Case For and Against Higher SNF Standards For Fluid Products[1]

The issue of higher minimum solids-not-fat levels as a requirement in Federal standards of identity in fluid milk products has been with us for several years. Interest or concern reached a peak in late 1982 when the so-called Hayakawa amendment was introduced in Congress. The matter was shelved, due in large part to an energetic effort mounted by the Milk Industry Foundation. But the issue has not gone away and it will be a matter of continuing industry debate.

Higher SNF standards has its strong supporters, generally including the higher test breed groups, the California producer sector, and various marketing cooperatives. The opposition generally includes the Milk Industry Foundation, some dairy cooperatives involved in fluid milk processing, and probably the government, including both FDA and USDA.

In order to give some perspective to the SNF issue, it becomes necessary to review what is happening in the total fluid milk market nationally. Table 1 reports fluid milk product sales changes since 1970.

Table 1. Fluid Milk Product Sales, United States[2]

	Plain Whole Milk	Lowfat Milk	Skim Milk	Total Fluid Milk*
1970	41.5 Bil. Lbs.	6.2 Bil. Lbs.	2.4 Bil. Lbs.	53.1 Bil. Lbs.
1975	36.9	11.7	2.5	54.4
1981	30.8	16.9	2.6	53.5

*Also includes filled milk, flavored milk, and buttermilk.

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[1]Robert E. Jacobson, Professor, Agricultural Economics, for presentation at the 50th Dairy and Food Industry Conference, The Ohio State University, February 16, 1983.

[2]Changing Patterns of Fluid Milk Sales, Milk Industry Foundation, November, 1982, p. 8.

Fluid milk products continue to be the No. 1 user of this nation's milk supply, holding at over 50 billion pounds usage annually, and absorbing about 40 percent of producer milk marketed. However, big changes have been occurring within fluid milk usage, with whole milk dropping by over 25 percent since 1970, lowfat milk up nearly three times, and skim milk holding fairly constant.

When these same products are measured on a per capita basis, the trends reflect the same directions among the products.

Table 2. Per Capita Consumption of Fluid Milk Products, United States

	Plain Whole Milk	Lowfat Milk	Skim Milk	Total Per Capita*
1970	207 Lbs.	31 Lbs.	12 Lbs.	264 Lbs.
1975	173	55	12	254
1981	135	74	12	235

*The total per capita also includes flavored milk/milk drinks and buttermilk, which were 10 pounds and 4 pounds per capita respectively in 1981.

Two problems show up in the per capita data. First, per capita consumption of all fluid milk products has decreased by 11 percent since 1970. Second, fewer milk solids are moving in the fluid products being marketed. There are three dimensions to the fewer milk solids problem.

1. Whole milk is currently defined as having a 3.25 percent minimum of milk fat. Prior to July 1, 1975, the standard of identity for whole milk specified a 3.5 percent milkfat minimum. So we are seeing less fat move in whole milk.

2. A larger proportion of the fluid milk market is accounted for by lowfat and skim today as compared to earlier years. In 1970, lowfat and skim were only 16 percent of the fluid market; by 1981, they were 37 percent of the fluid market. The switch to lowfat and skim had its greatest adverse impact, again, on milkfat consumption.

3. The third dimension of fewer milk solids in fluid milk products

directly impacts SNF; that is the sharp downward trend in SNF fortification of lowfat and skim milk.

Table 3. Percentages of Lowfat and Skim Milk Fortified With SNF, United States

	Lowfat	Skim Milk
1970	74 pct.	74 pct.
1975	44	63
1981	19	31

Whereas three-fourths of lowfat and skim milk sales in 1970 were fortified with additional SNF in 1970, the incidence of fortification trended sharply downward through the 1970's. By 1981, less than one-fifth of the lowfat milk and less than one-third of the skim milk in the U.S. reflected SNF fortification. Several factors explain the decline in fortification, but primary among them is cost. Wholesale prices for nonfat dry milk were 27 cents a pound in 1970, 61 cents in 1975, and 94 cents in 1981. Fortification became costly; consumers were willing to buy unfortified lowfat and skim milk; and we see the results today in a lower solids fluid milk market.

