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Marketing Research Report 5

**Characteristics and Practices of
Dealers Delivering Milk to
Pennsylvania Public Schools**

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ACKNOWLEDGEMENTS

In a study that depends almost wholly on primary data collected by mail survey from voluntary participants, it is clear whose contribution should be acknowledged, above all others. Those 117 dealers who returned questionnaires, therefore, have our sincere thanks. Without their cooperation, the study on which this report is based would not have been possible. We hope they find the results somehow useful in the operation of their school milk accounts.

Characteristics and Practices of Dealers Delivering Milk to Pennsylvania Public Schools

Blair J. Smith*

INTRODUCTION

In 1987 a line of research pertaining to milk in the public schools of Pennsylvania was initiated at the Pennsylvania State University. The first phase of this research program consisted of a survey of the food service directors in Pennsylvania's 500 public school districts. The second phase was comprised of a survey of all fluid milk dealers thought to have school milk accounts in Pennsylvania. The results of the second study are reported in this publication.

Probably the one experience Pennsylvania citizens have most in common with milk takes place in the state's public schools. Some may not have had milk in their homes prior to public school, and once they graduate from high school they may choose not to have milk again. If one of the reasons for not drinking milk is because the school milk experience was unsatisfactory, the dairy industry ought to be aware of this so that proper preventive or corrective action can be taken by the appropriate parties. The overall goal of our research is to provide guidance for such actions if indeed it is found Pennsylvania's school milk programs seem to have potential for measurable improvement.

THE SURVEY PROCESS

On April 8, 1988 the questionnaire reproduced in the APPENDIX to this report was mailed to all 157 fluid milk dealers thought to have

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school milk accounts in Pennsylvania. The dealers were identified by the Pennsylvania Milk Marketing Board as having sold milk to one or more schools in October 1987. Questionnaires were returned by 117 dealers. Nineteen of the responding dealers said they no longer had any school milk accounts, and one was unable to provide the minimum amount of information needed to be included in our analysis. Thus, the results reported in the following sections are based on information from 97 dealers.

RESULTS

Number of School Districts and Buildings Served by Dealers

Table 1 shows the means and ranges in numbers of school districts, and in the numbers of individual school buildings by grade levels, that were served by individual responding dealers. The most common type of fluid milk dealer in Pennsylvania is what the Pennsylvania Milk Marketing Board defines as a sub-dealer. Sub-dealers are firms that buy milk that has already been put into retail containers which they in turn sell to their own accounts. These dealers tend to handle relatively small volumes, on average. There are 46 such sub-dealers among the 97 dealers on which our results are based, and they are most likely to be the ones represented at the lower ends of the ranges shown in Table 1. Sixty-three of the 97 responding dealers delivered milk in three or fewer school districts. Only 10 dealers made deliveries to schools in 15 or more different districts. Thus, there is a very pronounced bunching of dealers at the lower end of the range of numbers of school districts being served by the responding dealers. The same sort of bunching of dealers at the lower ends of the ranges for number of individual school buildings was also evident in the survey data.

Table 1 Numbers of Pennsylvania School Districts and School Buildings Served by Individual Fluid Milk Dealers, Spring 1988.

Item	Number of Accounts	
	Average	Range
School Districts Served	6.3	1 to 75
School Buildings Served		
Elementary	19.2	0 to 206
Junior High	15.1	0 to 50
Senior High	5.7	0 to 51
All Grade Levels	29.8	1 to 285

Source: Dealer survey, question 2.

Brand Names or Processor Labels

The brand name or processor label most frequently listed by dealers responding to question 3 of the survey instrument appeared 18 times. Three other brands showed up 7 times each. Otherwise, no individual brand was listed by more than 4 different dealers. How the frequency of brand mention correlated with brand dominance in school milk sales was not investigated in this study.

Frequency, Time, and Type of Delivery Service

The 97 dealers that returned usable schedules reported deliveries to a total of 2,891 individual school buildings in Pennsylvania. Table 2 summarizes dealers' responses to the question pertaining to frequency, time, and type of delivery to these schools. There may be some double counting of schools because some schools may have received deliveries from more than one dealer. Although it is not believed that multiple milk vendors in individual schools was very common, our survey did not provide the information necessary to reliably estimate the frequency with which this might have occurred.

