



LGM-Dairy: A Wisconsin Example

LGM-Dairy: A New Risk Management Tool

February 11, 2009

Overview of Workshop Section III

- Review numerical example for hypothetical dairy farm
 - Farm characteristics
 - LGM-Dairy contract characteristics
- Overview of *Behind the Scenes* calculations undertaken when you enroll
 - Expected milk and feed prices
 - How your premiums are determined
- Review premium calculation software and analysis
 - RMA Website
 - UW LGM-Dairy premium calculator



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Livestock Gross Margin Insurance for Dairy Cattle

This section of our website provides information concerning the *Livestock Gross Margin for Dairy (LGM-Dairy)* program made available by the [Risk Management Agency](#) of USDA. The site will be under construction over the next few months as new information becomes available and related new materials are added. Please come back often to see what's new.

As with other sections of this website by clicking on an active link, you may generate an expanded menu. To make this menu disappear, click on the link again. If you have material that you think you would find useful please contact [Prof. Brian W. Gould](#) with your suggestions.

The material contained within this site is for informational and research purposes only. The official website concerning material related to the *Livestock for Gross Margin for Dairy* program is the USDA Risk Management Agency website (<http://www.rma.usda.gov>).

- **[Background Material Made Available by the RMA](#)**

This is a collection of information provided by USDA as to introduce the LGM-Dairy program

- **[Supporting Software](#)**

This is a collection of spreadsheet and other software used to exemplify the use of LGM-Dairy

- **[Underlying Data](#)**

This is a collection of data used in the implementation of LGM-Dairy

- **[Additional Material Explaining LGM-Dairy](#)**

Background Material Related to LGM-Dairy

http://future.aae.wisc.edu/lgm_dairy.html

LGM-Dairy: Wisconsin Example

■ Farm characteristics

- 250 milk cows
- Average per cow productivity: 19,769 lbs
 - ✓ 2007 WI 200-499+ herd size category average

	Herds	% of Herds	% of Prod.	Avg. Yield
1-29	1,900	13.2	1.5	11,586
30-49	3,600	25.0	10.0	16,092
50-99	6,100	42.4	29.0	17,778
100-199	1,800	12.5	18.5	19,310
→ 200-499	750	5.2	19.0	19,769
500+	250	1.7	22.0	24,750
Total	14,400	100.0	100.0	19,305

LGM-Dairy: Wisconsin Example

- Insurance contract purchased on January 29th

January 2009						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-New Year's Day	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19-Martin Luther King Jr. Day	20	21	22	23	24
25	26	27	28	29	30	31

3rd to last business day

Insurance Purchase Day

Last Business Day

LGM-Dairy: Wisconsin Example

- Possible 10-Month insurance period: Mar `09 – Dec `09
 - Cow productivity changes by month
 - ✓ Based on Wisconsin monthly yield profile
 - Amount of feed expected to be used
 - ✓ 966 tons Corn equivalent
 - ✓ 213 tons SBM Equivalent
- Insure 100% of production (extreme example)

LGM-Dairy: Wisconsin Example

Month	Prod./Cow (lbs)	Production (cwt)	Corn Equiv. (Tons)	SBM Equiv. (Tons)
Mar `09	1,685	4,213	98.1	21.7
Apr `09	1,645	4,113	95.8	21.1
May `09	1,736	4,340	101.1	22.3
Jun `09	1,675	4,188	97.6	21.5
Jul `09	1,696	4,240	98.8	21.8
Aug `09	1,675	4,188	97.6	21.5
Sep `09	1,609	4,023	93.7	20.7
Oct `09	1,630	4,075	94.9	20.9
Nov `09	1,615	4,038	94.1	20.8
Dec `09	1,625	4,063	94.7	20.9
Total	16,591	41,481	966.3	213.2

Calculation of Expected Prices

- With January 28th insurance purchase date
 - *Expected Price Measurement Period (EPM)*:
January 26th, 27th and 28th ← Purchase Insurance
 - To determine the Gross Margin Guarantee at contract sign-up we need:
 - ✓ Expected monthly milk and feed prices
 - ✓ Producer elected deductible

Calculation of Expected Prices

- Monthly expected prices for Jan`09 - Oct`09
 - Expected *Wisconsin All Milk* price
 - = Expected Class III prices + Wisconsin [All-Milk – Class III] Basis
 - Expected *Wisconsin Corn Grain* price
 - = Expected Corn prices + Wisconsin [Corn Price Received – Corn Futures] Basis
 - Expected *U.S. Soybean Meal* prices (no local basis)

Calculation of Expected Prices

January 2009						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-New Year's Day	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19-Martin Luther King Jr. Day	20			23	24
25	26	27	28	29	30	31

Average Settle Prices Over These Days to Determine Expected Prices

3rd to last business day

Purchase Day

Last Business Day

Calculation of Expected All-Milk Prices

- The RMA calculates expected Class III prices for each insured month
 - ✓ Based on 3-day Class III futures contract settle prices for each month included in the insurance contract
- Milk revenue based on expected Wisconsin All Milk price for each month
 - Use Wisconsin (All Milk – Class III) basis
 - ✓ Varies across month and state
 - Use Expected Class III price

Calculation of Expected All-Milk Price

Month	Class III Futures Settle Price (\$/cwt)				WI Milk Basis (\$/cwt) [5]	Expected WI All Milk Price (\$/cwt) [6]
	Jan 26 [1]	Jan 27 [2]	Jan 28 [3]	Avg. [4]		
Mar `09	10.01	9.95	10.23	10.06	1.94	12.00
Apr `09	10.65	10.66	10.99	10.77	1.40	12.17
May `09	11.11	11.15	11.40	11.22	1.23	12.45
Jun `09	12.06	12.02	12.25	12.11	1.11	13.22
Jul `09	13.10	13.05	13.19	13.11	1.11	14.22
Aug `09	14.00	14.00	14.07	14.02	1.16	15.18
Sep `09	14.50	14.43	14.48	14.47	1.37	15.84
Oct `09	14.53	14.47	14.50	14.50	1.77	16.27
Nov `09	14.68	14.64	14.68	14.67	1.91	16.58
Dec `09	14.80	14.71	14.75	14.75	1.77	16.52

Note: [4] = ([1] + [2] + [3])/3 [6] = [4] + [5] [4] are rounded values

Calculation of Expected Gross Revenue

- With the estimation of 10 expected Wisconsin All-Milk price values one can
 - Calculate Expected Gross Revenue (*EGR*) at sign-up
 - ✓ *EGR* is the product of expected All-Milk price times covered milk production
 - ✓ Covered production could be less than allowable target as elected by the producer
 - ✓ Different price and covered production each month

Calculation of Expected Gross Revenue

Month	Expected WI All Milk Price (\$/cwt) [1]	Covered Marketings (cwt) [2]	Expected Gross Revenue (\$) [3]
Mar `09	12.00	4,213	50,556
Apr `09	12.17	4,113	50,055
May `09	12.45	4,340	54,033
Jun `09	13.22	4,188	55,365
Jul `09	14.22	4,240	60,293
Aug `09	15.18	4,188	63,574
Sep `09	15.84	4,023	63,724
Oct `09	16.27	4,075	66,300
Nov `09	16.58	4,038	66,950
Dec `09	16.52	4,063	67,121
	Total	41,481	597,972

Note: [1] and [2] obtained from previous table [3] = [1] * [2]

Calculation of Expected Feed Prices

- Like Class III, the EPM's futures settle prices used in calculation of expected corn and SBM prices
 - Jan. 26st, 27th and 28th
 - Need to calculate expected prices for each month covered by the contract
 - Unlike Class III contracts, corn/soybean meal futures contracts may not exist for every month of insurance contract