Standards of Identity

The present Federal standards of identity for fluid milk products have been in place since June 30, 1975. Federal standards of identity set requirements regarding name, ingredients, and label information which food products must meet if they move in interstate commerce. Most states have adopted the Federal standards of identity for fluid milk products.

With respect to milkfat and solids-not-fat, the minimum requirements for fluid milk products are shown in Table 4. The comparable requirements that the State of California uses are also shown because much of the

promotion of higher SNF requirements use the California standards as a model.

Table 4. Milkfat and SNF Standards For Fluid Milk Products

	Federal		California	
	Milkfat	SNF	Milkfat	SNF
Whole Milk	3.25 pct.	8.25 pct.	3.4 - 3.6 pct.*	8.6 - 8.8 pct.*
Lowfat	0.5 - 2.0	8.25	2.0	10.0
Skim Milk	<0.5	8.25	<0.25	9.0

*The California standards for whole milk call for a 12.2 percent minimum total solids, to be accomplished by the specified milkfat and SNF requirements.

The primary concern with the standards at this time is the 8.25 percent minimum solids-not-fat specified for all three fluid milk products. The question becomes something like this -- "Why shouldn't the Federal standards call for something like the SNF standards used in California?"

Producer Milk

Let us recognize at this point what kind of milk, solids-not-fat wise, is going into fluid milk products. It is estimated that producer milk in the United States averaged 8.59 percent solids-not-fat in 1981. The solids-not-fat test of producer milk has been almost constant at 8.6 percent for many years. Therefore, it is important to recognize that on the average, fluid milk products automatically reflect a SNF test substantially above the FDA standard of identity, simply because the solids are in there from the beginning.

One factor that needs to be recognized in the average, however, is the seasonality of SNF tests. Solids-not-fat tests move seasonally in the same directions that milkfat tests move; but SNF tests do not change by as large an amount. Given the seasonality pattern in California, where monthly SNF tests are reported, it is evident that SNF tests in the

U.S. range from a low of 8.50 in July to a high of 8.70 in December. The obvious implication is that if higher SNF standards were to be implemented, the fortification requirements would vary seasonally, and the highest rates of fortification would be required in the May through September period.

Why the Present Standards?

If one is interested in changing the present standards of identity for fluid milk products, a logical place to start is to investigate the rationale used for defining the standards. Specifically, why did the FDA set 8.25 percent as the minimum SNF level for fluid milk products? The answer, as recorded in the Federal Register of October 10, 1973, is as follows:

> ". . . to set the required minimums for milkfat and solids-not-fat at or near these average figures (average producer milk tests of 3.68 percent for milkfat and 8.61 percent for SNF) would mean that in approximately half of all cases, the production from an individual cow would not meet the minimum compositional requirements, and therefore would not be 'milk' as defined by the identity standard. While the Commissioner is aware of the merits of fluid milk products having increased milk solids content, he is of the opinion that the minimums proposed bear a reasonable relationship to the composition of milk as it comes from the cow. . . ."

The above paragraph represents the justification for our present standards. Why the composition of a raw product should determine the standards for processed products is not made clear. I doubt that it is a rationale used very often for advancing standards of identity for other products. But the standards for fluid products are in place; maybe they are the right standards, but they certainly lack in a systematic determination.

Arguments Against Changing SNF Standards

Two reasons come to the forefront as basic arguments for not changing the present SNF standards:

1. The present SNF standards for whole milk, lowfat milk, and skim milk are minimum standards. Any operator can process higher solids milk if he chooses to, and some do. The present system works. Why legislate something that the "market" is not audibly asking for? If the consuming public really wanted higher solids milk and were willing to pay for it, the industry would and could shift rapidly in that direction.

2. The cost of processing fluid milk products and therefore the price to the consuming public would increase if SNF standards were raised. Let me offer my own little analysis on this, recognizing that the Milk Industry Foundation and the League of California Milk Producers have already advanced their contrasting estimates of the price impacts.

