Alberta Dairy Management
PREPARED FOR AND DISTRIBUTED BY THE DAIRY EXTENSION ADVISORY GROUP

The Cost of Skim-off

Skim-off for the 1993-94 dairy year will be based on your fluid quota and fat test. The formula will be as follows :

$$\text{SKIM-OFF (kg of MSQ)} = 0.1921 \times \text{FLUID QUOTA (litres/day)} \times \frac{[\text{FAT TEST (kg/hL)} - 2.63]}{[\,3.67 - 2.63\,]}$$

where :

- the preliminary skim-off factor 0.1921 is the incremental skim-off for the 1992 calendar year (187,476 kg of MSQ) divided by the current total fluid quota holdings in Alberta (976,045 litres/day);
- FAT TEST will be the average test for your 1993-94 shipments;
- 2.63 (kg/hL) was the average fat test in class I dairy products (plus sour cream) sold in 1992;
- 3.67 (kg/hL) was the average fat test for all milk shipped in Alberta in 1992.

When your actual skim-off is assessed at the end of this dairy year, it will be calculated on the basis of 1993 values for incremental skim-off, class I fat test and provincial average fat test for milk shipped.

Here's an example. Let's assume you own 1150 litres of fluid quota and the average fat test for your 1993-94 shipments turns out to be 3.8 kg/hL. Your skim-off assessment will be :

$$0.1921 \times 1150 \times \frac{[3.8 - 2.63]}{[3.67 - 2.63]} = 249 \text{ kg of MSQ}$$

If you can plan for this, you might decide to replace the anticipated loss of quota with used MSQ before the dairy year ends. Assuming a price of $25 per kg (June 1993 quota exchange price), this will cost you $6212.

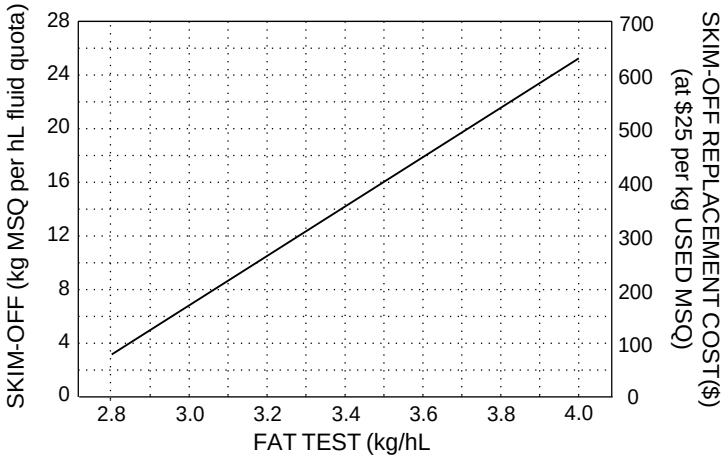
The graph below shows the anticipated skim-off per hectolitre (100 litres) of fluid quota at fat tests ranging from 2.8 to 4.0 kg/hL. The cost of replacing the skim-off loss with used MSQ at $25/kg is also shown. Returning to our example above, if you could get your 3.8 kg/hL fat test down to an average 3.3 kg/hL this year, your skim-off, and the cost of replacing it would be cut by over 40%. If you could achieve a 2.63 kg/hL fat test, your skim-off assessment will be zero. How can you lower your fat test, how low can you go and what will it cost?

Lowering your fat test

Although genetics certainly has a role, the ration is the most critical factor influencing fat test. Rations containing large quantities of chewable fibre result in high fat tests. Finely chopped forages require less chewing and fat tests decline. When fibre is replaced with starchy concentrates such as barley and wheat, fat tests drop further, particularly when the grain is finely ground or pelleted.

Rations which include little chewable fibre and excessive, rapidly digested concentrates can provoke acidosis, resulting in cows going off feed. Chronic acidosis can seriously reduce long-term productivity by producing :

- lameness due to laminitis;
- inflammation and ulceration of the lining of the rumen, and;
- liver abscesses.



This graph shows the effect that 1993-94 fat tests will have on the year-end skim-off assessment.

A useful indicator of acidosis is a fat : protein inversion, where the fat test falls below the protein test. Lameness, low and sporadic feed intakes and abnormally long alarm lists in computer-fed herds are other signs to watch for. Although fat tests below about 3.2 kg/hL are usually ill-advised, some herds successfully maintain these levels with few apparent problems.

The Cost of Lowering Fat Test

How will lowering your fat test affect your bottom line? The table below gives an example which demonstrates a simple format for calculating feed costs.

Once you know your current costs, you will want to make some changes to your ration. Let's assume that you decide to remove the first cut hay to reduce the amount of long, chewable fibre and you will also increase the amount of grain fed.

The response you will see will look something like that shown in the table : fat test will drop and production will likely increase. Assuming your shipments were just enough to fill your quota, you will have to ship more volume to compensate for the drop in test. But the 4.1 litre per cow increase in production shown in the example is more than enough to satisfy your quota requirement and you will, therefore want to milk fewer cows.

What is the net result? By lowering your fat test, you will reduce your loss of MSQ to skim-off and the cost of purchasing MSQ to replace it. In this example, you have increased your daily feed costs and your cost per cow but your feed cost per hectolitre has decreased as a result of the increased production per cow. Milk revenue over feed costs has also increased.

Although this example demonstrates both a reduction in skim-off assessment and an improvement in profitability, this will not always be the case, depending on :

- your particular quota position;
- your current fat test and production level, and;
- the type of ration you are currently feeding.

A simple computer program which will allow you to use your own figures is available from the author.

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RATION INGREDIENTS			OLD RATION		NEW RATION	
FEED	units	$/unit	units/day	$/day	units/day	$/day
1st CUT HAY	lb	0.053	544	28.83	-	-
HAYLAGE	lb	0.018	1540	27.72	1676	30.17
BARLEY SILAGE	lb	0.014	2400	33.60	2600	36.40
DAIRY RATION	kg	0.190	710	134.90	865	164.35
TOTAL COST PER DAY				225.05		230.92
FAT TEST (kg/hL)			3.8		3.3	
AVG YIELD (litres/cow/day).....			28.0		32.1	
SHIPMENTS REQ[1] (litres/day) ..			1959		2117	
COWS REQUIRED			70		66	
FEED COST ($ per cow)			3.22		3.50	
($ per hL)			11.49		10.91	
MILK REVENUE[2] ($/day).....			1025.28		1041.24	
REVENUE - FEED COST ($/day)			800.23		810.32	

[1] SHIPMENTS REQUIRED is calculated assuming 1150 litres of fluid quota; 14500 kg MSQ; 75% utilization; 5.9% exclusion

[2] MILK REVENUE is gross revenue before deductions calculated using a quota price of $52.62 /hL; an over-quota price of $44.05 /hL; a fat differential of $0.54 /0.1kg/hL