Calculation of Expected Corn Price

Month	Corn Futures Settle Prices (\$/bu)				Imputed Price (\$/bu) [5]	Basis (\$/bu) [6]	Expected WI Corn Price (\$/bu) [7]
	Jan 26 [1]	Jan 27 [2]	Jan 28 [3]	Avg. [4]			
Mar `09	3.9375	3.7750	3.8450	3.85	3.85	-0.17	3.68
Apr `09	-----	-----	-----	-----	3.91	-0.11	3.80
May `09	4.0475	3.8850	3.9950	3.96	3.96	-0.12	3.84
Jun `09	-----	-----	-----	-----	4.02	-0.12	3.90
Jul `09	4.1525	3.9925	4.0625	4.07	4.07	-0.12	3.95
Aug `09	-----	-----	-----	-----	4.12	-0.15	3.97
Sep `09	4.2575	4.0950	4.1650	4.17	4.17	-0.11	4.06
Oct `09	-----	-----	-----	-----	4.22	-0.15	4.07
Nov `09	-----	-----	-----	-----	4.26	-0.18	4.08
Dec `09	4.3900	4.2300	4.3000	4.31	4.31	-0.22	4.09

Note: [4] = ([1]+[2]+[3])/3, [5] = weighted average with weights based on months from contract expiration, [7] = [5]+[6]

Calculation of Expected Corn Costs

- With calculation of expected corn prices for each month
 - Multiply each months covered corn equivalents times the expected price to obtain expected corn costs
 - ✓ Covered corn equivalents is equal to total corn equivalents multiplied by % of production covered

Calculation of Expected Corn Cost

Month	Expected WI Corn Price (\$/bu) [1]	Covered Corn Equiv. (tons) [2]	Expected Corn Cost (\$) [3]
Mar `09	3.68	98.1	12,893
Apr `09	3.80	95.8	13,001
May `09	3.84	101.1	13,865
Jun `09	3.90	97.6	13,594
Jul `09	3.95	98.8	13,938
Aug `09	3.97	97.6	13,838
Sep `09	4.06	93.7	13,587
Oct `09	4.07	94.9	13,794
Nov `09	4.08	94.1	13,712
Dec `09	4.09	94.7	13,833
Total		966.4	136,056

Note: [1] and [2] obtained from previous tables, [3] = [1]*(2000/56)* [2]

Calculation of Expected SBM Costs

- A similar procedure is used to estimate SBM costs
 - Use the same EPM period to obtain SBM futures settle prices
 - No basis added to obtain a local price as no state-level price data

Calculation of Expected SBM Price

Month	Soybean Meal Futures Settle Prices (\$/Ton)				Imputed SBM Price (\$/ton)
	Jan 26 [1]	Jan 27 [2]	Jan 28 [3]	Avg. [4]	
Mar `09	316.3	308.60	311.50	312.13	312.13
Apr `09	-----	-----	-----	-----	311.85
May `09	315.8	308.40	310.50	311.57	311.57
Jun `09	-----	-----	-----	-----	311.94
Jul `09	316.7	309.20	311.00	312.30	312.30
Aug `09	313.00	306.90	308.40	309.43	309.43
Sep `09	302.00	299.40	299.90	300.43	300.43
Oct `09	284.50	286.8	285.80	285.70	285.70
Nov `09	-----	-----	-----	-----	284.70
Dec `09	281.70	285.60	283.80	283.70	283.70

Note: [4] = ([1] + [2] + [3])/3 [5] = average of preceding and following value of [4] if no futures contract, [4] otherwise

Calculation of Expected SBM Cost

Month	Imputed Price (\$/Ton) [1]	SBM Equiv (Ton) [2]	Total Cost (\$) [3]
Mar `09	312.13	21.7	6,773
Apr `09	311.85	21.1	6,580
May `09	311.57	22.3	6,948
Jun `09	311.94	21.5	6,707
Jul `09	312.30	21.8	6,808
Aug `09	309.43	21.5	6,653
Sep `09	300.43	20.7	6,219
Oct `09	285.70	20.9	5,971
Nov `09	284.70	20.8	5,922
Dec `09	283.70	20.9	5,929
	Total	213.2	64,510

Note: [1] and [2] obtained from previous tables, [3] = [1]* [2]

Calculation of Gross Margin Guarantee

- Summary of information required for enrollment:
 - Estimation of expected milk prices and feed costs
 - Statement of insured marketings
 - ✓ Monthly target marketings (TM_i)
 - ✓ Desired coverage % ($Cover_i$)
 - Statement of expected feed use
 - Deductible (\$ GMG/cwt):

- Given above, one can calculate *Gross Margin Guarantee*
(GMG) = Expected **total** gross margin –
deductible*covered milk marketings

Calculation of Gross Margin Guarantee (GMG)

Month	Corn Costs (\$) [1]	SBM Costs (\$) [2]	Feed Costs (\$) [3]	Revenue (\$) [4]	Deductible (\$) [5]	GMG (\$) [6]
Mar `09	12,893	6,773	19,666	50,556	4,213	26,677
Apr `09	13,001	6,580	19,581	50,055	4,113	26,361
May `09	13,865	6,948	20,813	54,033	4,340	28,880
Jun `09	13,594	6,707	20,301	55,365	4,188	30,876
Jul `09	13,938	6,808	20,746	60,293	4,240	35,307
Aug `09	13,838	6,653	20,491	63,574	4,188	38,895
Sep `09	13,587	6,219	19,805	63,724	4,023	39,896
Oct `09	13,794	5,971	19,766	66,300	4,075	42,460
Nov `09	13,712	5,922	19,633	66,950	4,038	43,279
Dec `09	13,833	5,929	19,762	67,121	4,063	43,295
Total	136,056	64,510	200,566	597,972	41,481	355,925

Note: [3] = [1] + [2], [6] = [4] - [3] - [5], **\$1.00 GMG/cwt deductible assumed**

Calculation of Insurance Premiums

- As noted in our introduction, there is *No Producer Premium Subsidy*
 - RMA simulates 5,000 Class III, corn grain and SBM prices using data obtained from *EPM* period
 - ✓ Generates 5,000 simulated total gross margins
 - ✓ For each simulation, determine payout where
$$\text{Insurance Payout} = \text{Max}(0, \text{Total GMG} - \text{Simulated Total GMG})$$
 - Premiums = Average of 5,000 Simulated Payouts + 3%
- RMA does this for you but lets review how it is done

