Margin Protection Program for Dairy

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Decisions

- How do you decide your dairy management actions?
  - No decisions (go with the wind)?
  - Dairy outlook (go with the gurus)?
  - On-farm management analyses?

Outline

- Origins of the MPP-Dairy
- Basics of the MPP-Dairy
- Decisions involved
- The payment

Origins of MPP – Dairy

- High milk prices do not guarantee profitable margins when feed prices are very high
- A program providing insurance coverage for dairy farmers when margins are low, or even negative, is needed

Origins of MPP – Dairy

Origins of MPP – Dairy

- *"Foundation for the Future"* (NMPF, 2010)
  - Proposed the (new) Margin Protection Program
    - Intends to support producer margins, not prices
    - "Margin" is simply defined as the all-milk price minus feed costs

Origins of MPP – Dairy

- *"Foundation for the Future"* (NMPF, 2010)
  - MPP provides a base level of protection (i.e. insurance coverage) for all producers which is fully subsidized by the federal government
  - MPP provides a voluntary level of supplemental coverage
    - Partially subsidized by the government
    - The level of subsidization decreases as the level of coverage increases

Outline

- Origins of MPP-Dairy
- Basics of the MPP-Dairy
- Decisions involved
- The payment

Basics of MPP

- What is MPP-Dairy?
  - Margin can be defined as the "national IOFC"
    - Feed costs implies feeding all the dairy animals on a farm (i.e., milking cows, heifers, and dry cows)
  - It is an insurance… and hopefully you will not need to use it!!!
  - It is not an investment for which you should expect returns

Basics of MPP

- Currency of MPP-Dairy
  - "National IOFC"… but be careful with units
    - Not in $/cow.day
    - Margin measured as **$/cwt**
      - Price received per hundredweight of milk
      - Cost of feed needed to produce a hundredweight of milk

$/cwt

Basics of MPP

- Standard diets ("national diets") and herd structures are used to estimate feed costs
  - Proposed by industry nutritionists
  - Revised by academic nutritionists

Basics of MPP

- Standard diets
  - For a lactating cow producing 68.85 pounds of milk per day during lactation

Daily Quantities of Feed Ingredients for a Lactating Cow

Ingredient	Inclusion (lb DM/cow.day)	Dry Matter (%)	Inclusion (lb AF/cow.day)	**Commercial Units (units/cow.day)**
Shell Corn	15.4	86	17.9	**0.3198 bushels**
Corn Silage	16.0	35	45.7	**0.0229 tons**
Soybean Meal	5.7	88	6.5	**0.0032 tons**
Alfalfa Hay	10.0	85	11.8	**0.0059 tons**

~47 lb DM

Basics of MPP

- Standard diets
  - For non-lactating (dry) cow

Daily Quantities of Feed Ingredients for a Dry Cow

Ingredient	Inclusion (lb DM/cow.day)	Dry Matter (%)	Inclusion (lb AF/cow.day)	**Commercial Units (units/cow.day)**
Shell Corn	1.2	86	1.4	**0.0249 bushels**
Corn Silage	12.0	35	34.4	**0.0172 tons**
Soybean Meal	3.5	88	4.0	**0.0020 tons**
Alfalfa Hay	7.1	85	8.4	**0.0042 tons**

~24 lb DM

Basics of MPP

- Standard diets
  - For heifers to calve within 1 year

Daily Quantities of Feed Ingredients for a Dry Cow

Ingredient	Inclusion (lb DM/cow.day)	Dry Matter (%)	Inclusion (lb AF/cow.day)	**Commercial Units (units/cow.day)**
Shell Corn	1.2	86	1.3	**0.0239 bushels**
Corn Silage	11.5	35	32.8	**0.0164 tons**
Soybean Meal	3.5	88	4.0	**0.0020 tons**
Alfalfa Hay	7.0	85	8.2	**0.0041 tons**

~23 lb DM

Basics of MPP

- Standard diets
  - For heifers (>500 lb BW)

Daily Quantities of Feed Ingredients for a Dry Cow

Ingredient	Inclusion (lb DM/cow.day)	Dry Matter (%)	Inclusion (lb AF/cow.day)	**Commercial Units (units/cow.day)**
Shell Corn	1.5	86	1.7	**0.0311 bushels**
Corn Silage	7.5	35	21.4	**0.0107 tons**
Soybean Meal	2.3	88	2.6	**0.0013 tons**
Alfalfa Hay	3.7	85	4.4	**0.0022 tons**

~15 lb DM

Basics of MPP

- Standard diets
  - For young heifers (<500 lb BW)