A few simpliying assumptions are in order.

A. The higher standards for SNF would be fairly comparable to California's standards, with 8.6 percent SNF for whole milk, 9 percent for skim milk, and 10 percent for lowfat milk. The milkfat standards would not change from their present Federal levels.

B. Seasonality of SNF tests in producer milk will not be recognized. Instead, calculations are based on average annual SNF tests.

C. The direct processing costs associated with fortifying fluid milk products are estimated to be 15 cents per cwt. This cost estimate is derived from observations Professor Novakovic of Cornell made while studying the costs of reconstituted milk.

D. Either wet solids or dry solids may be used for fortification. The added solids cost is based on present wholesale prices for nonfat

dry milk of 94 cents per pound.

E. The SNF test of 100 pounds of producer skim milk is higher than the SNF test of 100 pounds of producer milk. (Essentially, 8.6 ÷ 100 pounds of producer milk equals an 8.6 percent SNF test; 8.6 ÷ 96.4 pounds of producer skim milk equals 8.9 percent SNF test). In the subsequent calculations, these test differences are not recognized, basically to provide some margin for meeting the standards.

Given the above assumptions (arguable as they may be), what would be the cost/price impacts on fluid milk products associated with the higher standards?

1. Whole Milk -- I think it's fair to observe that the cost of processing whole milk, and the resale prices of whole milk, would show very little change. Since producer milk averages about 8.6 percent SNF, very little fortification would be required. The present retail price of whole milk in the U.S. is $1.12 per half gallon at the supermarket. Moving the standards on SNF from 8.25 to 8.6 percent for whole milk should not affect price or demand.

2. Lowfat Milk -- It is lowfat milk which would carry most of the economic brunt of higher SNF standards. Given a 10 percent SNF standard, it is assumed that 1.4 pounds of nonfat dry milk would be required to fortify 100 pounds of lowfat milk.

(a)	1.4 lbs. x 94¢ per lb.	= $1.32
(b)	Plus 15 cent processing cost	+.15
(c)	Minus 11 cents for amount of skim replaced by powder	-.11
		$1.36 added cost per 100 lbs. of lowfat

Since there are 23 1/4 half gallons in 100 pounds of milk, the added cost per half gallon of lowfat due to SNF fortification would be almost 6 cents ($1.36 ÷ 23 1/4). The present retail price for lowfat milk in the U.S. averages $1.06 per half gallon. Given that the retail price

would have to jump by 6 cents (or by almost 6 percent, the expected consumption response, assuming usual price elasticities, would be about a minus 2 percent in lowfat milk sales.

One other effect in the lowfat milk market, at least as we experience it here in Ohio, is that lowfat milk is a widely used price leader item in the supermarkets. Fortification and its accompanying costs could dampen some of the enthusiasm for using lowfat as a price leader.

3. Skim Milk -- Skim milk sits in between whole milk and lowfat milk insofar as the effects of higher SNF standards are concerned. For purposes here, it is assumed that a move to 9 percent SNF as a minimum for skim milk would require 0.4 pounds of nonfat dry milk per 100 pounds of skim.

(a)	0.4 lbs. x 94¢ per lb.	= $0.38
(b)	Plus 15 cent processing cost	+.15
(c)	Minus 3 cents for amount of skim replaced by powder	-.03
		$0.50 added cost per 100 pounds of skim

The additional 50 cents cost per cwt. of skim milk would add about 2 cents plus to the retail price of skim (50 cents ÷ 23 1/4 = 2.15 cents). The present retail price of skim milk in the U.S. is averaging 98 cents per half gallon. Therefore, a two to three cent per half gallon increase in the retail skim milk price would mean a 2 to 3 percent price increase, and a decrease in consumption of about 1 percent.

Higher prices and costs are the main arguments against increasing SNF standards of fluid milk products. The impacts on whole milk would be very limited, but consumer prices for lowfat milk would increase by 5 to 6 percent and consumer prices for skim milk would increase by 2 to 3 percent. There would be slight downward effects on quantities

demanded of these fluid products.