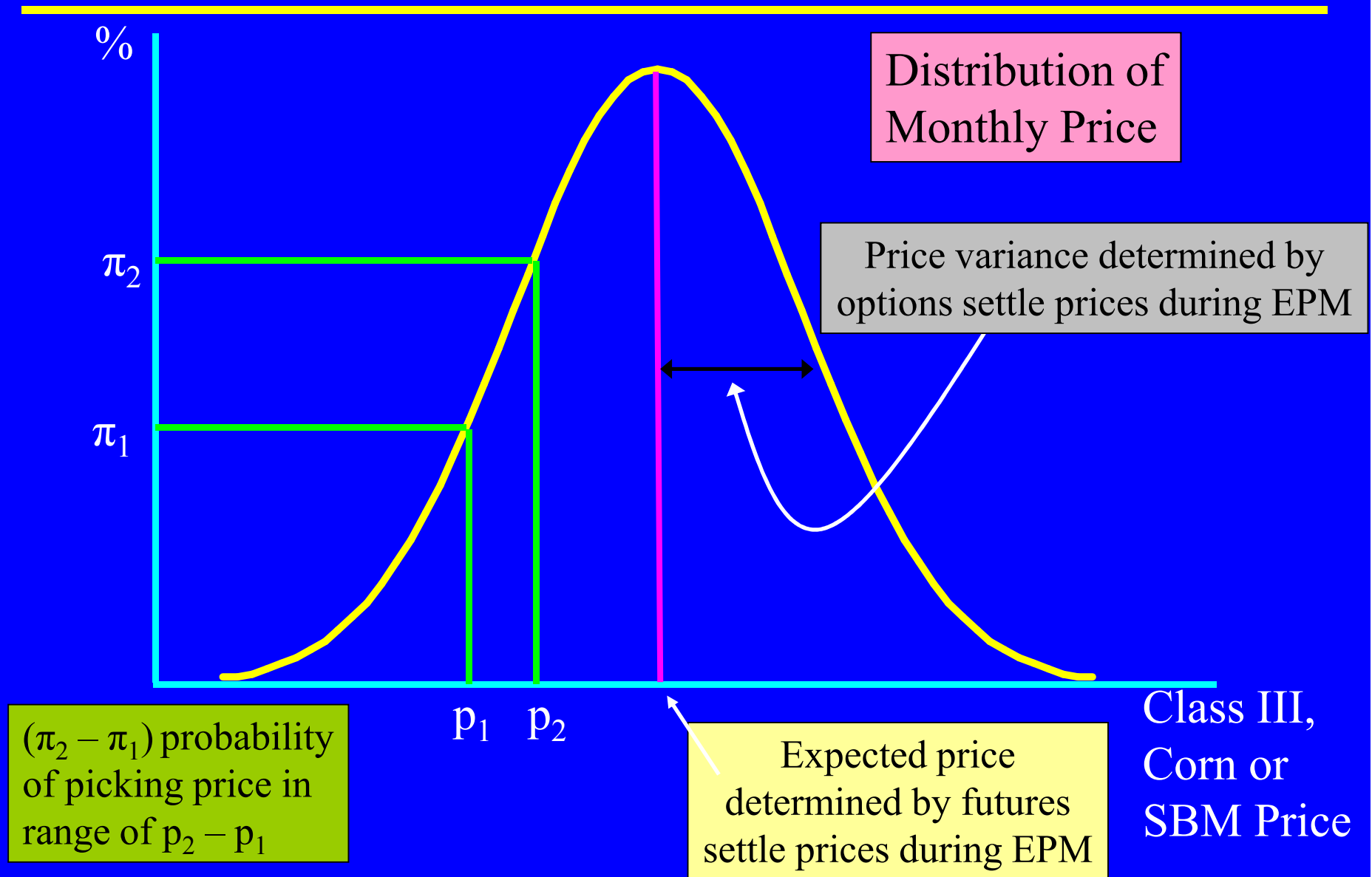
Calculation of Insurance Premiums

- To determine your premium the RMA generates 5,000 simulated prices and therefore payouts
 - The *Understanding Dairy Markets* website maintains a database of simulated prices

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Jan	Jan	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>	<u>Jan</u>
<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	<u>Feb</u>	Feb
<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	<u>Mar</u>	Mar
<u>Apr</u>	<u>Apr</u>	<u>Apr</u>	Apr	<u>Apr</u>	<u>Apr</u>	<u>Apr</u>	<u>Apr</u>	<u>Apr</u>	Apr
May	<u>May</u>	<u>May</u>	<u>May</u>	<u>May</u>	<u>May</u>	<u>May</u>	<u>May</u>	<u>May</u>	May
<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	<u>Jun</u>	Jun
<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	<u>Jul</u>	Jul
<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	<u>Aug</u>	Aug
<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	<u>Sep</u>	Sep
<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	<u>Oct</u>	Oct
<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	<u>Nov</u>	Nov
<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	<u>Dec</u>	Dec
All	All	All	All	All	All	All	All	All	All

Remember the program has existed Since Aug. 2008

How Are the Random Prices Determined



Calculation of Insurance Premiums

- For each price scenario the simulated prices are generated following historical correlations between Class III, Corn and SBM
 - For example, when simulating a high corn price a high SBM price is likely to be obtained

Calculation of Insurance Premiums

- USDA (RMA) Premium Calculator Website:
<http://www3.rma.usda.gov/apps/premcalc/>

- *Understanding Dairy Markets* Premium Calculator:
http://future.aae.wisc.edu/lgm_dairy.html#2
 - Automatically evaluate program performance with \$0 - \$1.50/cwt deductibles
 - ✓ Total and per cwt premiums
 - ✓ Premium as % of GMG
 - ✓ Probability of simulated payouts
 - We will review this software later

Calculation of Insurance Premiums

- Use above software to analyze premiums and premium sensitivity to alternative policy configurations
 - RMA website provides official premiums at sign-up

- Under the January 2009 example we can show that
 - *Premiums* decrease at a faster rate than *GMG* as deductibles increase
 - Premium vs. Gross Revenue reduction depends on
 - ✓ Price volatility at sign-up
 - ✓ Expected gross margins at sign-up
 - Payout probability decreases with higher deductibles

Insurance Premiums and Deductible Level

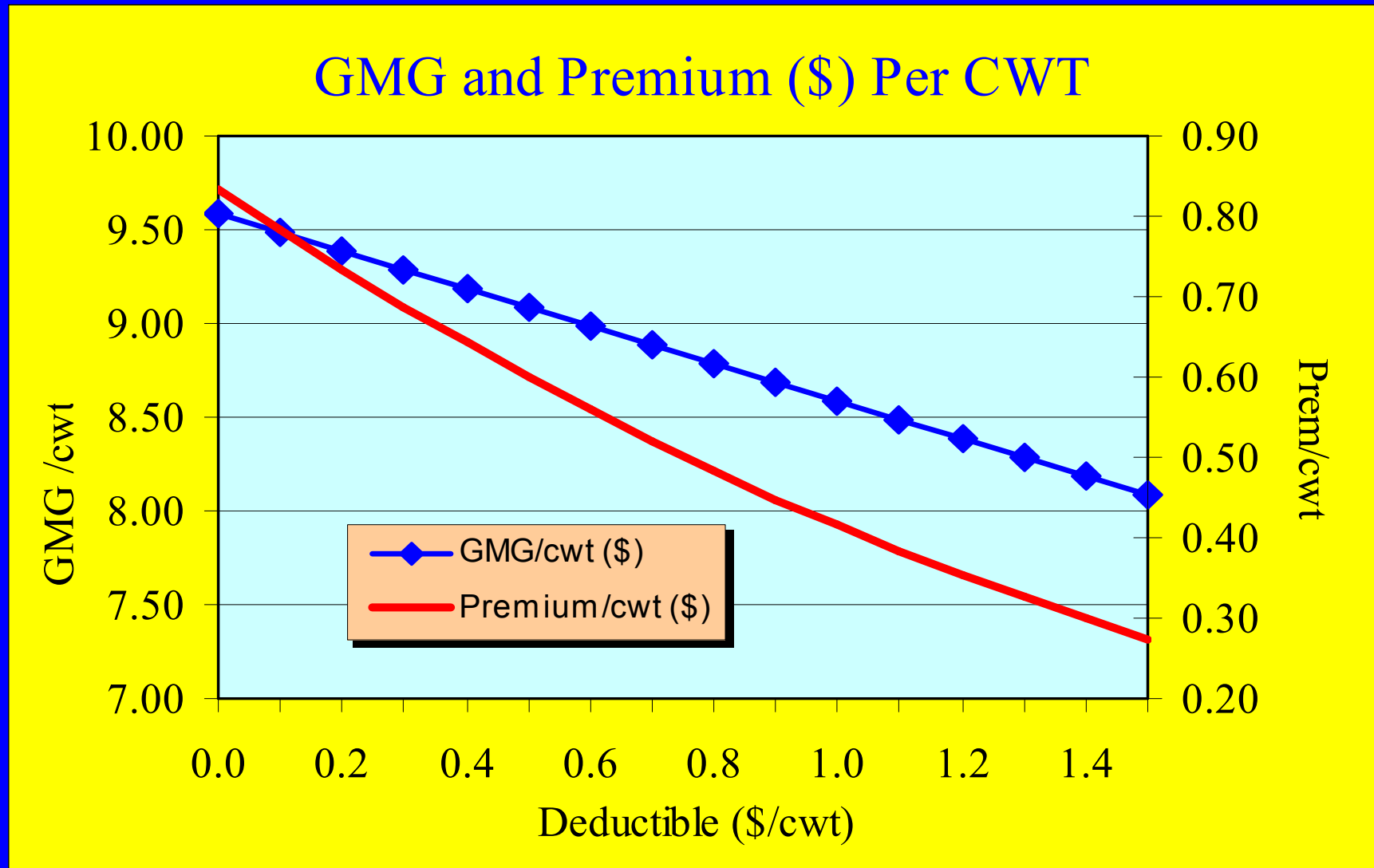
(Jan. '09 Example)

Deductible		GMG		Premium		
Rate (\$/cwt) [1]	Total (\$) [2]	Total (\$) [3]	% ↓ [4]	Total (\$) [5]	Per CWT (\$) [6]	% ↓ [7]
0	0	397,406	-----	34,629	0.835	-----
0.10	4,148	393,258	-1.0	32,490	0.783	-6.2
0.30	12,444	384,962	-3.1	28,497	0.687	-17.7
0.50	20,741	376,665	-5.2	24,876	0.600	-28.2
0.70	29,037	368,369	-7.3	21,571	0.520	-37.7
0.90	37,333	360,073	-9.4	18,588	0.448	-46.3
1.10	41,481	351,777	-11.5	15,926	0.384	-54.0
1.30	53,925	343,481	-13.6	13,533	0.326	-60.9
1.50	62,222	335,184	-15.7	11,394	0.275	-67.1

