



## Instructions for Use of The Margin Protection Program Decision Tool

The Margin Protection Program Decision Tool was developed by the National Program on Dairy Markets and Policy at the request of the Farm Service Agency<sup>1</sup>. Dairy producers opting for enrollment in the Margin Protection Program (MPP-Dairy) will have decisions to make regarding coverage level and percentage of production history. This tool helps to simplify that decision with up-to-date market information, calculations of fee and premium costs, and estimates of the likelihood of payments in the year ahead. The tool is provided for information only. Users bear the sole responsibility for decisions affecting program participation and may want to consult other resources.

The decision tool is a web application that will run in all modern web browsers<sup>2</sup>. There are several advantages to using web applications. One is that updates to the program can take place immediately and another is that there is no need to download or install any software. We will update the application and add features over time. So, some screens may look different than what is seen in these instructions. You will find the application online at:

<http://DairyMarkets.org/MPP/Tool/>  
or  
<http://www.fsa.usda.gov/mpptool/>

The opening screen (Figure 1) provides information about the current version of the application and what is new to the program. There is also a disclosure statement to which you must agree before you can begin to use the program.

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<sup>2</sup> Chrome, Firefox, Internet Explorer 8 (and above), and Safari. Internet Explorer 6 and 7 are supported with the Chrome Frame extension installed.

## What's New

8-28-2014 (Version 1)

Initial signup for MPP-Dairy will take place from September through November, 2014. During this first signup period, producers can retroactively enroll for the 2014 months. This first signup period is also your chance to enroll for 2015 coverage. Note that the 2014 and 2015 coverage elections can be different. Coverage election in subsequent years will take place from July through September.

## Disclaimer

With respect to any opinions, findings, conclusions, or recommendations, neither the United States Government, the University of Illinois, nor the National Program on Dairy Markets and Policy makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Users bear the sole responsibility for decisions affecting program participation and may want to consult other resources.

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Version 1.0.0

Figure 1. Opening Screen of the Margin Protection Program Decision Tool.

We have designed the tool to provide a great deal of information to the user with minimal input on their part. In fact, a simple decision can be made in as little as four mouse clicks. Of course, more careful evaluation would lead to greater exploration of the web site.

### LGM-Dairy versus MPP-Dairy

One of the first decisions that a producers will have to make is whether to enroll in MPP-Dairy or LGM-Dairy. These decisions are mutually exclusive and once an operation has enrolled in MPP-Dairy they cannot revert to LGM-Dairy in future years. The option to use MPP-Dairy is for the remainder of the Farm Bill through 2018.

In the upper-left corner of the screen (Figure 2) there is a button that will let the user switch between decision tools for LGM-Dairy and MPP-Dairy. The LGM-Dairy Analyzer is a tool which has been available for many years and we will not cover its use here. Much more information about the LGM Analyzer can be found on the Understanding Dairy Markets website<sup>3</sup>. However, the button in the screen will let you flip between the two tools making optimal decisions under each program. This comparison should help inform a decision about which program a producer would elect to use.

The MPP Decision Tool has been designed to be minimally intrusive and the user's privacy is protected at the highest level. Absolutely no data is stored from a user's session and very little is required to run the program. The user should enter the name of the operation in the upper-left of the screen and the actual Production History of the farm in the upper-right corner.

<sup>3</sup> [http://future.aae.wisc.edu/lgm\\_dairy.html](http://future.aae.wisc.edu/lgm_dairy.html)