It is not surprising that Table 2 shows so few schools received milk either just once, or just four times a week. Once is hardly often enough in most cases, and four times a week would seem to imply on-site school storage capacities twice what would be required for daily delivery. About one-half of the dealers that made twice weekly deliveries to some schools also made three times weekly deliveries to other schools, thus keeping their drivers more fully employed throughout the week.

Table 2 Percentages of Schools by Delivery Frequencies, Delivery Times, and Type of Delivery Service, Pennsylvania Public Schools, Spring 1988.

Frequency of Delivery	Percent of School Buildings
Once a week	1.2
Twice a week	14.9
Three time a week	17.3
Four times a week	5.0
Five times a week	61.6
Total	100.0

Time of Delivery	Percent of School Buildings
Before 8:00 a.m.	35.8
Between 8 and 10 a.m.	43.8
Between 10 and noon	11.1
After 12 noon	8.6
Varies, no set schedule	0.7
Total	100.0

Type of Delivery Service	Percent of School Buildings
Place milk on a receiving dock	1.2
Put milk in cafeteria cooler	83.5
Put milk directly on serving line	15.3
Total	100.0

Source: Dealer survey, questions 4, 5, and 8.

Milk deliveries appear to have been made in time for lunch the day of delivery better than 90 percent of the time (Table 2). Deliveries after noon (8.6 percent) probably were not served until the next day (or even later, depending on frequency of delivery).

The data on type of delivery service show the very strong prevalence of the practice of placing milk in the cafeteria cooler by the delivery person (Table 2). Simply placing the milk on a receiving platform to be taken in by cafeteria personnel is now very uncommon. It was not determined how delivery services have changed in recent years, but anecdotal evidence suggests simple dock drops have diminished while the other two delivery practices have increased.

Prices and Payments

The Pennsylvania Milk Marketing Board establishes minimum prices at which milk sales to schools must take place. The response to question 9 of the survey instrument showed that 90.7 percent of the dealers usually charged prices just equal to the specified minimums. The remaining dealers (9.3 percent) indicated they usually charged somewhat more than the minimum established price, but no attempt to determine how much more was undertaken in this study. Only seven dealers (7.2 percent) indicated payments were made on what they considered to be somewhat less than a timely basis (question 10, survey instrument).

Non-Dairy Fluid Products Delivered by Milk Dealers

Table 3 shows the number of dealers delivering non-dairy fluid products to schools, the number of different drinks, and the type of drink, delivered by these dealers. Most of the 34 dealers not making delivery of any non-dairy drink were the sub-dealers who tend to be relatively small in terms of the number of schools and school districts they serve. The 63 dealers who did deliver non-dairy drinks averaged two different drinks each. Presumably, the dealers delivering three or more different drinks were the ones serving large numbers of schools and school districts so they had to accommodate a wider variety of preferences.

Delivery of Other Dairy Products by Milk Dealers

Dealers who delivered fluid milk to Pennsylvania public schools were only slightly less likely to deliver other dairy products than they were to deliver non-dairy drinks. Table 4 shows that 39 dealers delivered no other dairy products (vs. 34 who did not deliver any non-dairy drinks, Table 3). Furthermore, there were only 117 delivery-product type events involving other dairy products (vs. 125 such delivery-product type events involving non-dairy drinks). By and large, the types of other dairy products delivered by dealers supplying fluid milk to schools were those products that are commonly associated with the fluid rather than the manufacturing side of the dairy industry. Thus, the firms that delivered fluid milk to Pennsylvania schools appeared to be rather highly specialized to that function, but were important suppliers of other drinks and other dairy products as well.

Table 3 Numbers of Dealers by Numbers and Types of Non-Dairy Drinks Delivered to Pennsylvania Public Schools, Spring 1988.