Note: % ↓ measured from \$0 Deductible level

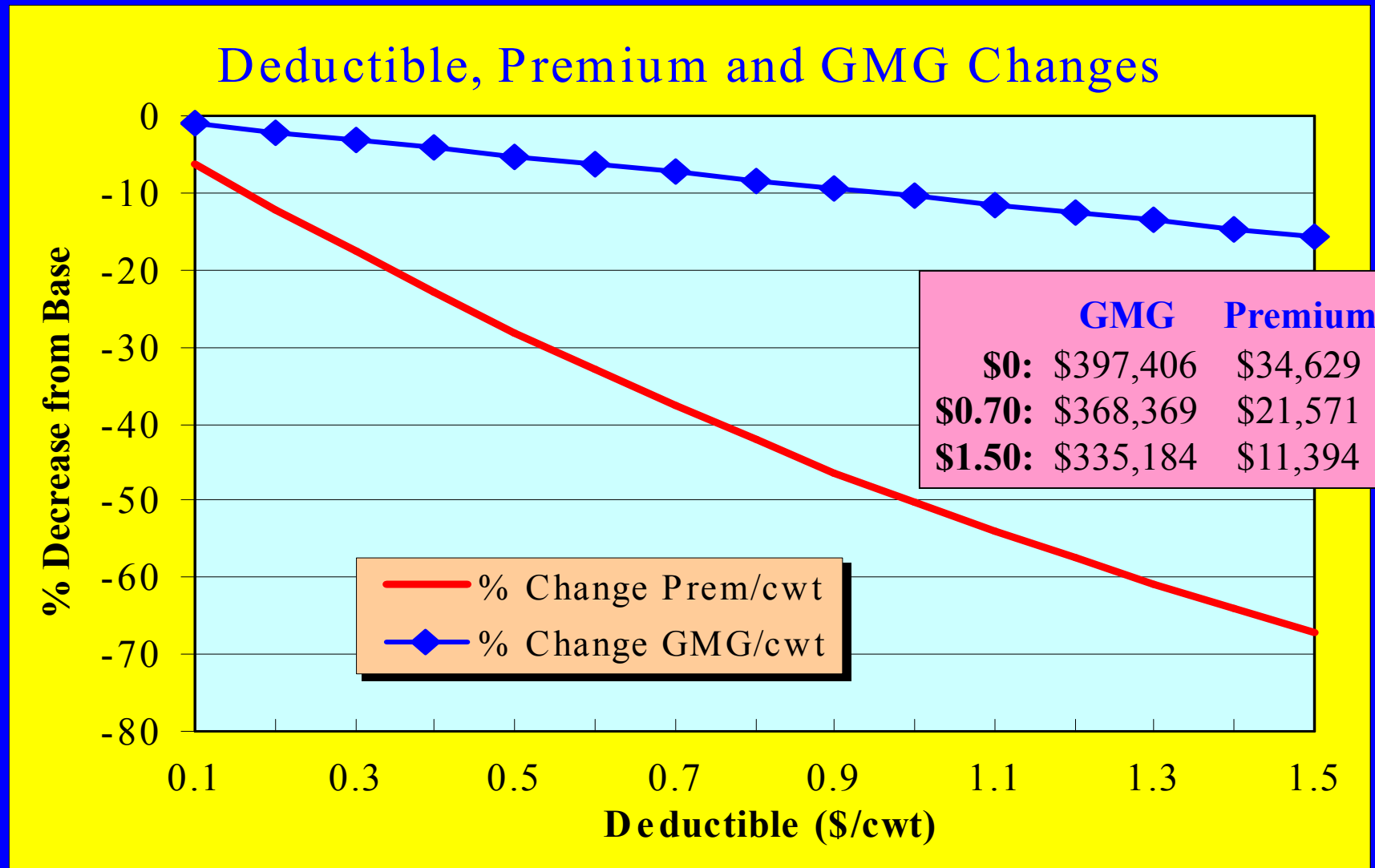
Relative GMG and Insurance Premiums

(Jan. '09 Example)



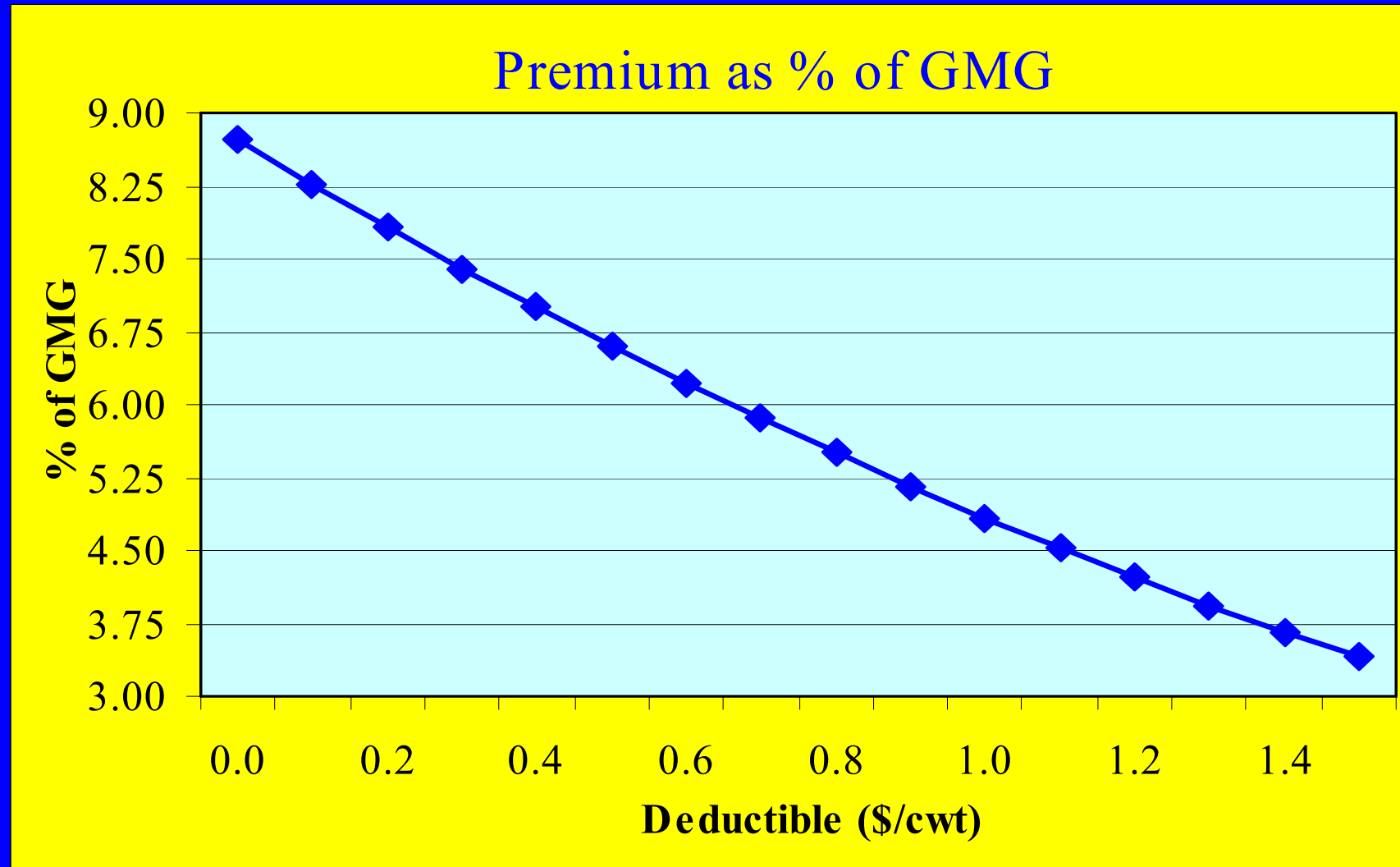
Effect of Deductible on Premium and GMG

(Jan. '09 Example)



