



# Margins and cash flow impacted herds differently

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**O**PERATING a dairy farm business is complex. There are constant challenges that affect plants, animals, and people. Given these constant challenges, financial matters are rarely mentioned as a practice dairy producers enjoy or make a priority when other aspects of farming are competing for precious time.

However, knowing your numbers is critical given today's market environment. Good decisions can only be made when a farm's breakeven margin is known and monitored. The 2014 Farm Bill took this a step further with the Margin Protection Program for Dairy (MPP-Dairy) by offering compensation based on the margin a producer purchased to cover shortfalls.

A lot of frustration has ensued as the margin provided does not match the real-world numbers, especially for Northeast dairies. The other issue creating frustration is the multiple ways a margin can be reported, and unless the calculation is specified, producers may not be comparing apples to apples. Confusion over margin calculations should not prevent producers from knowing this number.

## Margins matter

A breakeven margin can be stated on a per hundredweight (cwt.) or per cow basis. Regardless of the unit, a breakeven margin is the amount of money required to pay the other expenses after feed costs.

Another confounding part is if the number reflects solely the lactating cow feed costs or if it includes all animals. Then there is the issue of the margin being calculated on a cash flow basis using owner draw, principal, and interest payments, or if it is calculated on a profit and loss basis using depreciation and the value of owner's labor and management.

Due to the amount of information needed to calculate a margin,

some numbers are better suited for an annual calculation. In other instances, margins are easily computed monthly, such as income over feed cost (IOFC) per cow using only the lactating cow feed as the financial metric.

## A 24-dairy comparison

Penn State's Extension Dairy Team has been working intensively with 24 dairies to summarize cropping and feeding practices and how they influence the operation's breakeven margin. A complete Finpack analysis was made on each farm as well as a cash flow plan. Using the RankEm feature from Finpack, farms were divided into low-, medium-, and high-profit groups.

Table 1 illustrates the results examining the "margin on a per cwt. basis" and "income over feed cost on a per cow basis." Total feed costs were used, including home-raised and purchased feed for all animals. The margin per cwt. would be comparable to the 2014 Margin Protection Program for Dairy (MPP-Dairy) numbers.

Northeast dairies struggled in 2016 to maintain a sustainable margin. The 24 producers participating in the Crops to Cow project are very progressive, well-managed herds. The breakeven margin per cwt. ranged from \$9.55 to \$11.80. In the MPP-Dairy, an \$8 per cwt. margin is the most a farm can select for coverage. In the Northeast, this does not come close to helping producers manage their risk or provide catastrophic coverage, even in an extremely bad year like 2016.

To help simplify the process and to attract more producers to monitor their breakeven number, the dairy team has for many years promoted IOFC using only the lactating cow feed costs, which are included in Table 2. The monthly milk check, milk weights, and ration values are relatively easy to collect and the math is simple to determine this metric.

Using the Penn State Excel spreadsheet, the breakeven IOFC

per cow can be determined and used to evaluate how the herd is performing monthly. When calculating the margin per cwt. using only the lactating cow ration, it is typical to observe a \$1.50 to \$2 per cwt. higher margin compared to a margin using the feed costs for all animals.

Examining the various profit levels and depending on how the margin or IOFC is calculated, there are distinct differences on the surplus or deficit remaining. The benefit of monitoring this information is to show how a herd is performing over time, good years versus poor years.

The medium- and high-profit herds, either on a per cwt. or IOFC, were sustainable in 2016. Their performance in previous years was good so they were positioned to bounce back faster after a bad year like 2016.

The low-profit herds were hit hard by 2016 and are struggling in 2017. These margins do not provide any opportunity for risk management that covers their breakeven cost, whereas the medium and high group could benefit from utilizing some strategies on both milk and feed pricing.

## Draw attention

A new farm bill is being debated on Capitol Hill. It makes good business sense to know what it costs to produce milk and how practices can impact that margin.

The other benefit is communicating to legislators that the current system does not come close to meeting the needs of producers in some regions and that adjustments are needed that represent the region and the real-world income and expenses dairy producers' face. 🐄

**Table 1. 2016 breakeven margins for 24 low-, medium-, and high-profit dairies<sup>1</sup>**

Profit level <sup>2</sup>	Low	Med	High
Number of farms	7	8	9
Number of cows	206	487	292
Gross milk price/cwt.	\$17.29	\$17.01	\$17.59
Average production/cow, lbs.	75.89	81.44	81.66
<b>Per cow basis</b>			
Milk income/cow	\$13.12	\$13.85	\$14.36
Feed cost/day/all animals	\$6.41	\$6.41	\$6.00
IOFC received (actual)/cow	\$6.71	\$7.44	\$8.36
IOFC breakeven/cow	\$8.95	\$8.42	\$7.80
IOFC surplus (deficit)/cow	(\$2.24)	(\$0.98)	\$0.57
<b>Per cwt. basis</b>			
Total direct and overhead expenses/cwt.	\$21.92	\$19.76	\$18.36
Feed cost/all animals/cwt.	\$10.12	\$9.42	\$8.79
Margin received (actual)/cwt.	\$7.17	\$7.59	\$8.78
Margin breakeven/cwt.	\$11.80	\$10.34	\$9.55
Margin surplus (deficit)/cwt.	(\$4.63)	(\$2.75)	(\$0.77)

<sup>1</sup>Penn State Extension Dairy Team's Crops to Cow Project: Funded by Northeast Sustainable Agricultural Research and Extension

<sup>2</sup>Source: University of Minnesota RankEm program

**Table 2. Breakeven IOFC and margin on a cash flow basis for milk cow feed only<sup>1</sup>**

IOFC received (actual)/cow	\$6.13	\$7.22	\$7.81
IOFC breakeven/cow	\$9.51	\$9.37	\$9.81
IOFC surplus (deficit)/cow	(\$3.38)	(\$2.15)	(\$2.00)
Margin breakeven/cwt.	\$13.28	\$12.46	\$12.69

<sup>1</sup>Penn State Extension Excel Cash Flow Spreadsheet