Number of Drinks	Number of Dealers
0	34
1	25
2	22
3	11
4	3
5	1
6	1
Total	<u>97</u>

Type of Drink	Number of Dealers
Fruit juices and drinks	64*
Iced tea	31
Orange juice	24
Lemonade	6
Total	<u>125</u>

* Includes apple, grape, orange-pineapple, pineapple, grapefruit, and other unspecified types and flavors.

Source: Dealer survey, question 6

Table 4 Numbers of Dealers by Numbers and Types of Other Dairy Products Delivered to Pennsylvania Public Schools, Spring 1988.

Number of Products	Number of Dealers
0	39
1	27
2	16
3	8
4	3
5	2
6	2
Total	<u>97</u>

Type of Product	Number of Dealers
Cottage cheese	41
Ice cream, ice milk, and mixes	25
Yogurt	18
Sour cream	10
Various creams and creamers	9
Frozen milk shakes	4
Butter	3
Other	7
Total	<u>117</u>

Source: Dealer survey, question 7

Dealer Concerns about School Milk Handling Practices

Dealers were asked to relate any concerns they might have with respect to the way schools handled, stored, or served the milk they delivered to them. Better than half of all dealers responding to question 11 (46 of 87) were generally satisfied or pleased with their schools' milk handling practices (Table 5). The two concerns mentioned most often were those having to do with rotation of stock (20 dealers) and control of temperature (16 dealers). There was no direct way to relate these concerns to milk quality or taste, however, so their effect on student consumption of milk remains unresolved in this study.

Dealer Ideas for Increasing School Milk Consumption

Dealers were asked what suggestions they might have for increasing milk consumption in the schools they served (other than to correct the things they had already said they were concerned about). The responses to this question (no. 12) were generally more diverse than to the one dealing with concerns (no. 11), but the total number of responses was about the same.

It is clear from Table 6 that dealers believed the most effective way to increase milk consumption was to do away with, or reduce the availability of, beverages that compete with milk (soft drinks, especially). Then, the next most common idea was to increase the variety and/or frequency of offering of types of milk beverages, especially chocolate. The other two prominent ideas were to promote and advertise the nutritional importance of milk, and to somehow reduce the amount students must pay for milk.

Table 5 Dealer Concerns About Milk Handling Practices in Pennsylvania Public Schools, Spring 1988.

Concern	Frequency of Mention
No response, missing data	10
No concerns, very satisfied, or schools are doing a very good job	46
Inadequate attention to stock rotation, should pay more attention to code data	20
Need to control milk temperature more closely	16
Milk placed in proximity to odor-inducing products	3
Better match of school milk orders and school milk needs	3
All other concerns, each mentioned only once or twice	11

Source: Dealer survey, question 11

Table 6 Dealer Ideas for Increasing Milk Consumption in Pennsylvania Public Schools, Spring 1988.

Ideas	Frequency of Mention
No response, missing data	25
Said they had no ideas or were satisfied with level of consumption	18
Do away with soft drinks and soft drink machines	15
Provide nutritional information to children, advertise milk's benefits more	9
Offer chocolate daily	8
Increase government subsidies for milk, reduce price to students	8
Increase variety of types of milk offered	7
Reduce availability of fruit drinks and juices	4
All other ideas each mentioned only once or twice	23

Source: Dealer survey, question 12

SUMMARY AND CONCLUSIONS

In the spring of 1988 a questionnaire was mailed to all 157 dealers thought to have public school milk accounts in Pennsylvania. Ultimately, usable responses were received from 97 of those dealers, and these serve as the basis for the results reported here. The purpose of the survey was to ascertain milk dealer delivery practices and to obtain dealer perspectives on how milk was handled by the schools they served. It was hoped this information would allow an evaluation of current practices, and possibly uncover opportunities for increasing levels of milk consumption in Pennsylvania public schools.

The apparent size of milk dealers varied a great deal. The number of different school districts served by individual dealers varied from 1 to 75, and the number of individual school buildings varied from 1 to 285 per dealer. One processor brand was reported to be in as many as 18 different school districts. At the other extreme, however, 40 processor brands were reported by dealers to be in only one school district each.

