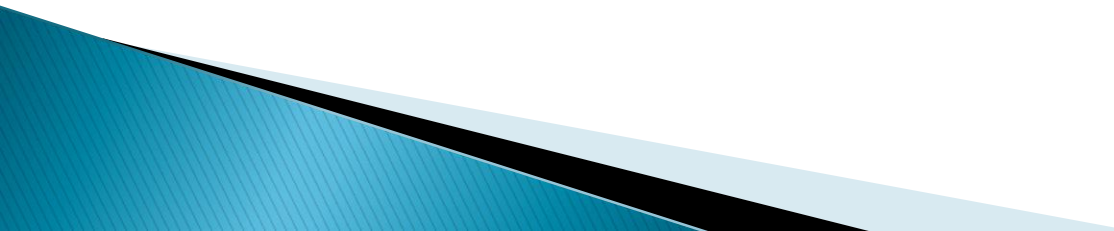
- ▶ Premium is more expensive if months are insured singly.
 - Best to insure multiple months in one contract
 - ▶ Premium is more expensive if markets are more volatile.
 - determined by the price behavior in the futures/options markets
 - ▶ Premium subsidy is available *only* if multiple months are insured.
- 

Impact on Premium of Price Volatility (0 Deductible, Months Insured Together)



—◆— Month A Price Volatility —■— 1/2 Month A Price Volatility

Underwriting Capacity

- ▶ LGM for Dairy has limited underwriting capacity that will be distributed through the Federal Crop Insurance Corporation's underwriting capacity manager. The underwriting capacity will be distributed on a first come, first served basis.
 - ▶ LGM for Dairy will not be offered for sale after capacity is full or at any time the underwriting capacity manager is not functional.
- 