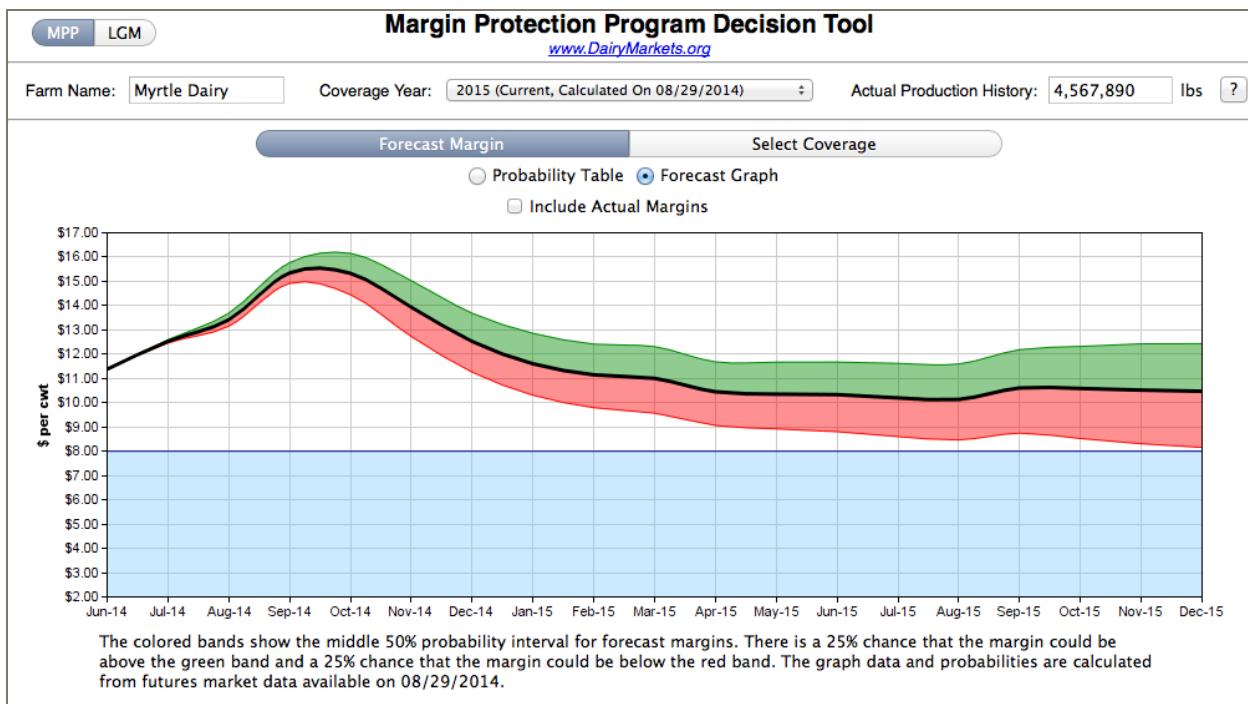


Figure 2. Forecast Graph of the Forecast Margin.

The **Actual Production History** for a farm will not change over the life of the Farm Bill. The production history will be increased every year by the annual increase in milk production for the United States. This value will be calculated by the Farm Service Agency and will be available by the normal July 1 beginning of the enrollment period. The production history for most farms will be the highest level of milk sales in the 2011, 2012 or 2013 calendar year. Users can enter their production history into a spreadsheet template which can be downloaded when they click on the [?](#) button in the upper-right corner of the tool. The spreadsheet has cells for monthly milk production on your farm from 2006 through 2018 and will automatically calculate the production history and the year in which it was achieved. The spreadsheet also has a hyperlink which will open your browser and pre-populate the decision tool with the operation name and actual production history.

#### The Forecast Margin Data

The screen in Figure 2 displays a **Forecast Graph** of the margin. The forecast uses daily futures and options data for corn, soybean meal, class III and class IV milk. This data is updated every business night and provides an estimate of the NASS All Milk, Corn and Alfalfa Hay prices, and the AMS Soybean Meal price used in the margin calculation. The footnote of the screen tells the user when the data were last updated.

Futures markets provide a consensus forecast of values which can be seen in the black line of the graph. The options prices also allow a calculation of the implied volatility of the markets which can be used to estimate the probability, or likelihood, of the calculation. The middle 50% forecast interval is shown in the red and green shaded regions of the graph. There is a 25% chance that the actual margin will fall within the red region, a 25% chance within the green region, and a 25% chance that the actual margin could be above the green or below the red

areas. The user can see that there is much greater confidence in nearby months (toward the left of the graph) than in months further into the future. The light blue zone at the bottom of the graph shows the levels of coverage which can be protected with the MPP-Dairy.

The **Forecast Margin** data can also be displayed in tabular form. Clicking on the **Probability Table** button of the **Forecast Margin** tab will display a screen like the one shown in Figure 3. Because the MPP-Dairy will make payments based on the average margin in two-month pairs, the table shows the expected (forecast) value for the two-month intervals and it shows the probability that the forecast margin would fall below the coverage level thresholds. For example, Figure shows the expected value for Nov-Dec 2015 to be \$10.50, but there is a 22% chance that the actual margin could be below \$8.00. Or, there is a 12% chance that the margin could be below \$7.00, etc.

Margin Protection Program Decision Tool <a href="http://www.DairyMarkets.org">www.DairyMarkets.org</a>														
MPP	LGM	Farm Name: Operation Name		Coverage Year: 2015 (Current, Calculated On 08/29/2014)			Actual Production History: 1,234,567 lbs							
Forecast Margin					Select Coverage									
<input checked="" type="radio"/> Probability Table <input type="radio"/> Forecast Graph														
Margin Level	Jul-Aug 2014	Sep-Oct 2014	Nov-Dec 2014	Jan-Feb 2015	Mar-Apr 2015	May-Jun 2015	Jul-Aug 2015	Sep-Oct 2015	Nov-Dec 2015					
Expected	\$12.97	\$15.34	\$13.23	\$11.38	\$10.73	\$10.34	\$10.17	\$10.60	\$10.50					
< \$8.00	-	-	-	3%	7%	12%	17%	17%	22%					
< \$7.50	-	-	-	1%	4%	7%	11%	11%	17%					
< \$7.00	-	-	-	-	2%	4%	6%	7%	12%					
< \$6.50	-	-	-	-	1%	2%	3%	4%	9%					
< \$6.00	-	-	-	-	-	1%	2%	2%	6%					
< \$5.50	-	-	-	-	-	-	1%	1%	3%					
< \$5.00	-	-	-	-	-	-	-	1%	2%					
< \$4.50	-	-	-	-	-	-	-	-	1%					
< \$4.00	-	-	-	-	-	-	-	-	1%					

This table shows the expected margin and probability of a Payment in the two-month intervals protected by the insurance levels in the Margin Protection Plan. The Expected Margin and Probabilities are calculated from futures market data available on 08/29/2014.