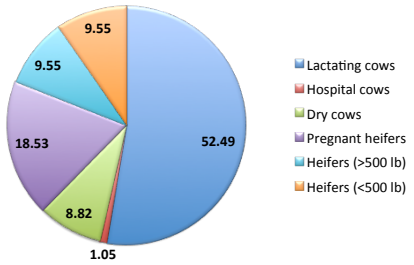
Daily Quantities of Feed Ingredients for a Dry Cow

Ingredient	Inclusion (lb DM/cow.day)	Dry Matter (%)	Inclusion (lb AF/cow.day)	**Commercial Units (units/cow.day)**
Shell Corn	1.7	86	2.0	0.0363
Corn Silage	3.2	35	9.0	0.0045
Soybean Meal	1.1	88	1.2	0.0006
Alfalfa Hay	1.0	85	1.2	0.0006

~7 lb DM

Basics of MPP

- Composition of the herd



Basics of MPP

- Composition of the herd
  - For every milking cow "shipping" 68.85 lb of milk, the following animals are being fed
    - 1.00 milking cow
    - 0.02 hospital cow (1.05 ÷ 52.49 = 0.02)
    - 0.17 dry cow (8.82/52.49 = 0.17)
    - 0.35 pregnant heifers (18.53 ÷ 52.49 = 0.35)
    - 0.18 heifers (>500 lb) (9.55 ÷ 52.49 = 0.18)
    - 0.18 heifers (<500 lb) (9.55 ÷ 52.49 = 0.18)

Basics of MPP

- Composition of the herd
  - Feed costs of all these animals have to be paid from 68.85 lb of shipped milk from one animal
    - 1.00 milking cow
    - 0.02 hospital cow (1.05 ÷ 52.49 = 0.02)
    - 0.17 dry cow (8.82/52.49 = 0.17)
    - 0.35 pregnant heifers (18.53 ÷ 52.49 = 0.35)
    - 0.18 heifers (>500 lb) (9.55 ÷ 52.49 = 0.18)
    - 0.18 heifers (<500 lb) (9.55 ÷ 52.49 = 0.18)

Basics of MPP

	Existence	Corn Grain	Corn Silage	Soybean Meal	Alfalfa Hay
Milking cow	1.00	0.3198	0.0229	0.0032	0.0059
Hospital cow	0.02	0.3198	0.0229	0.0032	0.0059
Dry cow	0.17	0.0249	0.0172	0.002	0.0042
Pregnant heifer	0.35	0.0239	0.0164	0.002	0.0041
Heifer (>500 lb)	0.18	0.0311	0.0107	0.0013	0.0022
Heifer (<500 lb)	0.18	0.0363	0.0045	0.0006	0.0006
Weighed Total	-	0.3509	0.0348	0.0046	0.0087

For every milking cow, there are needed approximately 0.3509 bushels of corn grain, 0.0348 tons of corn silage, 0.0046 tons of soybean meal, and 0.0087 tons of alfalfa hay

Basics of MPP

- For every cwt of milk, we need approximately
  - 0.5097 bu corn grain
    - 0.3509 bu ÷ 0.6885 cwt = 0.51 bu/cwt
  - 0.0505 ton corn silage
    - 0.0348 bu ÷ 0.6885 cwt = 0.05 ton/cwt
  - 0.0067 ton SBM
    - 0.0046 ton ÷ 0.6885 cwt = 0.0067 ton/cwt
  - 0.0126 ton alfalfa hay
    - 0.0087 ton ÷ 0.6885 cwt = 0.0126 ton/cwt

Basics of MPP

- Let's simplify…
  - 1 ton of corn silage ≅ 10.1 bushels corn grain
- For every cwt of milk, we need approximately
  - 0.5097 bu corn grain
    - 0.3509 bu ÷ 0.6885 cwt = 0.51 bu/cwt
  - 0.0505 ton corn silage or 0.5105 bu corn grain
    - 0.0505 ton CS × 10.1 bu CG/ton CS = 0.5105 bu CG
  - 0.0067 ton SBM
  - 0.0126 ton alfalfa hay

Basics of MPP

- Final formula (derived from provided document)

$$\text{Feed Cost}_{(\$/cwt)} = 1.0202_{(bu/cwt)} \times \text{Price Corn Grain}_{(\$/bu)} + 0.0067_{(ton/cwt)} \times \text{Price SBM}_{(\$/ton)} + 0.0126_{(ton/cwt)} \times \text{Price Alfalfa Hay}_{(\$/ton)}$$