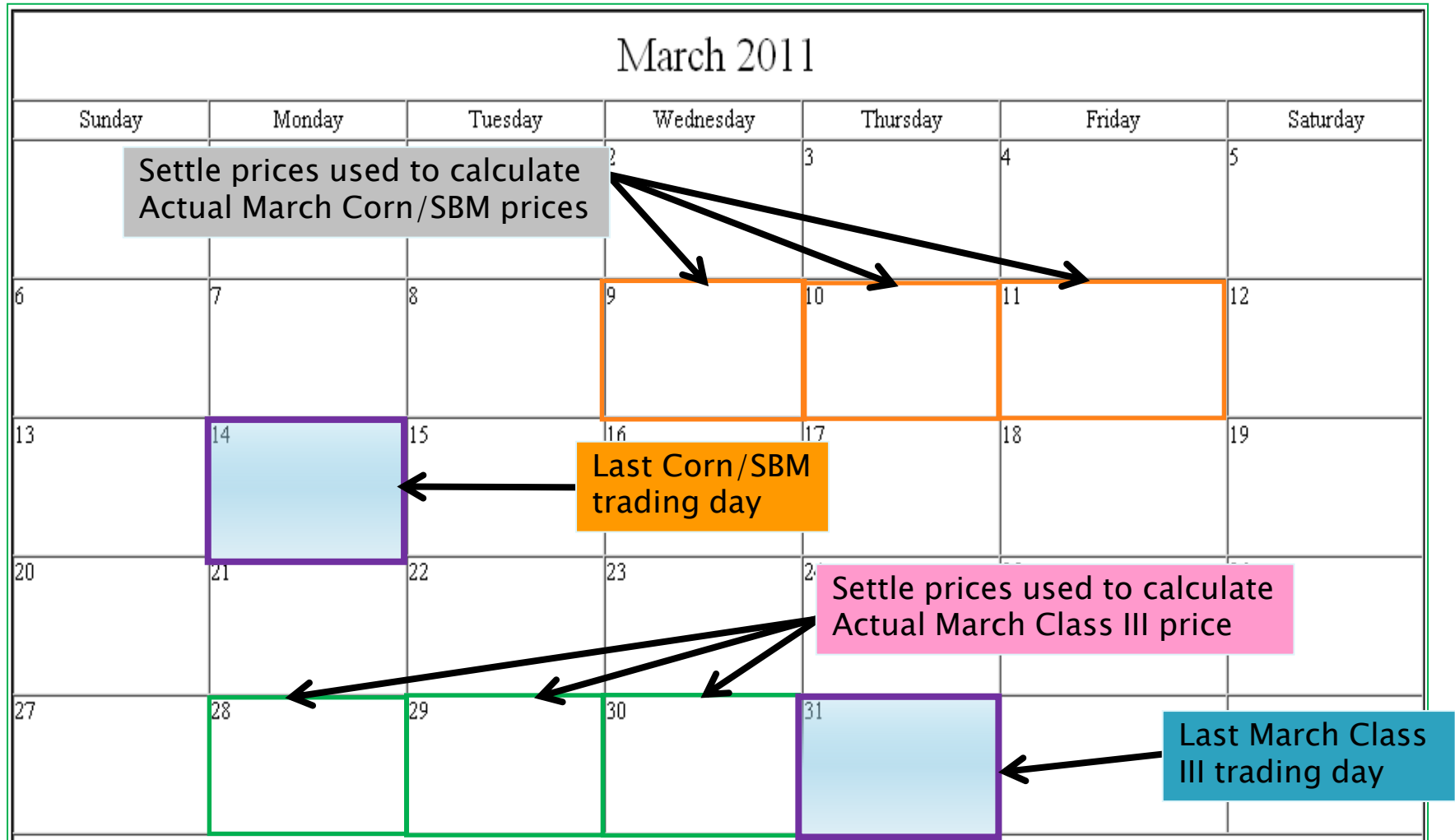
Limitations

- ▶ A producer can insure any amount of milk for which he or she has adequate dairy cattle to produce.
 - Upper limit is 240,000 cwt per dairy cattle owner per contract year.
 - Multiple ownership is allowed and the upper limit applies to each owner on her/his share.

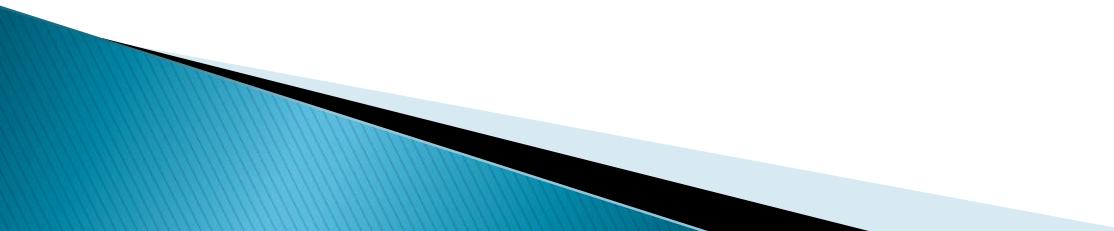
Actual Prices and Actual Gross Margin

- ▶ Actual prices are the contract settle prices on specific days for each month in the contract.
 - Calculation uses the simple average for a three day sequence of contract settle prices,
- ▶ Actual Gross Margin is the sum of the individual months actual gross margin values.
 - Indemnity or payout is determined by the aggregate actual gross margin and not individual months actual gross margin
 - Example: GMG = \$350,000 and LGM has two months of coverage. Month 1 AGM = \$100,000 and Month 2 AGM = \$250,000. Indemnity = \$0.0.