Figure 3. Probability Table of the Forecast Margin.

### Choosing Coverage

Figures 2 and 3 help users to assess the market conditions in the months ahead. When the user clicks on the **Select Coverage** tab, they will be presented with a table which allows them to make their selection of coverage. Figure 4 displays the coverage levels from \$8.00 down to \$4.00 in 50¢ increments. Based on the production history that has been entered, the annual **Fees and Premiums** are calculated in the second column for the various levels of coverage. The user can also change the **Coverage Percentage** of the production history between 25% and 90% in 5% increments with the selection box. This will change the fees and premiums values in the table.

**Margin Protection Program Decision Tool**  
[www.DairyMarkets.org](http://www.DairyMarkets.org)

Farm Name:	Operation Name	Coverage Year:	2015 (Current, Calculated On 08/29/2014)	Actual Production History:	1,234,567 lbs	<a href="#">?</a>
<input type="button" value="Forecast Margin"/> <input type="button" value="Select Coverage"/>						
<input type="radio"/> 2014 Estimate <input checked="" type="radio"/> 2015 Estimate						
<input type="checkbox"/> Include Actual Net Revenue      Coverage Percentage = <input type="text" value="90%"/>						
Coverage Level	Fees & Premiums	Expected Payment	Expected Net Returns			
\$8.00	\$5,378	\$1,492	(\$3,886)			
\$7.50	\$2,600	\$900	(\$1,700)			
\$7.00	\$1,908	\$519	(\$1,389)			
\$6.50	\$850	\$290	(\$560)			
\$6.00	\$558	\$158	(\$400)			
\$5.50	\$433	\$85	(\$348)			
\$5.00	\$308	\$47	(\$261)			
\$4.50	\$183	\$25	(\$158)			
\$4.00	\$100	\$14	(\$86)			

The Expected Payments and Net Returns are based on probabilities calculated from futures market data that were available on 08/29/2014. The "2015 Estimate" values are the period over which you must elect a coverage level and percentage of production history.

Figure 4. Select Coverage Screen.

The table also has a column with **Expected Payments**. The probability calculations include scenarios where margin values could be below coverage levels. That is why there is some possibility of payments being made. The **Expected Net Returns** is simply the difference between the **Fees and Premiums** paid and the **Expected Payments**.

Clicking on a coverage level in the table will highlight the user's choice. Remember, you can also alter the percentage of the production history covered. Once this selection is made, a button will appear which allows the user to download the PDF forms which will be pre-populated with the choice and other data from the session. Users can fill out other inputs in these forms and print them off. These forms (CCC-781 and CCC-782) must then be taken into the local Farm Service Agency office to elect your coverage.

The **Select Coverage** tab offers two choices for years: a forecast of the year ahead for which you would make your selection choice, and an estimate of the current year we are in. The estimate of the year we are in is provided to help keep track of the likelihood of payments with last year's selection level. The current year will normally be a combination of actual values and forecast values while the selection year ahead will be all forecast.

#### Impact of my Choices

If the user wants to consider the impact the MPP-Dairy program would have had on their operation, the decision tool allows them to go back in time. The drop down box near the top-middle of the screen shows the **Coverage Year** which can be changed to historic time periods. Users are encouraged to select earlier years—perhaps starting with 2008—and make choices as if the MPP-Dairy would have been in place. Choosing historic years, like 2008, puts you in the point in time near the end of September in the prior year's election period. The **Forecast Margin** graph and table will now show you what the futures markets were forecasting for the

year ahead. You will also now see that there is an **Include Actual Margins** checkbox which can show you what actually happened compared to what the forecast was.

You should also go to the **Select Coverage** tab and make choices for the coverage year. Now you can also click on the **Include Actual Net Revenue** checkbox to see what your choice would have returned in that year.

Conducting these choices over subsequent historic years will reveal what the impact of such choices would have been on the users operation. There is not “right answer” to an individual’s strategy. A farm that is heavily leveraged and at risk for survival during low margin events might choose to elect a mid-point selection, like \$6.00 coverage, in every year. A farm with high levels of equity might elect only catastrophic coverage, like \$4.00 or \$4.50 in each year. A farm that can afford paying higher premiums and is willing to accept more risk might want to elect the highest **Expected Net Returns** in each year.

It will also become apparent that the production history is important in the decision making. There are two tiers of premiums—a lower cost for farms electing coverage under 4 million pounds and a higher rate for coverage over 4 million pounds annually. Try comparing a 175 cow farm (about 4 million pounds of production history) with a 1,000 cow farm (about 23 million pounds). The **Expected Net Returns** suggest a more moderate choice of coverage level as premiums are significantly higher.