Most dealers (61.6 percent) delivered milk to their school accounts five times a week. Of the remainder, 32.2 percent delivered milk either two or three times a week. A large majority (90.7 percent) of the schools received their milk by noon on the day of delivery. This would seem to permit serving milk the same day it was delivered, in most instances. Very few schools (only 1.2 percent) received no delivery service beyond simply having their milk placed on their receiving dock. The most common practice was to have the dealer place the milk directly in the cafeteria cooler (83.5 percent of the schools received milk this way). The remainder of the schools (15.3 percent) had the dealer place the milk directly on the cafeteria serving line.

The majority of dealers (90.7 percent) charged only the minimum price allowable by the Pennsylvania Milk Marketing Board. As to payments by the schools, 92.8 percent of the dealers said these were generally made on what they considered to be a timely basis.

Vendors of fluid milk frequently delivered non-dairy drinks and other dairy products to schools as well. Delivery of non-dairy drinks would seem to be a logical extension of their primary product line, and fits well with their primary delivery systems. Most of the other dairy products delivered by school milk vendors are ordinarily associated more with the fluid than with the manufacturing side of the dairy industry. The products most often mentioned were cottage cheese, ice cream, yogurt, and sour cream. The so-called hard manufactured dairy products, butter and cheese in particular, were very seldom mentioned.

Less than half of the responding dealers expressed any concern about the milk handling practices of the schools they serve. The two concerns most commonly expressed were inadequate attention to stock rotation and code date (20 dealers) and the need for better control of milk temperatures (16 dealers). When asked for their ideas about how milk consumption might be increased in their schools (other than to correct the faults already noted), the idea expressed most often was to do away with soft drinks (mentioned by 15 dealers). Other leading ideas, suggested by from 7 to 9 dealers each, were to increase advertising and promotion of milk's benefits, offer chocolate milk daily, reduce price of milk to students, and increase the variety of types of milk offered.

Generally, there appears to be some room for improvement of dealers' and schools' milk handling practices, but the need or potential is not great. Once a week deliveries probably ought to be up-graded to at least twice a week. The practice of placing milk on a receiving dock probably ought to be discontinued, unless the dealer is absolutely assured the milk is placed in a cooler by school personnel almost immediately.

Dealers think the schools ought to pay closer attention to stock rotation, code dates, and milk temperature. What the schools think of dealers practices was not investigated in the present study. This side of the issue was examined in the first phase of the program of research on milk in the public schools of Pennsylvania, however, and will be reported elsewhere.

Ideas that dealers have for increasing the consumption of milk in schools seem plausible enough, but it will take further research to evaluate their probable effectiveness. Analysis of the data obtained from the earlier survey of school district food service directors seem to validate at least two of the dealer's suggestions. That offering chocolate daily would increase consumption is probably true, because the earlier study showed very clearly that in those schools where chocolate was offered, it was highly preferred over all other milk beverages. It was also learned in the earlier study that the prices students pay for milk are inversely related to the amounts they buy. Therefore, the suggestion by dealers to reduce milk prices as a means of increasing consumption would seem to have some merit. Whether the financial realities of the situation would permit lowering prices, however, is not within the scope of this article.

APPENDIX

The mail questionnaire:

A SURVEY OF DEALERS DELIVERING FLUID MILK
TO PUBLIC SCHOOLS IN PENNSYLVANIA

**A SURVEY OF DEALERS
DELIVERING FLUID MILK
TO PUBLIC SCHOOLS IN
PENNSYLVANIA**



Conducted by

The Pennsylvania State University

University Park, Pennsylvania

To the Person in Charge of School Milk Sales:

The general purpose of our study of milk in the public schools of Pennsylvania is to learn about existing patterns and practices of milk consumption by our school children. We have already surveyed the Food Service Supervisors in the 500 public schools districts in the state, and they have provided very useful data and insights pertaining to our school milk programs.

Now, we hope to obtain information and perspective from your vantage point. A high response rate is important to insure that all the varied situations in the state are well represented. In most cases, you can adequately answer all the questions from your own memory. At worst, you may have to refer to your records, or to other persons, for some of the school counts asked for in questions 2, 4, 5, and 8.