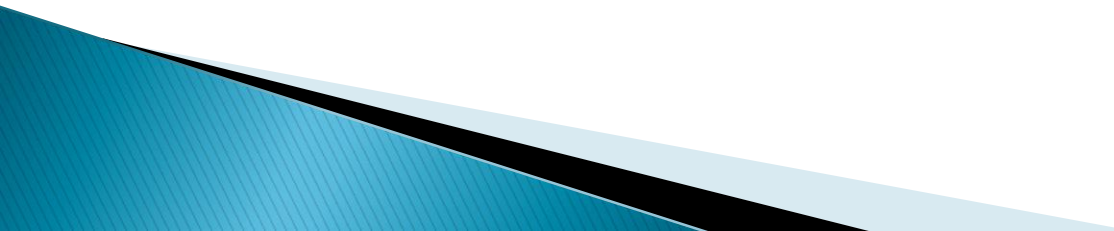
Determining Actual Prices and Gross Margin



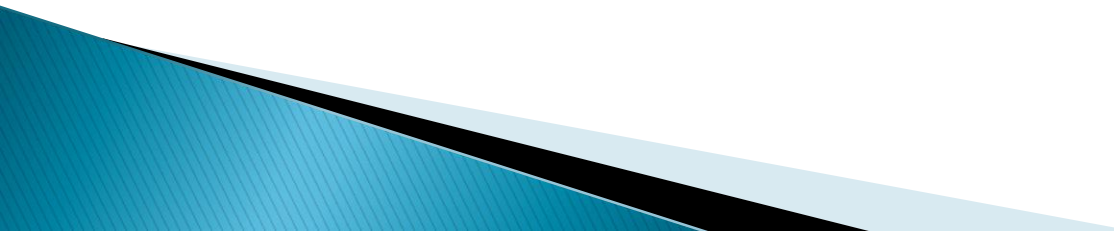
Indemnities

- ▶ In the case of a payable loss on insured milk, a notice of probable loss approximately will be sent ten days after all actual gross margins applicable for the insurance period are released by RMA.
 - ▶ In the event of loss covered by this policy, your claim will be settled by subtracting the actual total gross margin from the gross margin guarantee.
 - ▶ If the result is greater than zero, an indemnity will be paid.
- 

Indemnities

- ▶ In the event that the total of actual marketings are less than 75 percent of the total of targeted marketings for the insurance period, indemnities will be reduced by the percentage by which the total of actual marketings for the insurance period fell below the total of targeted marketings for the period.
- 

Assignment of Indemnity

- ▶ Producer may assign to another party the right to an indemnity for the insurance period.
 - ▶ If producer has suffered a loss from an insurable cause and fails to file a marketing report within 15 days after you receive a notice of probable loss, the assignee may submit the marketing report not later than 15 days after the 15-day period has expired.
- 

Marketings Report

- ▶ In the event of a loss the producer must submit a *Marketings Report* and sales receipts (milk check) showing evidence of actual marketings.
- ▶ The marketing report must be accompanied by copies of milk check receipts that provide records of the actual marketings shown on the marketing report.
- ▶ The producer must submit the *Marketings Report* **within 15 days of receipt** of Notice of Probable Loss.

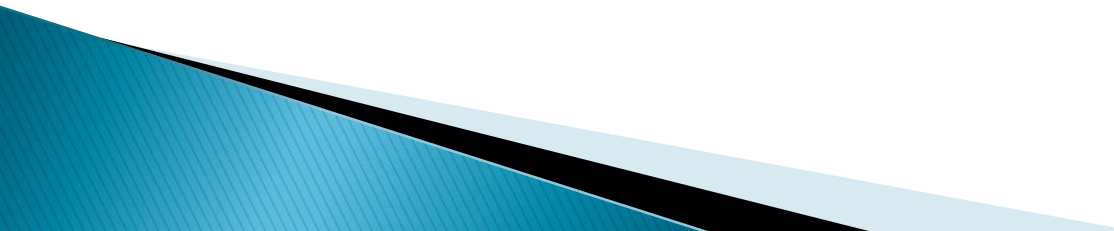
Premium

- ▶ Premium dollar amount is dependent on a number of variables
 - Amount of coverage selected
 - Producer's marketing plan
 - Level of futures prices
 - Amount of price volatility
 - Subsidy if applicable

