

Dairy Revenue Protection Risk Management to Protect Component Values

Jersey producers will have a new risk management tool that will more fully protect the value of their high component milk when the new insurance product developed by the American Farm Bureau Federation (AFBF) and its subsidiary American Farm Bureau Insurance Services Inc. (AFBIS) hits the market this fall. For producers of high component milk, risk management tools and safety

net programs have never fully accounted for their milk's higher-than-standard butterfat and protein content. The MILC program was based off the Class I price, and Federal Milk Market Order prices assume component levels of 3.5% butterfat and 2.99% true protein. The Margin Protection Program (MPP) uses USDA's all milk price, which is based on the national average of butterfat and protein in producer milk. While those component averages are higher than 3.5% and 2.99%, they are still well below average Jersey milk. Producers opting to manage risk by using Class III and Class IV futures and options remain limited to prices that are based on milk that is 3.5% butterfat and 2.99% true protein.

The concept of AFBF's Dairy Revenue Protection (Dairy-RP) comes from crop insurance programs that offer protection to growers from unexpected declines in commodity yields and/or prices. As the name implies, Dairy-RP will insure

expected revenue, which is the combination of expected milk price multiplied by a producer's declared milk production volume. Developed in conjunction with the Federal Crop Insurance Corporation (FCIC), policies will be sold by USDA-approved insurance providers. Just as with crop insurance, USDA will subsidize the insurance premiums. Premiums will be based on market-

implied risk and priced using actuarially appropriate methods. Insurance contracts will be available in segments of calendar quarters (three-month blocks), and can be purchased for up to the next five quarters.

To participate in Dairy-RP, a producer only has four decisions to make.

The *first* decision is whether to base the insured milk price on Class III and Class IV CME futures prices or on individual component prices for butterfat and protein that are derived from CME futures. Producers opting to insure their milk price will select a ratio of Class III and Class IV that totals 100, for example 65% Class III and 35% Class IV. Producers opting to insure their component prices will need to choose their component test levels, for example 4.7% butterfat and 3.5% protein.

The *second* decision is how many pounds of milk to insure. Insuring pounds of milk is straight forward.

Table 1 Guarantee Calculations			
Quarterly Average CME Milk Futures Value		Farmers Choice % of Component	Calculated Price
Class III	\$ 16.04	75.0%	\$ 12.03
Class IV	\$ 15.35	25.0%	\$ 3.84
Price Guarantee/CWT			\$ 15.87
Farmers Choice Milk Covered/Lbs		Price Guarantee/CWT	Total Revenue Guarantee
4,000,000		\$ 15.87	\$ 634,700.00
Coverage Level			90%
Producer's Revenue Guarantee			\$ 571,230.00
Realized Revenue Calculations			
Quarterly Announced FMMO Class Values		Farmers Choice % of Component	Calculated Price
Class III	\$ 14.54	75.0%	\$ 10.91
Class IV	\$ 13.85	25.0%	\$ 3.46
Price Realized/CWT			\$ 14.37
State-Indexed Actual Production/Lbs		Actual Price/ CWT	Realized Revenue
3,920,000		\$ 14.37	\$ 563,206.00
This is an example of realized prices and only applies to 1 quarter. In this example, the producer would not have to pay all 5 quarters to get just one coverage.			

Indemnity Calculations	
Prod Rev Guarantee	\$ 571,230.00
Realized Prod Revenue	\$ 563,206.00
Indemnity	\$ 8,024.00

The producer simply needs to select a desired volume, for example 4,000,000 pounds. The *third* decision of which price and how many pounds to insure will determine the producer’s expected revenue for the quarter (expected price x pounds insured = expected revenue). The next decision to be made is how much of the expected revenue to insure. Producers can opt to insure as much as 95% of their expected revenue. Essentially, at this step producers are selecting their deductible. Premiums to insure 90% of expected revenue will be higher than premiums associated with a lower expected revenue.

The *final* decision is which calendar quarters to insure. Policies will be available for up to the next five calendar quarters. Producers can opt to insure any or all of the five quarters available. Because CME futures prices vary daily, Dairy-RP premiums will fluctuate daily in concert with the futures markets.

Tables 1 and 2 demonstrate the determination whether indemnity payments are due. At the end of each insured quarter, the producer’s realized revenue will be calculated and compared to insured revenue. The first step to calculating realized revenue is to adjust the producer’s volume of insured milk or components to his or her state’s indexed production. For example, assume a producer insured 4,000,000 pounds of milk and the state’s expected production was 5,000 pounds of milk per cow for that quarter. However, if the state’s actual production turned out to be 4,900 pounds per cow, a 2% decline, the producer’s insured volume of milk would be reduced by a yield adjustment factor

of 2% to 3,920,000 pounds. Then the state-indexed pounds of milk (or components) are multiplied by the announced Class III and IV prices (or the announced component prices) to determine the producer’s realized revenue.

For Jersey producers, the difference between insuring Class III and Class IV milk values compared to insuring component values can be significant. **Table 1** demonstrates insuring 90% of the expected revenue from 4,000,000 pounds of milk using a blend of 75% Class III and 25% Class IV milk when the futures prices were \$16.04 and \$15.35, respectively. If at the end of the quarter the

state-indexed production fell by 2% (80,000 pounds) and the Class III and IV prices declined to \$14.54 and \$13.85, respectively, the producer would receive an indemnity payment of \$8,024.

Table 2 demonstrates buying the same insurance for 4,000,000 pounds of milk that is 4.7% butterfat and 3.5% protein. Given the same 2% decline in production and relative decline in component prices, the producer would realize an indemnity of \$11,324, a gain of more than \$3,000 compared to using Class III and IV. The difference is because all the butterfat (4.7%) and all the protein (3.5%) could be insured instead of being locked into Class III and IV default component levels of 3.5% butterfat and 2.99% protein.

Given that Dairy-RP will offer a feature unique from other risk management programs, that being the option to insure pounds of components, NAJ supports its introduction into the marketplace. Jersey producers should be encouraged that Dairy-RP recognizes that not all milk is created equal.

Table 2 Guarantee Calculations			
Quarterly Average CME Component Value/lb.		Farmers Choice % of Component	Calculated Price
Butterfat	\$ 2.55	4.7%	\$ 11.985
Protein	\$ 2.06	3.5%	\$ 7.210
Solid % Fixed			
Solids	\$ 0.17	5.7%	\$ 0.969
Price Guarantee/CWT			\$ 20.16
Farmers Choice Milk Covered/Lbs.		Price Guarantee/CWT	Total Revenue Guarantee
4,000,000		\$ 20.16	\$ 806,560.00
Coverage Level			90%
Producer's Revenue Guarantee			\$ 725,904.00
Realized Revenue Calculations			
Quarterly Announced FMMO Component Value/lb.		Farmers Choice % of Component	Calculated Price
Butterfat	\$ 2.25	4.7%	\$ 10.575
Protein	\$ 1.91	3.5%	\$ 6.685
Solid % Fixed			
Solids	\$ 0.17	5.7%	\$ 0.969
Actual Price/CWT			\$ 18.23
State-Indexed Actual Production/Lbs.		Actual Price/ CWT	Realized Revenue
3,920,000		\$ 18.23	\$ 714,576.80
<small>This is an example of realized prices and only applies to 1quarter. In this example, the producer would not have to pay all 5 quarters to get just one coverage.</small>			

Indemnity Calculations	
Prod Rev Guarantee	\$ 725,904.00
Realized Prod Revenue	\$ 714,576.80
Indemnity	\$ 11,327.20