



INFORMATION TO IMPROVE THE BOTTOM LINE!

Managing your SNF:BF ratio

W.J. Grexton, Manager, Herd Management Services

An oversupply of Solids Non-Fat (SNF) and the resulting payment issues for many milk producers has created three questions:

- **What is an SNF ratio?**
- **How is the ratio calculated?**
- **How can I change the ratio in my herd?**

The SNF ratio refers to the SNF:Butterfat ratio of milk, which is the amount of protein and other solids in milk compared to the amount of butterfat.

To understand the SNF:BF ratio further, it is necessary to understand the components that make up milk. The largest component of milk is water (about 87%). The other four solid ingredients are Butterfat (3.8%), Protein (3.2%), Lactose, which is a form of sugar (4.6%) and Minerals (about 1.0%). Most references to milk components combine lactose and minerals together and call them "Other Solids".

Using the milk component values above, the SNF is 8.8 (3.2% protein + 5.6% other solids). To create the ratio, you would divide 8.8 by 3.8(% fat) to get a final SNF:BF ratio of 2.32:1 (Sometimes referred to simply as 2.32). The percentage of lactose and minerals (Other Solids), produced by a cow or herd almost never changes. Therefore, to reduce the SNF:BF ratio for your herd you must increase the % butterfat or decrease the % protein.

To effectively manage the SNF:BF ratio in your herd you need to understand where the components come from:

- **Butterfat** is manufactured primarily from fibre with a small amount from body fat or from rations with added fat. In the rumen, fibre is broken down into fatty acids and these fatty acids are what the udder uses to manufacture butterfat. A simple rule is: more fibre equals more fat. Obviously nothing is that simple. There are other factors involved but this is the main one.
- **Protein** is the result of dietary protein being converted to milk protein. The primary source of

this is bacterial protein (65%-70%). The balance will come from protein in the diet that bypasses the rumen. In short, the bacteria manufacture most of the protein.

- **Lactose** is primarily determined by the amount of glucose circulating in the blood, which in turn comes from the starches and sugars in the ration. The cow takes a molecule of lactose and combines it with water to provide milk volume. Because of this, it is very rare for the % lactose to vary in milk

Presiding over the whole manufacturing process is the need for nutrients for the cow herself and keeping her healthy to continue producing milk. This process requires energy and it is taken from the general pool. The rumen needs enough fibre for proper function, adequate water must be supplied, the bacteria must be fed properly, etc. To add one more part to the process, there is a limited amount of space in the rumen, so these nutrients have to be supplied in precise amounts and times to achieve maximum production. If not, problems occur. Thus, the need for a balanced diet all the time.

If your SNF:BF ratio is high (meaning more than 2.4:1), the question is: Are a few cows causing the situation or is it the entire feeding program? To assist you in monitoring the SNF:BF ratio of your cows, DHI has developed a new optional column to provide you with the SNF:BF ratio for each cow using her test day components and an estimate for lactose and minerals. This information is available as an optional column on the Cow Monitor Report or can be obtained from Dairy Comp through your Advisor.

Bottom Line:

1. Find out which cows are the problem.
2. Determine if the cause is nutritional or genetic.
3. If it is nutritional, consult with your nutritionist and adjust your ration.
4. If it is genetic, add individual SNF:BF ratio as criteria for culling animals.

ROF in 2005 and Beyond

ROF is a CanWest DHI web-based program that allows the dairyman to see the effect of management changes in real dollars. To use it, there are 3 options available:

1. Producers can mail/fax inputs to DHI and will receive the analysis back by mail or fax.
2. Producers can enter the information directly via the Internet and print herd results. DHI would mail the group comparisons.
3. Certain advisors (feed companies or vet clinics) have been approved to use the program. They will be able to enter information and provide the results to clients.

The ROF program involves collecting the total feed offered to the milking herd on a particular day and comparing that to the milk and components produced to calculate a ROF (return over feed costs) on a per cow basis. The program requires basic production and feed numbers and prices.

ROF offers analysis of the Milking Cow, Dry Cow and Replacement Heifers. In addition, there is a Direct Crop Input Cost analysis to help calculate the direct cost/tonne of growing home-grown feeds available.

ROF is easy enough to do on your own computer and we recommend you use it whenever things change in feed quality, cost, ration adjustments, changes in climate, cow comfort or other management area where the impact may be significant. Knowing the dollar value of change makes sense.

Dairymen can print the Test Day Results and the ROF History from the internet immediately after the information is entered. In addition each one

Continued on back...

ROF in 2005 and Beyond (Continued)

will receive a comparison of all herds in their geographic area and other benchmark information.

You are able to compare with others:

- Feed cost/cow/day and litre milk produced
- Revenue/cow/day
- Return (ROF)/cow/day
- Forage and total intake/cow/day
- Total ration cost
- Daily milk, fat and protein production
- Efficiency (based on 100 kg quota)
 - cows required to fill it
 - cost to fill
 - revenue earned

The ROF program is available to all dairymen. It is priced as a:

Package: Unlimited ROF (\$70/yr + GST = \$74.90)

Single Test: (\$12 per entry + GST = \$12.84)

ROF analysis by advisors is provided independent of DHI and may have other pricing. Contact the advisor concerned for details.