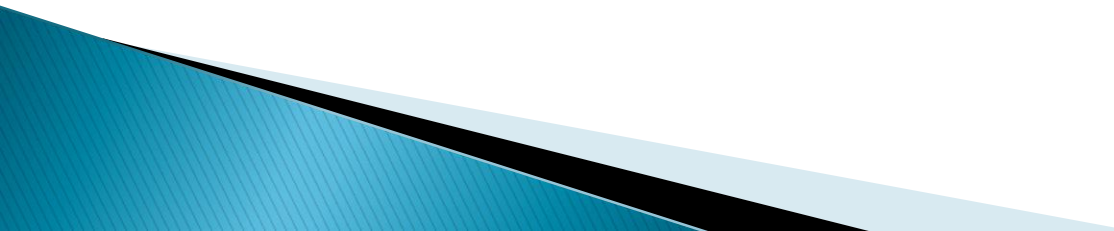
Premium

- ▶ Premium billing dates are determined by your target marketing report. The premium billing date will be the first business day of the month following the last month that you report insured marketings in your target marketings report.

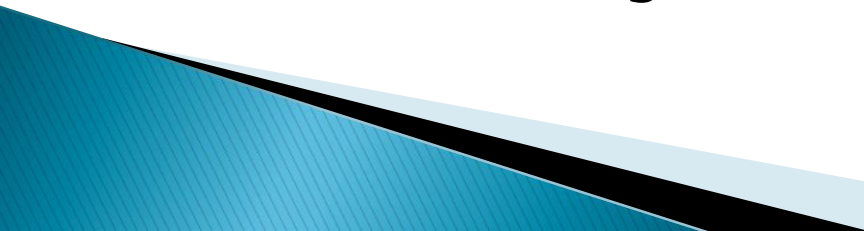
Life of Policy

- ▶ This is a continuous policy with twelve overlapping insurance periods per year.
 - ▶ Target marketings must be submitted for each insurance period.
 - ▶ If a Target Marketings Report is not submitted by the sales closing date for the applicable insurance period, target marketings for that insurance period will be zero.
- 

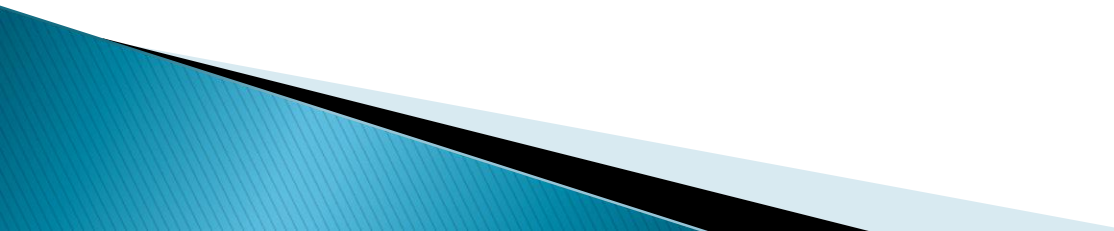
When does Coverage begin?

- ▶ Coverage begins one month after the sales closing date. Coverage begins on producer's milk one full calendar month following the sales closing date, unless otherwise specified in the Special Provisions, provided premium for the coverage has been paid in full.
 - For example for the January 28 sales closing date, coverage begins on March 1.
- 

Important Dates

- ▶ The contract change date is April 30. Any changes to the LGM for Dairy Cattle Policy will be made prior to this contract change Date.
 - ▶ The cancellation date is June 30 for all insurance periods.
 - ▶ The end of insurance for the policy is 11 months after the sales closing date.
 - For example, for the January 31 sales closing date, coverage ends on December 31.
- 

Insurance Period

- ▶ Coverage ends at the earliest of:
 - (1) The last month of the insurance period in which you have target marketings;
 - (2) As otherwise specified in the policy.
 - (3) If the end date is on a Saturday, Sunday, or federal holiday, or, if for any reason the relevant report is not available to us for that day or any other day of the ending period, then the actual ending value will be based on the most recent reports made prior to that date.
- 

Do I 'Need' Livestock Gross Margin Insurance ?