Relative Premium Value and Deductible

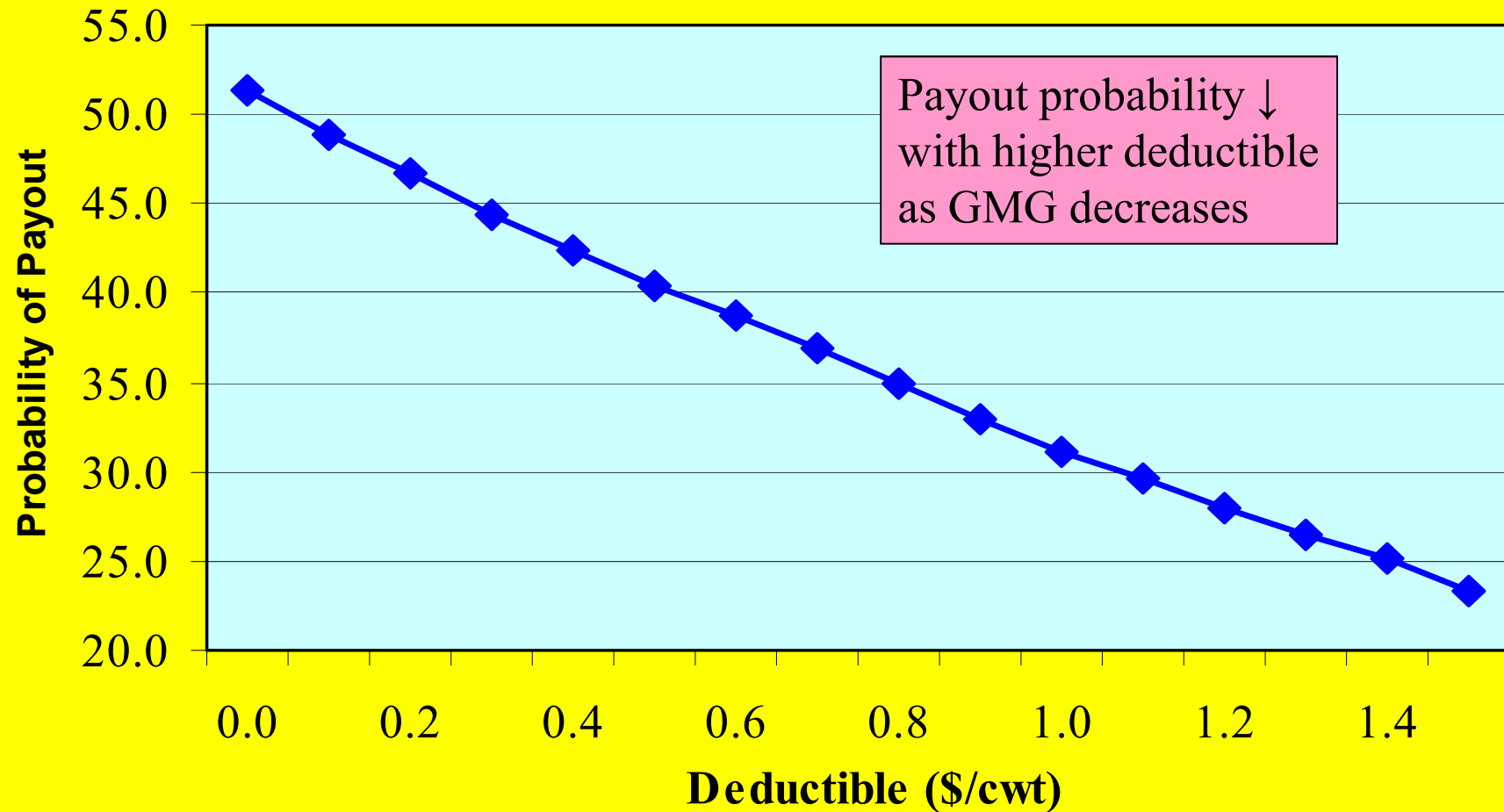
(Jan. '09 Example)



Simulated Probability of Positive Indemnities

(Jan. '09 Example)

Effect of Deductible on Payout Probability



Feeding Costs Impact Premium

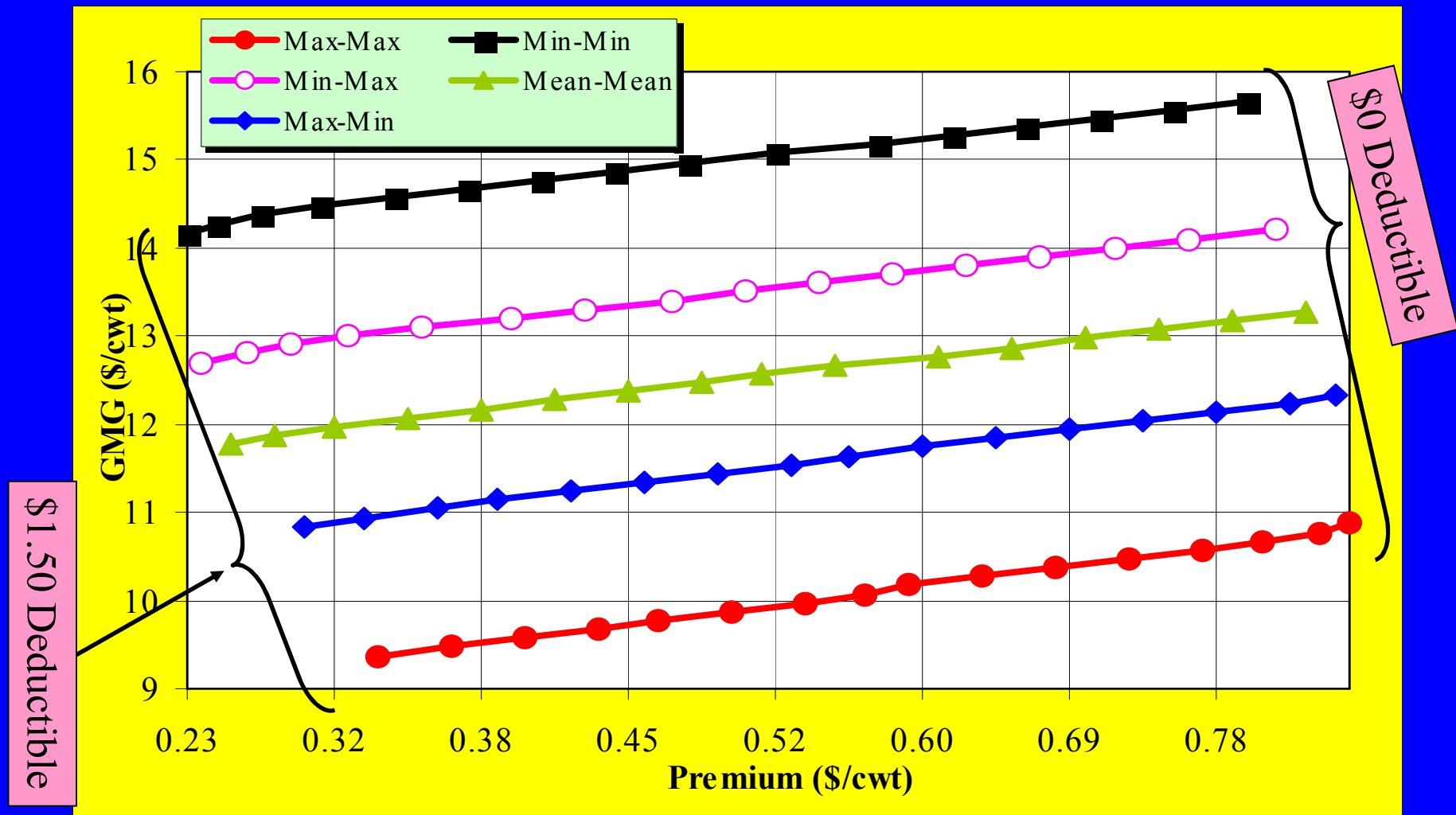
- As noted earlier, there are policy established very broad ranges of allowable corn and SBM feeding rates
 - Like to examine LGM-Dairy performance under different feeding patterns