Arguments For Changing SNF Standards

Three or four reasons emerge as important considerations that support higher solids-not-fat standards for fluid products.

1. Higher SNF standards work -- they have passed the pragmatic test. By most accounts, the California experience has been successful, and if higher SNF standards work well there, why wouldn't they work well everywhere?

2. Fortification could mean more nutritious, better tasting fluid milk products, especially lowfat milk and skim milk. Calcium in particular would be a significant nutritional plus. The combination of taste-preference factors could mean some positive effects on the demand for fluid milk products. In noting the potential stimulus to demand, it is observed that per capita consumption of fluid milk products in California in 1980 amounted to 120 quarts, 9 quarts higher than the all Federal milk order average of 111 quarts. However, at the same time, per capita consumption levels in several Federal order markets that are on FDA standards of identity enjoyed higher per capita consumption levels than California.

3. Higher SNF minimums would help open the door to component pricing (protein pricing) in fluid milk markets. The component pricing issue is somewhat peripheral to the basic SNF question, but it needs to be acknowledged. Higher SNF standards would permit double standardization (milkfat and SNF) of milk which is essential to attain equal costing of raw product in fluid markets. Contrary to the views of some interests, higher SNF standards are necessary to implement component pricing in fluid

markets; but if we did have higher SNF standards, it would not necessarily follow that component pricing plans would have to be implemented.

4. A final argument for higher SNF standards is that a major effect would be to utilize a lot of surplus nonfat dry milk. Since the Commodity Credit Corporation will have to buy about 1 billion pounds of powder in 1983 to support milk prices, any means of moving some of that surplus through the commercial market gets looked on with some favor. The question is -- how much surplus NFDM would be utilized to fortify fluid milk products?

Here are some rough estimates, and they relate to the earlier calculations on cost of fortification.

a. Whole Milk -- No nonfat dry milk would be utilized because very little fortification would occur.

b. Lowfat Milk -- For the 16.9 billion pounds of lowfat milk reported in Table 1, minus the 19 percent already fortified, add 1.4 pounds of nonfat dry milk per cwt. of lowfat.

137 Million Cwt. Lowfat x 1.4 lbs. NFDM
= 191.8 Mil. Lbs. NFDM

c. Skim Milk -- For the 2.6 billion pounds of skim milk reported in Table 1, minus the 31 percent already fortified, add 0.4 pounds of nonfat dry milk per 100 pounds of skim.

18 Million Cwt. x 0.4 pounds NFDM
= 7.2 Mil. Lbs. NFDM

The total use of NFDM for fortification purposes would be substantial -- 191.8 million pounds of powder for lowfat and 7.2 million pounds of powder for skim milk -- a total annual usage of 199 million pounds.

The California experience verifies the additional powder usage. On

an annual basis, the California milk industry uses 45 million pounds of nonfat dry milk to fortify its fluid milk products. On a national basis, we could expect something toward an additional 200 million pounds of NFDM to be utilized in fortifying fluid milk products each year.

Summary -- Where does one finally come out on the issue of higher SNF standards for fluid milk products? I don't know that the pros and cons can tell you -- it may finally depend on your own vested interest position in the milk industry. But some things seem more certain.

1. Higher SNF standards would utilize more nonfat dry milk and reduce CCC purchases.

2. Consumer prices for lowfat milk and skim milk would increase; demand for these products would decrease marginally; and the products themselves would be of higher quality with respect to nutrition and taste.

3. Higher SNF standards would facilitate the movement toward component pricing.

4. Higher SNF standards would bring the State and Federal governments more heavily into the fluid milk industry. Enforcement of product standards would be a bigger job with higher SNF standards.

5. If you like the adage -- "If it ain't broke -- don't fix it" -- you might say leave well enough alone. The standards are much lower than the average SNF tests of fluid milk products. Consumers are getting better products than the standards imply. The machine isn't broken -- but maybe it could run better.