We look forward to hearing from you at your earliest convenience. Please be assured that your response will be appreciated and treated confidentially. Your firm's data will always appear in summary with other dealers, never individually.

Sincerely yours,

Blair J. Smith
Blair J. Smith
(814) 865-0469

Jack J. Kirkland
Jack J. Kirkland
(814) 865-2561

Department of Agricultural Economics and Rural Sociology
Weaver Building
The Pennsylvania State University
University Park, PA 16802

1. Do you currently deliver fluid milk to any public school buildings in Pennsylvania? (please check answer)

_____ YES _____ NO

If NO, please return the questionnaire in the enclosed envelope with our thanks for your cooperation.

If YES, please continue.

2. Please indicate the total number of separate School Districts and the total numbers of each type of school in all the Districts combined to which your firm itself actually makes deliveries of milk:

Number of School Districts	Numbers of individual school buildings -----by type, to which you deliver milk-----			
	Elem-entary	Junior High	Senior High	Total, All Types
_____	_____	_____	_____	_____

3. What brand name(s) or processor's label(s) appear on the milk cartons you deliver to these schools? (please list)

_____ brand or label
_____ brand or label
_____ brand or label

4. Please give the number of individual school buildings to which you deliver milk, for each of the following delivery frequencies. (If there are none in a given category, please write NONE. The combined total should be the same as the combined total number of all types of school buildings in Question 2.)

<u>Number of School Buildings</u>	<u>Delivery Frequency</u>
_____	Once a week
_____	Twice a week
_____	Three times a week
_____	Four times a week
_____	Five times a week (daily)

5. Please give the number of school buildings to which you deliver milk, for each of the following times of the day. (If there are none in a given category, please write NONE. Again, the combined totals should be the same as that of Question 2)

<u>Number of School Buildings</u>	<u>Time of Delivery</u>
_____	Early morning (before 8 o'clock)
_____	Mid-morning (between 8 and 10 o'clock)
_____	Late morning (between 10 and 12 o'clock)
_____	In the afternoon (after 12 o'clock)
_____	Varies, no set schedule
_____	Other (please describe)
	(_____)

6. What **non-dairy** fluid products (e. g. iced tea, fruit juices or drinks, etc.) do you regularly deliver to the schools that receive milk from you? (please list -- if None, write NONE)

_____	_____
_____	_____
_____	_____

7. What other **dairy** products (e. g. cottage cheese, ice cream, butter, etc.) do you also regularly deliver to these schools? (please list -- if None, write NONE)

_____	_____
_____	_____
_____	_____

8. For how many school buildings do you provide each of the delivery services indicated below? (If there are none in a given category, please write NONE. The combined total in all categories should again be the same as in Question 2)

<u>Number of School Buildings</u>	<u>Type of Service</u>
_____	Place milk on the receiving dock
_____	Put milk in the cafeteria cooler
_____	Put milk directly on serving line
_____	(Other, please describe below)
_____	_____
_____	_____
_____	_____

9. Is your contract price or agreement to provide milk to schools usually just equal to the Pennsylvania Milk Marketing Board's required minimum price or somewhat above the required minimum price? (please check answer)

_____ Usually at the minimum price
_____ Usually somewhat above the minimum price

10. Are payments by the schools generally made to you on what you consider to be a timely basis? (please check answer)

_____ YES _____ NO

11. What concerns do you have with respect to the way schools handle, store, or serve the milk you deliver to them? (please describe)

12. Other than to correct the things you said you were concerned about in Question 11 above, what ideas do you have for increasing the consumption of milk in the schools you serve? (please elaborate)

Our names and phone numbers appear on the inside of the front cover of this survey. Please do not hesitate to call for an explanation or elaboration of any matter pertaining to the survey.

In case we need clarification of any of your answers, your name and phone number would be most helpful. Providing these, of course, is strictly optional on your part, but we hope you choose to do so.

Your name _____

Your Phone number _____

Please return the survey form in the enclosed, stamped, self-addressed envelop that we have provided.

We will send you a summary of the results as soon as our analysis is completed, but please again be assured your individual responses will be held in the strictest confidence.

THANK YOU SO MUCH FOR YOUR COOPERATION!

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