Feed Scenario	Corn Equiv. (tons/cwt)	SBM Equiv. (tons/cwt)
Minimum allowed by LGM-Dairy (Min)	0.00364	0.000805
Average of minimum and maximum allowed (MEAN)	0.01638	0.003615
Maximum allowed by LGM-Dairy (Max)	0.02912	0.006425

Feeding Costs Impact Premium

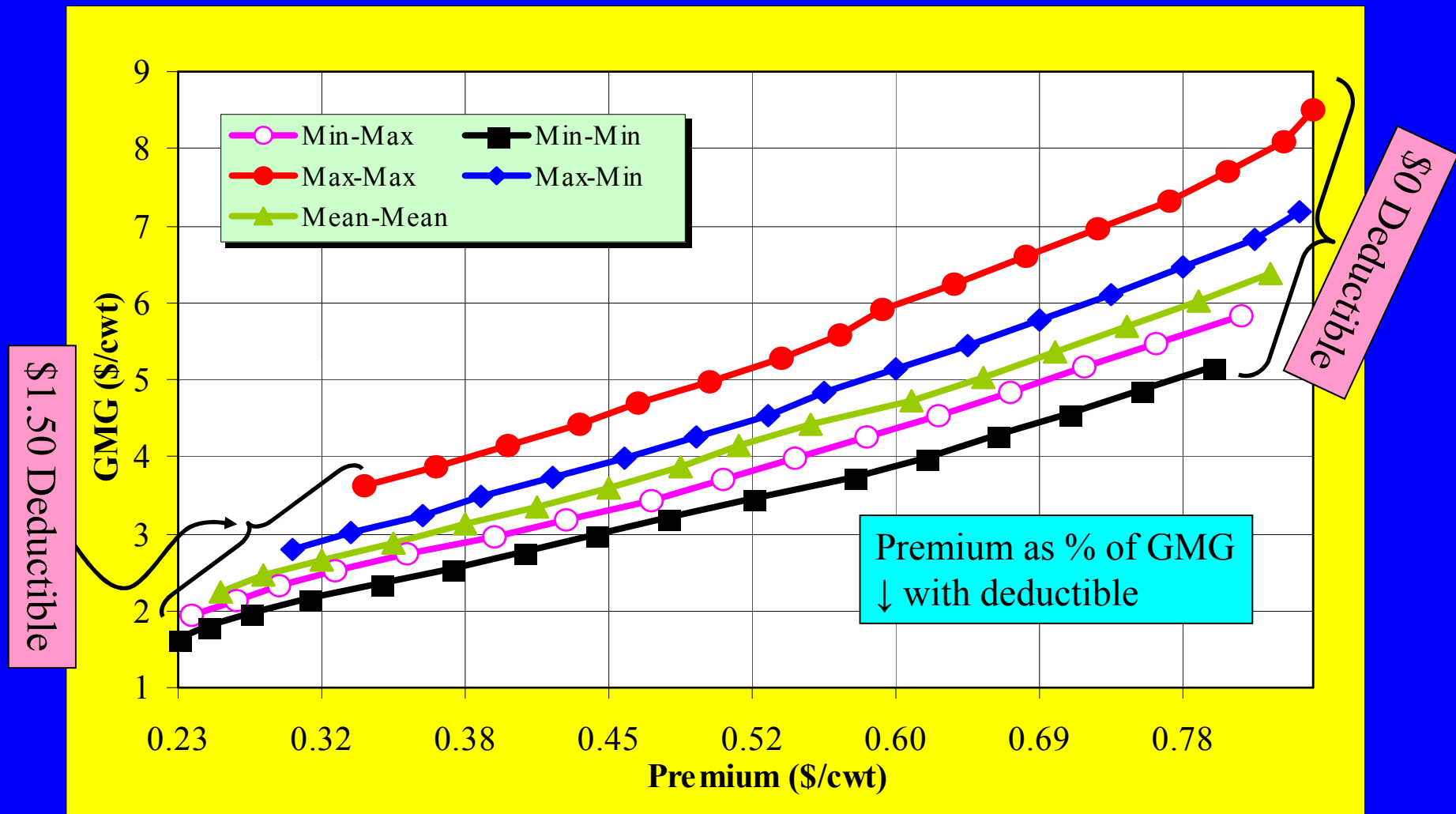
- With higher feeding rates
 - Lower GMG for each deductible level as feeding rates increase
 - Premium as a percent of GMG follows a similar pattern across feeding profile
 - ✓ With increased deductible relative cost of program decreases
 - The following graphs show these relationships

Interaction of Feed Rates, Deductible and GMG (Nov. '08 Example)



Note: Max-Min represents results for maximum feeding of corn equivalents and minimum amount of SBM equivalents, etc.

Interaction of Feed Rates, Deductible and GMG (Nov. '08 Example)



Note: Max-Min represents results for maximum feeding of corn equivalents and minimum amount of SBM equivalents, etc.

Determining Actual Indemnities

- Actual Prices Known → Calculate *Actual Gross Margin* (AGM) = Actual Revenue – Actual Feed Costs
 - Actual Prices determined each month over contract life as futures contracts expire
 - Similar to expected prices, actual prices are statewide averages *not* your farm price
- LGM-Dairy Actual Indemnity:
 - Actual Indemnity = Max[0, *Total* GMG – *Total* AGM]
 - ✓ *Total* Refers to Sum Over All Contract Months

Determining Actual Class III and Feed Prices

- Actual Class III and feed prices
 - Determined each month over insurance contract life
 - Uses settle prices on futures contracts 1,2, and 3 days *prior to last trading day* of a particular futures contract
 - ✓ Averaged over these three days

Actual March 2009 Class III Price

March 2009						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8-Daylight Saving Time Begins	9	10	11	12	13	14
15	16	17-St. Patrick's Day	18	19	20	21
22	23	24	<div style="border: 1px solid black; background-color: #FFC0CB; padding: 5px; display: inline-block;"> Actual Price Measurement Period </div>		27	28
29	30	31	1	Last Class III Futures Trading Day	Class III Announced	

Actual March 2009 Corn Price

- March 2009 actual Corn prices
 - By rule, corn futures stop trading on the last business day prior to the 15th of the futures month
 - ✓ Mar 13th last trading day for Mar. 2009 contract
 - Actual price measurement period: Mar 10th – 12th

Actual March 2009 SBM Price

- March 2009 actual SBM prices
 - By rule, corn futures stop trading on the last business day prior to the 15th of the futures month
 - ✓ Mar 13th last trading day for Mar. 2009 contract
 - Actual price measurement period: Mar 10th – 12th

Determining Actual Class III and Feed Prices

Month	Class III		Corn		Soybean Meal	
	Last Trading Day	Actual Price Measurement Period	Last Trading Day	Actual Price Measurement Period	Last Trading Day	Actual Price Measurement Period
Mar `09	Apr 2	Mar 30–Apr 1	Mar 13	Mar 10–12	Mar 13	Mar 10–12
Apr `09	Apr 30	Apr 27 – 29	-----	Mar 10–12, May 11–13	-----	Mar 10–12, May 11–13
May `09	Jun 4	Jun 1–3	May 14	May 11–13	May 14	May 11–13
Jun `09	Jul 2	Jun 29–30, Jul 1	-----	May 11–13, Jul 9–10, 13	-----	May 11–13 Jul 9–10, 13
Jul `09	Jul 30	Jul 27 – 29	Jul 14	Jul 9–10, 13	Jul 14	Jul 9–10, 13
Aug `09	Sep 3	Aug 31, Sep 1–2	-----	Jul 9–10, 13, Sep 9–11	Aug 14	Aug 11–13
Sep `09	Oct 1	Sep 28–30	Sep 14	Sep 9–11	Sep 14	Sep 9–11
Oct `09	Oct 29	Oct 26-28	-----	Sep 9–11, Dec 9-11	Oct 14	Oct 9, 12-13
Nov `09	Dec. 3	Nov 30, Dec 1-2	-----	Sep 9–11, Dec 9-11	-----	Oct 9, 12-13, Dec 9-11
Dec `09	Dec. 30	Dec 24, 28-29	Dec 14	Dec 9 - 11	Dec 14	Dec 9-11

Use of the RMA Premium Calculator

- As noted above, USDA's RMA maintains the official LGM-Dairy website for calculating your premiums
 - Website URL:
<http://www3.rma.usda.gov/apps/premcalc/>
 - Data updated at the close of business on last day of the *EPM* period
 - Lets review how you can use their LGM-Dairy website and premium calculator

Use of the RMA Premium Calculator

- How do you access the RMA website?