Basics of MPP

- The actual formula (utilized by FSA) differs from the previous one

$$\text{Feed Cost}_{(\$/cwt)} = 1.0708_{(bu/cwt)} \times \text{Price Corn Grain}_{(\$/bu)} + 0.00735_{(ton/cwt)} \times \text{Price SBM}_{(\$/ton)} + 0.0137_{(ton/cwt)} \times \text{Price Alfalfa Hay}_{(\$/ton)}$$

Basics of MPP

- Sources of information
  - FSA = Farm Service Agency
    - www.fsa.usda.gov/programs-and-services/Dairy-MPP/index
  - NASS = National Agricultural Statistics Service
    - www.nass.usda.gov
  - AMS = Agricultural Marketing Service
    - www.ams.usda.gov

Basics of MPP

Month	Pay Periods	Corn ($/bu)	Alfalfa Hay ($/ton)	Soybean Meal ($/ton)	All Milk ($/cwt)	Final Feed Costs for MPP-D ($/cwt)	Milk Margin Above Feed Costs ($/cwt)	Milk Margin /pay Period*
2015								
	6							
Nov		3.60	150.00	308.60	18.20	8.18529	10.01471	
Oct	5	3.67	156.00	327.97	17.70	8.48496	9.21504	9.08207
Sep		3.68	157.00	333.62	17.50	8.55091	8.94909	
Aug	4	3.68	159.00	357.85	16.70	8.75641	7.94360	7.69510
July		3.80	169.00	375.71	16.60	9.15341	7.44659	
June	3	3.58	178.00	335.03	16.90	8.74170	8.15831	7.99534
May		3.62	192.00	320.23	16.70	8.86763	7.83237	
Apr	2	3.75	184.00	336.61	16.50	9.01788	7.48212	7.50415
Mar		3.81	172.00	357.83	16.60	9.07382	7.52618	
Feb	1	3.79	172.00	370.38	16.80	9.14461	7.65540	7.99554
Jan		3.81	174.00	380.02	17.60	9.26432	8.33569	

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MPP – Decisions Involved

- Decision 1:
  - How much volume will be covered?
    - 20 to 90% annual milk production
    - Units: cwt
- Decision 2:
  - What will be the coverage for that milk
    - Coverage from 4 to 8 $/cwt
    - $0.5-increments

MPP – Decisions Involved

- Premiums

Coverage Level (Margin) per cwt.	Tier 1 Premium for 2016-2018 ---------- Covered production history LESS THAN 4 million lbs.	Tier 2 Premium for 2014-2018 ---------- Covered production history GREATER THAN 4 million lbs.
$4.00	None	None
$4.50	$0.010	$0.020
$5.00	$0.025	$0.040
$5.50	$0.040	$0.100
$6.00	$0.055	$0.155
$6.50	$0.090	$0.290
$7.00	$0.217	$0.830
$7.50	$0.300	$1.060
$8.00	$0.475	$1.360

MPP – Decisions Involved

- Example A
  - Total volume: 3,999,999 lb/year
  - Covered volume: 80%
  - Coverage: $6.5/cwt
  - Premium: $0.090/cwt
  - Total premium: $2,280

Coverage Level (Margin) per cwt.	Tier 1 Premium for 2016-2018 ---------- Covered production history LESS THAN 4 million lbs.	Tier 2 Premium for 2014-2018 ---------- Covered production history GREATER THAN 4 million lbs.
$4.00	None	None
$4.50	$0.010	$0.020
$5.00	$0.025	$0.040
$5.50	$0.040	$0.100
$6.00	$0.055	$0.155
$6.50	$0.090	$0.290
$7.00	$0.217	$0.830
$7.50	$0.300	$1.060
$8.00	$0.475	$1.360

MPP – Decisions Involved

- Example B
  - Total volume: 3,999,999 lb/year
  - Covered volume: 80%
  - Coverage: $8.0/cwt
  - Premium: $0.475/cwt
  - Total premium: $15,200

Coverage Level (Margin) per cwt.	Tier 1 Premium for 2016-2018 ---------- Covered production history LESS THAN 4 million lbs.	Tier 2 Premium for 2014-2018 ---------- Covered production history GREATER THAN 4 million lbs.
$4.00	None	None
$4.50	$0.010	$0.020
$5.00	$0.025	$0.040
$5.50	$0.040	$0.100
$6.00	$0.055	$0.155
$6.50	$0.090	$0.290
$7.00	$0.217	$0.830
$7.50	$0.300	$1.060
$8.00	$0.475	$1.360

Outline

- Origins of MPP-Dairy
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MPP – The Payments

- Two key questions:
  1. Is there going to be a payment?
     - Discrete answer
     - Yes vs. No
  2. If there is a payment, how much would it be?
     - Quantitative answer

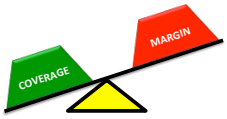
MPP – The Payments

- It's all about the difference between the margin and the coverage

There will be no payment

MPP – The Payments

- It's all about the difference between the margin and the coverage



There will be a payment!!!