What do You Have to Do?

- Register with the program using the enrollment form found on the CanWest DHI website, or contact DHI.
- Complete an input form which contains the total feed fed and milk produced on one day to the milking herd.
- Send the input form CanWest DHI or enter the information directly via the internet.

You will receive the analysis for that test day by mail (users of the internet can print the reports immediately). DHI will mail you comparative results from your region as well as benchmark comparisons. Repeat the process whenever conditions change to see the economic impact of that change.

The issues facing the dairy manager in 2006 are complicated yet boil down to one thing: "How do I increase (or regain), my profit and move my dairy operation forward?" The market for livestock sales is unreliable and this puts more importance on producing profitable milk. What affects profit? Cost and productivity!

However, remember the cost that is important is **NOT** the cost/COW but the cost/DAY or per kg fat. Keeping extra cows around is a large drain on profits as it adds costs without the efficiency of getting maximum milk from them. Profitability means finding the holes and plugging them.

One last thing: If you are not monitoring the impact of changes, you are probably losing money. "If you can't measure it - you can't monitor it". Use the ROF analysis to help you increase profit.

For more details refer to the CanWest DHI website, www.canwestdhi.com/rof.htm, or contact CanWest DHI at 1-800-549-4373.

ROF Benchmark Results Show...

Of 973 tests done in 2004/2005, more than 10% changed in excess of \$2.00/cow/day (avg change \$2.95) from the previous test and an additional 25% changed more than \$1.00/day (average change \$1.42). That means for a 100 cow herd, profitability varied in excess of \$4,300 from 1 month to another on more than 1/3 of the tests done (the extreme 10% had more than 2 times that difference). There was not much difference in the average milk production of each of the groups - most groups were between 29 and 30 kg/day. (The groups with losses in excess of \$1.00/day produced about 1 kg less.)

Dairying means change. Managing means knowing how to adjust to change. The ROF analysis is worth the effort to find out the impact of changes. Consider the following...

Production Differences:

You know production increases profit! But do you know how much? Take one more look at the differences in the table below.

ROF Results by Production (2005)

Category	ROF	Cost	Cost/L	Cost/T	TDMI	% Forage	Milk/Cow
20-24 kg/day	\$10.32	\$3.29	\$.149	\$157	20.9	58%	22.1
24-28 kg/day	\$12.00	\$3.46	\$.132	\$157	22.1	57%	26.3
28-32 kg/day	\$13.82	\$3.63	\$.121	\$159	22.8	57%	30.0
32-36 kg/day	\$15.56	\$3.80	\$.113	\$161	23.5	57%	33.5

First compare milk and ROF. From low to high, milk is 51.5% higher and ROF is 50.8% higher. Profit is almost identical in response as milk production.

Now look at feed cost - 15.5% higher on a per cow basis! But look at it on a per litre basis and it is almost 32% LOWER. In addition the cost/tonne of total ration has almost no difference (\$157-\$161). Rations with virtually identical costs produced dramatically different results. Next, look at the % forage in each ration - again almost identical. The ration itself must not be the cause of such different results.

What else is there? Intake makes a difference. In 2005, from low to high, 2.6 kg of additional intake (of similar feed) had 11.4 kg more milk. (In 2004, 1.8 kg made a difference of 11.2 kg milk.) Is the production difference all a function of intake? I don't think so!

What else is there? Cow comfort, environment, udder health - these must have an influence. We all know that, but how much of the \$15,720 ($\{15.56 - 10.32\} \times 30 \text{ days} \times 100 \text{ cows}$), is feed and how much is these other things? For 15,000 a month, I would think we would want to find out.

SNF Differences:

446 herd tests showed the following trends when compared by estimated SNF Ratio. Until the ratio was above 2.4, the fat produced/cow was the same while protein increased. Above 2.4, fat production declined as did the protein. Bottom line? It took more cows to fill quota with higher ratio milk - between 4 and 10 cows more - with the additional cost of feeding and caring for them. The same trend showed up in the 2004 results.

ROF Results by SNF:BF Ratio (2005)

Category	Avg Ratio	ROF	Cost	Milk/Cow	Fat/Cow	Prot/Cow	#Cows/100kg
<2.2	2.17	\$13.34	\$3.67	28.0	1.16	.93	85.9
2.2 - 2.3	2.25	\$13.61	\$3.60	28.8	1.16	.96	86.0
2.3 - 2.4	2.35	\$13.78	\$3.57	30.0	1.16	.98	86.4
2.4 - 2.5	2.44	\$13.25	\$3.57	29.6	1.10	.98	90.7
>2.5	2.59	\$12.44	\$3.62	29.6	1.03	.96	96.8

Having said that, look at the difference in revenue and ROF by being below 2.2 compared to 2.35 SNF ratio. That \$0.44/cow/day is a potential income of \$1,320/month for a 100 cow herd.

Good managers look at what the market asks for and then endeavor to provide it the most economical way possible. While many of us think about those who are above the SNF limits, there are still more than 50% below the acceptable limits whose profit can increase with changes.