<http://www.rma.usda.gov/>

The screenshot shows the USDA Risk Management Agency website. At the top left is the USDA logo and the text "United States Department of Agriculture Risk Management Agency". A navigation bar contains links for Home, About RMA, Field Offices, News, Opportunities, Publications, Help, and Contact Us. Below the navigation bar is a banner image showing various agricultural products like bananas, raspberries, and peaches. The main content area is titled "You are here: Home" and features a "Search RMA" box with a "Go" button. To the left is a "Browse by Subject" menu with categories such as Actuarial Documents, Bulletins and Handbooks, Crop Policies, Data, Federal Crop Insurance Corporation - FCIC, Laws and Regulations, Livestock (circled in red), Pilot Programs, Reinsurance Agreements, State Profiles, and Tools and Calculators. The main content area displays several news articles, including "Risk Management Agency (RMA) Serving America's agricultural producers", "In the News" with a "More" link, "FCIC Board Approves Additional States for Biotechnology Pilot", "Remarks by Associate Administrator Jim Callan", "Processing Pumpkins Insurance Program Available in Eleven Illinois Counties", and "New Farm and Ranch Online Planning Tool: Farm-Risk-Plans.USDA.Gov". To the right is a "Quick Links" section with links for "What's new", "Agent/company locator", "County crop programs", "Indemnities map", "Insurable crops", "Prairie pothole maps/info", "Premium calculator", "Price discovery reporting", "Rainfall/vegetation indices", and "Summary of business". At the bottom right is a circular graphic with colored segments.

Use of the RMA Premium Calculator

- How do you access the RMA LGM-Dairy website?

Livestock <http://www.rma.usda.gov/livestock/>



Buying a livestock insurance policy is one risk management option. Producers should always carefully consider how a policy will work in conjunction with their other risk management strategies to insure the best possible outcome.

[Archive](#)

2009 Livestock Gross Margin (LGM). PDF files.
Provides protection against loss of gross margin (market value of livestock minus feed costs).

LGM Cattle

- [2009 Policy](#)
- [2008 Underwriting Rules](#)
- [2008 Handbook](#)
- [Premium Calculation Instructions](#)
- [2009 LGM Commodity Exchange Endorsement](#)
- [Frequently Asked Questions: PDF | HTML](#)

LGM Dairy

- [2009 Policy](#)
- [2009 Underwriting Rules](#)
- [2009 Handbook](#)
- [Premium Calculation Instructions](#)
- [2009 LGM Commodity Exchange Endorsement](#)
- [Frequently Asked Questions: PDF | HTML](#)

LGM Swine

- [2009 Policy](#)
- [2008 Underwriting Rules](#)
- [2008 Handbook](#)
- [Premium Calculation Instructions](#)

LGM-Dairy Information

Use of the RMA Premium Calculator

- How do you access the RMA Premium Calculator?

<http://www.rma.usda.gov/tools/>



Use of the RMA Premium Calculator

- How do you access the RMA Premium Calculator?

<http://www.rma.usda.gov/tools/premcalc.html>

▶ Tools and Calculators

Dates Inquiry System

Provides the ability to retrieve type code, practice code, billing date, sales closing date, final planting date, acreage reporting date, end of insurance date, cancellation date, termination date by State and County or by State, county, and crop or by State, county, crop, and insurance plan ID. Results can be printed in tabular format.

.....
FTP file access to the RMA Web site | **HTTP** interface
.....

Good Farming Practices Documentation

Enables producers to record actions taken to prevent and treat outbreak of soybean rust.

Livestock Reports (LRP and LGM)

Provides LRP's coverage prices/rates and LGM's expected and actual gross margins. Actual LRP ending values are also provided at the end of each insurance period.

.....
Nursery Inventory Software and Eligible Plant List and Plant Price Schedule Books (EPLPPS) for 1999 and succeeding years.
.....

Premium Calculator

Calculate insurance premiums online.

Use of the RMA Premium Calculator

- How do you access the RMA Premium Calculator?

Tools and Calculators

Premium Calculator

[Premium Calculation Online Tool](#) - This web application covers 2000 and succeeding years.

Premium Calculation Software for 1999 (downloadable version)
This is for crop year 1999 only; for 2000 and succeeding years, please use the version of Premium Calculator above.

- Instructions ADM Data (28 MB)
- Disk 1 Disk 2 Disk 3 Disk 4 Disk 5 Disk 6

<http://www3.rma.usda.gov/apps/premcalc/>

Use of the RMA Premium Calculator

- Create your own account to use the RMA calculator



RMA Premium Calculation -- Login
Enter your Login ID and Password, then click **Log In**.
[Click here to switch to a secure connection.](#)

Login ID:

Password:

****** New users click here ******

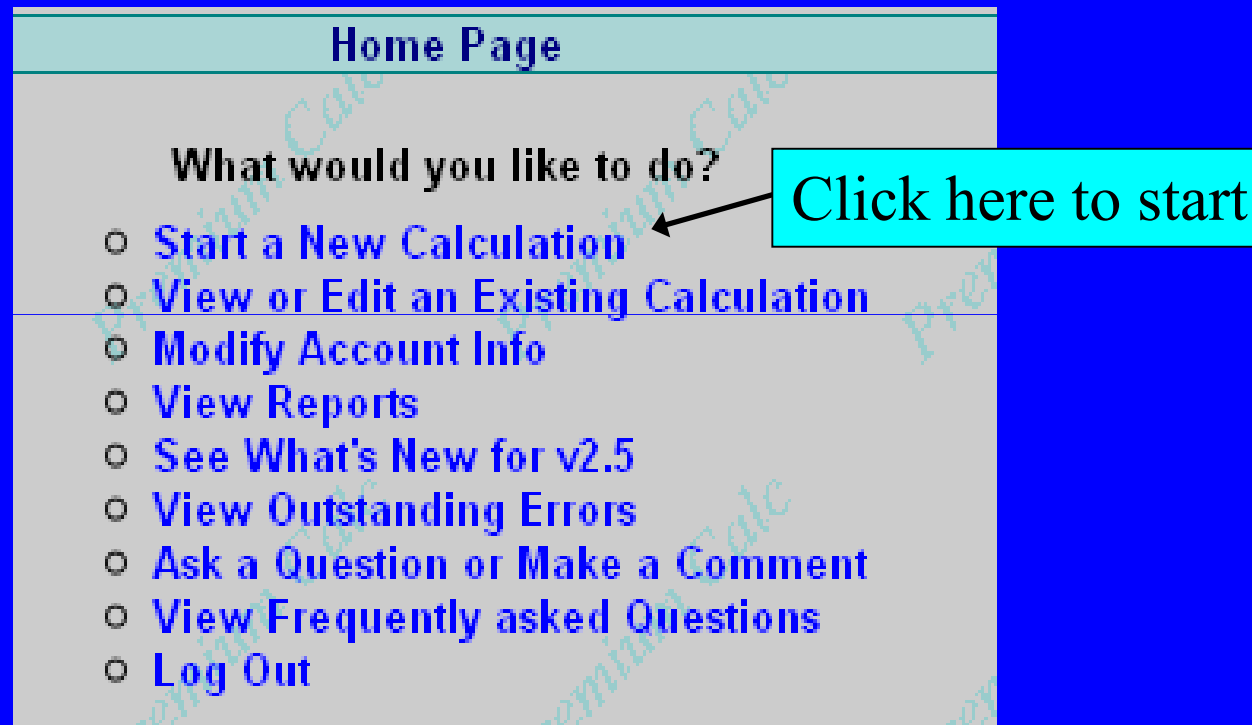
If you have forgotten your Login ID or Password, [click here to visit the Password Retrieval/Reset page.](#)

If you are having difficulties logging in, [click here to Contact Premium Calc Support.](#)

http://www3.rma.usda.gov/apps/premcalc/calc_login.cfm

Use of the RMA Premium Calculator

- Once logged in you can undertake your analysis



The screenshot shows a web page titled "Home Page" with a menu of options. A red callout box with the text "Click here to start" has an arrow pointing to the first menu item, "Start a New Calculation".