- ▶ **Read the companion paper (available on this website)**
 - Do I need Livestock Gross Margin Insurance? Livestock gross margin insurance as a profit management tool for my dairy business. A guide for Ohio dairy producers.
- ▶ **Evaluation Question #1: How do I determine my risk exposure?**
 - What is the 'risk' exposure for your dairy operation gross margin?
 - How do I determine my risk exposure for 'low' margin?
- ▶ **Evaluation Question #2: How inadequate of a margin can you withstand?**
 - Determining how much equity you have and how much you need.
 - Small Herd Example:
 - Large Herd Example:
- ▶ **Evaluation Question #3: What is your maximum reduction in equity allowable?**
 - Determining how much of an equity reduction you can sustain on your dairy.
 - Determining your annual cash carryover and retained earnings.
 - Determining your total absorbable losses for your dairy operation.

What is the potential loss?

Small herd ~ 125 cows / 53# per day

'normal' operating margin (IOFC) = \$168,027

Large herd ~ 880 cows / 75# per day

'normal' operating margin (IOFC) = \$1,627,982

	20% reduction	40% reduction	60% reduction	80% reduction
Small Herd Potential Loss (\$)	26,727	53,545	80,318	127,120
Large Herd Potential Loss (\$)	259,565	519,130	778,695	1,232,933

Balance Sheet for Small Herd and Large Herd dairy farms 2007

2007 FARM BUSINESS & NONFARM BALANCE SHEET			
47 Small Herd Dairy Farms, 2007			
Farm Assets	Dec. 31	Farm Liabilities & Net Worth	Dec. 31
<u>Current</u>		<u>Current</u>	
Farm cash, checking & savings	\$ 6,856	Accounts payable	\$ 6,435
Accounts Receivable	16,880	Operating debt	5,512
Prepaid Expenses	205	Short Term	511
Feed & Supplies	40,199	Advanced govt. receipts	0
		Current Portion:	
		Intermediate	10,051
		Long Term	4,494
Total Current	\$ 64,141	Total Current	\$ 27,003
<u>Intermediate</u>		<u>Intermediate</u>	
Dairy Cows:		Structured debt	
owned	\$ 85,446	1-10 years	\$ 55,647
leased	0	Financial lease	
Heifers	48,795	(cattle/machinery)	112
Bulls/other livestock	2,498	Farm Credit Stock	478
Mach./equipment owned	120,273	Total Intermediate	\$ 56,237
Mach./equipment leased	112		
Farm Credit stock	478		
Other stock/certificate	2,932		
Total Intermediate	\$ 260,534		
<u>Long Term</u>		<u>Long Term</u>	
Land/buildings:		Structured debt	
owned	\$ 340,384	>10 years	\$ 56,212
leased	0	Financial lease	
Total Long Term	\$ 340,384	(structures)	0
		Total Long Term	\$ 56,212
Total Farm Assets	\$ 665,059	Total Farm Liab.	\$ 139,452
		FARM EQUITY (FARM)	\$ 525,607
		TOTAL EQUITY RATIO	79%