MPP – The Payments

- It's all about the difference between the margin and the coverage

There will be no payment

MPP – The Payments

- It's all about the difference between the margin and the coverage
- The margin you chose is not what you get
  - Coverage = $6.5/cwt
  - MPP = $6.0/cwt
  - Difference = $0.5/cwt
- Payments are based on averages of 2 months
  - Payment = Volume Milk * % Coverage * (6.5 – 6.0) /6

MPP – 2014

Month	Pay Period	Corn $/bu	Alfalfa $/ton	SBM $/ton	All-milk $/cwt	Feed Cost $/cwt	Margin, $/cwt	Margin for Pay Period $/cwt
Jan	1							
Feb								
Mar	2	4.51	191.00	495.71	25.20	11.09850	14.10150	13.87422
Apr		4.71	206.00	514.01	25.30	11.65306	13.64694	
May	3	4.71	224.00	519.38	24.20	11.93913	12.26087	11.95747
Jun		4.49	222.00	501.72	23.20	11.54591	11.65409	
Jul	4	4.05	216.00	450.79	23.30	10.61731	12.68265	13.21061
Aug		3.63	209.00	490.30	24.10	10.36142	13.73858	
Sep	5	3.48	197.00	525.72	25.70	10.29629	15.40371	15.51136
Oct		3.56	194.00	381.50	24.90	9.28099	15.61901	
Nov	6	3.58	184.00	441.39	23.00	9.60564	13.39436	12.02943
Dec		3.78	183.00	431.73	20.40	9.73550	10.66450	

MPP – 2015

Month	Pay Period	Corn $/bu	Alfalfa $/ton	SBM $/ton	All-milk $/cwt	Feed Cost $/cwt	Margin, $/cwt	Margin for Pay Period $/cwt
Jan	1	3.81	174.00	380.02	17.60	9.26432	8.33569	7.99554
Feb		3.79	172.00	370.38	16.80	9.14461	7.65540	
Mar	2	3.81	172.00	357.83	16.60	9.07382	7.52618	7.50415
Apr		3.75	184.00	336.61	16.50	9.01788	7.48212	
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Jun		3.58	178.00	335.03	16.90	8.74170	8.15831	
Jul	4	3.80	169.00	375.71	16.60	9.15341	7.44659	7.69510
Aug		3.68	159.00	357.85	16.70	8.75641	7.94360	
Sep	5	3.68	157.00	333.62	17.50	8.55091	8.94909	9.08207
Oct		3.67	156.00	327.97	17.70	8.48496	9.21504	
Nov	6	3.60	150.00	308.60	18.20	8.18529	10.01471	
Dec								

MPP – The Payments

- Example A (Jul-Aug 2015)
  - Total volume = 4,000,000 lb/year
  - Volume covered = 80%
  - Coverage = $6.5/cwt
  - Margin = $7.69510/cwt
  - Difference ≥ 0; therefore, NO PAYMENT

MPP – The Payments

- Example B (Jul-Aug 2015)
  - Total volume = 4,000,000 lb/year
  - Volume covered = 80%
  - Coverage = $8.0/cwt
  - Margin = $7.69510/cwt
  - Difference = -$0.3049; therefore, PAYMENT
    - Payment = [40,000 cwt × 0.80 × ($0.3049/cwt)] / 6
    - Payment = $1,626

Basics of MPP – Summary

- What is MPP-Dairy?
  - Margin can be defined as the "national IOFC"
  - Feed costs implies feeding all the dairy animals on a farm
  - Currency: $/cwt
  - It's all about the difference between margin and coverage
  - It is an insurance… and hopefully you will not need to use it!!!
  - It is not an investment… farmers should not expect "direct" returns

Basics of MPP – Summary

"Yes! FSA paid me $123,960 from MPP"

"What an ignorant! Doesn't this farmer know we are in a bad crisis?"

Thanks


Virginia Cooperative Extension
Virginia Tech · Virginia State University

Income Over Feed Costs in the Dairy Enterprise

https://pubs.ext.vt.edu/DASC/DASC-51/DASC-51.html