Home Page

What would you like to do?

- Start a New Calculation
- View or Edit an Existing Calculation
- Modify Account Info
- View Reports
- See What's New for v2.5
- View Outstanding Errors
- Ask a Question or Make a Comment
- View Frequently asked Questions
- Log Out

http://www3.rma.usda.gov/apps/premcalc/calc_menu.cfm

Use of the RMA Premium Calculator

- Once logged in you can undertake your analysis

Initial Data - Crop Year and State
Select a Crop Year and a State, then click **Next**.

Crop Year: 2009

State: 55 Wisconsin

Cancel Next >>

Sept. 2008 → 2009 Crop Year

Identify your state for correct basis

http://www3.rma.usda.gov/apps/premcalc/calc/calc_init_data.cfm

Initial Data - County
Select County then click **Next**.

Crop Year: 2009

State: 55 Wisconsin

County: 025 Dane

Cancel Next >>

Use of the RMA Premium Calculator

- Once logged in you can undertake your analysis by selecting the LGM product category

Initial Data - Insurance Plan	
Select Insurance Plan then click Next .	
Crop Year:	2009
State:	55 Wisconsin
County:	025 Dane
Insurance Plan:	82 Livestock Gross Margin

Select LGM subset of insurance plans

0803 CATTLE
0815 SWINE
0847 DAIRY CATTLE

Use of the RMA Premium Calculator

- You then enter the monthly production

Commodity:	0847 DAIRY CATTLE
Type:	997 NO TYPE SPECIFIED
Practice:	912 DEC. - OCT. INSURANCE PERIOD
Target Market 2:	15588
Target Market 3:	14682
Target Market 4:	15826
Target Market 5:	15445
Target Market 6:	16303
Target Market 7:	15731
Target Market 8:	15922
Target Market 9:	15731
Target Market 10:	15111
Target Market 11:	15254

Choose LGM-Dairy

Identify Months of Coverage (1st Month not Actually Covered)

Input Monthly Production (note no coverage in month 1)

Use of the RMA Premium Calculator

- You then enter the Corn and SBM equivalents and then select the \$/cwt deductible

Corn Equivalent 2:	445.300000
Corn Equivalent 3:	421.200000
Corn Equivalent 4:	446.900000
Corn Equivalent 5:	443.100000
Corn Equivalent 6:	455.200000
Corn Equivalent 7:	449.700000
Corn Equivalent 8:	452.100000
Corn Equivalent 9:	447.600000
Corn Equivalent 10:	437.000000
Corn Equivalent 11:	440.800000

Soybean Meal Equivalent 2:	91.700000
Soybean Meal Equivalent 3:	88.600000
Soybean Meal Equivalent 4:	91.900000
Soybean Meal Equivalent 5:	91.400000
Soybean Meal Equivalent 6:	93.100000
Soybean Meal Equivalent 7:	90.800000
Soybean Meal Equivalent 8:	92.500000
Soybean Meal Equivalent 9:	92.000000
Soybean Meal Equivalent 10:	90.600000
Soybean Meal Equivalent 11:	91.100000

Deductible: \$1.00 

Use of the RMA Premium Calculator

- Once you enter data click on the *Process Quotes* icon at the bottom of the data input form
- A variety of results pages available
 - The following is the *Producer Worksheet Page*

Computed Results	
	Total
Gross Margin Guarantee:	\$1,569,757.53
Liability:	\$2,209,421.00
Total Premium (Including A & O):	\$92,297.66
Subsidy (Including A & O):	\$16,767.66
Producer Premium (No Admin Fee Included):	\$75,530.00
Administrative Fee:	\$0.00
Producer Premium (Including Admin Fee):	\$75,530.00

Use of the UW LGM-Dairy Premium Calculator

- As a complement to the RMA website, we developed software that allows for a sensitivity analysis of LGM-Dairy participation
 - Contains a database of previous actual premium information since August, 2008
 - Contains a database that could be used for premium calculation prior to Aug. '08: Jan. '00 –July '08
 - Allow you to examine impacts under alternative market conditions
 - Can be used for *what-if* type of analysis
 - “What if I had purchased insurance during Oct?”
 - “How sensitive are my premiums to deductible?”

Use of the UW LGM-Dairy Premium Calculator

- *Understanding Dairy Markets* Premium Calculator:
http://future.aae.wisc.edu/lgm_dairy.html#2
 - Evaluate Impacts of \$0 - \$1.50/cwt Deductibles
 - ✓ Total and Per CWT Premiums
 - ✓ Premium as % of GMG
 - ✓ Probability of Simulated Payouts

UW LGM-Dairy Premium Calculator

- *UW LGM-Dairy Premium Calculator* can be found on the UW Understanding Dairy Markets website

- Supporting Software

This is a collection of spreadsheet and other software used to exemplify the use of LGM-Dairy

- LGM-Dairy: A preliminary version of a spreadsheet model that can be used undertake "what-if" analyses using actual premium data.

Important: PDF File Describing the Software System, Known Bugs and Operation Instructions associated with this software system

- Extensive Grain/Concentrate/Forages Feed Conversion Rates (Source: 1995 Dairy Reference Manual)
- RMA's Premium Calculator

http://future.aae.wisc.edu/lgm_dairy.html#2

UW LGM-Dairy Premium Calculator

- What kind of analyses are automatically displayed?

Impact of Deductible Level on Premiums and Gross Margin Guarantees (GMG)								
Deductible Level (\$/cwt)	Total Premium (\$)	Prem/cwt (\$/cwt)	Gross Margin Guarantee (\$)	Premium as % of GMG	Guarantee/cwt (\$/cwt)	% Prem/cwt Change	%GMG Change	Probability of Payout (%)
0.0	35,433	0.855	543,886	6.51	13.13	-----	-----	51.7
0.1	33,261	0.803	539,744	6.16	13.03	-6.13	-0.76	49.9
0.2	31,162	0.752	535,601	5.82	12.93	-12.05	-1.52	48.3
0.3	29,139	0.703	531,459	5.48	12.83	-17.76	-2.28	46.5
0.4	27,194	0.656	527,316	5.16	12.73	-23.25	-3.05	44.6
0.5	25,341	0.612	523,174	4.84	12.63	-28.48	-3.81	42.3
0.6	23,585	0.569	519,031	4.54	12.53	-33.44	-4.57	40.1
0.7	21,915	0.529	514,889	4.26	12.43	-38.15	-5.33	38.2
0.8	20,325	0.491	510,746	3.98	12.33	-42.64	-6.09	36.3
0.9	18,813	0.454	506,604	3.71	12.23	-46.91	-6.85	34.5
1.0	17,382	0.420	502,461	3.46	12.13	-50.95	-7.62	32.7
1.1	16,024	0.387	498,319	3.22	12.03	-54.78	-8.38	30.9
1.2	14,746	0.356	494,176	2.98	11.93	-58.38	-9.14	29.1
1.3	13,533	0.327	490,034	2.76	11.83	-61.81	-9.90	27.7
1.4	12,380	0.299	485,891	2.55	11.73	-65.06	-10.66	26.1
1.5	11,298	0.273	481,749	2.35	11.63	-68.11	-11.42	24.6

Automatic Validation of Feed Equivalents

- The UW calculator automatically checks your feeding regime to determine if it falls within the desired range
 - Undertakes this analysis once you click the following icon to undertake an analysis

*After All Farm Data is Entered,
Click to Run Your Analysis*

- Alternatively, you can access the standalone feed conversion software

◦ *Extensive Grain/Concentrate/Forages Feed Conversion Rates* (Source: 1995 Dairy Reference Manual)

http://future.aae.wisc.edu/lgm-dairy/excel_files/feed_conversions_2.xls

Contact Information

- LGM-Dairy Section of the University of Wisconsin
Understanding Dairy Markets Website:
http://future.aae.wisc.edu/lgm_dairy.html
- Briefing Paper: *USDA's Gross Margin Insurance Program for Dairy: What is it and Can it be Used for Risk Management*, by B. Gould, P. Mitchell and V. Cabrera
- Brian W. Gould Victor Cabrera
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