2007 FARM BUSINESS & NONFARM BALANCE SHEET			
86 Large Herd Dairy Farms, 2007			
Farm Assets	Dec. 31	Farm Liabilities & Total Equity	Dec. 31
<u>Current</u>		<u>Current</u>	
Farm cash, checking & savings	\$ 29,358.00	Accounts payable	\$ 69,517
Accounts Receivable	307,747	Operating debt	147,296
Prepaid Expenses	11,202	Short Term	7,205
Feed & Supplies	759,929	Advanced govt. receipts	0
		Current Portion:	
		Intermediate	185,715
		Long Term	57,600
Total Current	\$ 1,108,236	Total Current	\$ 467,333
<u>Intermediate</u>		<u>Intermediate</u>	
Dairy Cows:		Structured debt	
owned	\$ 1,133,343	1-10 years	\$ 945,053
leased	1,808	Financial lease	
Heifers	665,007	(cattle/machinery)	4,047
Bulls/other livestock	9,023	Farm Credit Stock	1,149
Mach./equipment owned	1,070,708	Total Intermediate	\$ 950,249
Mach./equipment leased	2,239		
Farm Credit stock	1,149		
Other stock/certificate	137,594		
Total Intermediate	\$ 3,020,871		
<u>Long Term</u>		<u>Long Term</u>	
Land/buildings:		Structured debt	
owned	\$ 2,465,536	>10 years	\$ 873,451
leased	626	Financial lease	
Total Long Term	\$ 2,466,162	(structures)	626
		Total Long Term	\$ 874,077
Total Farm Assets	\$ 6,595,269	Total Farm Liab.	\$ 2,291,659
		TOTAL EQUITY (FARM)	\$ 4,303,610
		TOTAL EQUITY RATIO	65.3%

Evaluation Question #2: How inadequate of a margin can you withstand?

- **Determining how much equity you have and how much you need.**
- Assume 2009 feed prices and not 2007 feed prices
 - **Small Herd Example:**
 - Gross margin would have been reduced by 39% or \$117,425. Total liabilities increase and total equity ratio falls from 79% to 61%.
 - **Large Herd Example:**
 - Gross margin would be been reduced by 79% or \$1,131,727. Total liabilities increase and total equity ratio falls from 65% to 48%.

Evaluation Question #3: What is your maximum reduction in equity allowable?

- ▶ **Determining how much of an equity reduction you can sustain on your dairy.**
 - Assume the minimum total equity ratio is 65%.
 - Maximum reduction is 14% of total equity
 - $+0.14 * \$665,059 = \$93,318$.
- ▶ **Determine your annual cash carryover and retained earnings.**
 - cash carryover equals \$18,993
- ▶ **Maximum total absorbable losses**
 - Maximum reduction in total equity plus cash carryover
 - $\$93,318 + \$18,993 = \$112,311$

Evaluation Question #3: What is your maximum reduction in equity allowable?

- ▶ **Determining how much of an equity reduction you can sustain on your dairy.**
 - Assume the minimum total equity ratio is 60%.
 - Maximum reduction is 5.3% of total equity
 - $+0.053 * \$6,595,267 = \$346,448.$
- ▶ **Determining your annual cash carryover and retained earnings.**
 - cash carryover equals \$893,660
- ▶ **Maximum total absorbable losses**
 - Maximum reduction in total equity plus cash carryover
 - $\$346,448 + \$893,660 = \$1,240,108$

LGM: Steps for evaluation

- ▶ 1: Complete a balance sheet for your dairy operation. If you need assistance you can contact the author or Dianne Shoemaker, The Ohio State University Extension to discuss a FINPACK Analysis for your dairy operation.
- ▶ 2: Using your balance sheet, calculate your total equity and total equity ratio. Discuss with your banker or agricultural lender what a target equity ratio should be for your dairy operation.
- ▶ 3: Determine the minimum total equity ratio as your target.
- ▶ 4: Calculate the maximum absorbable reduction in equity which meets your target equity ratio.
- ▶ 5: Complete a cash carry over calculation.
- ▶ 6: Determine the total absorbable reduction in equity by adding 4 and 5.
- ▶ 7: Review the calculations for LGM–Dairy insurance to determine if you can indemnify your dairy operation against reductions in gross margin greater than the amount determined at item 6.

LGM–Dairy

Livestock Gross Margin Insurance

The Basics

**If you would like to sponsor a workshop on
LGM Dairy for your clientele contact**

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State Specialist Dairy Markets and Policy
AEDE / OSUE
The Ohio State University**

