

# **The Federal School Lunch and Special Milk Program in Tennessee**

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**with implications for the dairy industry**

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## Summary

- Federal legislation, particularly the National School Lunch Act of 1946 and the Agricultural Act of 1954, has provided large annual appropriations for school lunches and milk for school children. For the year ending June 30, 1960, the total federal aid under these two programs amounted to over \$235 million. Almost \$4 million of this was allocated to operate these federal programs in Tennessee.
- Nationwide, an estimated 1.8 percent of the total milk supply moved into the school milk market. In Tennessee, approximately 5.7 percent of all grade A milk sold for fluid use was marketed through schools in 1960.
- By March 1960, over 80 percent of Tennessee schools with 94.4 percent of the State's public school students took part in one or both of the federal programs.
- Students in schools under both the National School Lunch and Special Milk Program consumed about 45 percent more milk per capita per day than those under only one of these programs.
- Larger Tennessee schools had lower milk consumption rates than smaller schools.
- Participation by colored schools was less than by white schools and their daily milk consumption rates per student were lower.
- Examination of schools with consistently high milk consumption records indicated the importance of frequent servings and teacher interest among the factors increasing milk consumption in schools.
- Further expansion is likely to occur in the school milk market in Tennessee as enrollments continue to increase, as new schools are constructed with cafeteria facilities, and as cafeterias are added to existing schools.
- The policies of the federal school lunch and milk programs have benefited both Tennessee dairy farmers and Tennessee young people. Suggested courses of action for federal, state and local administrators and dairy processors and distributors are presented in this report as ways to promote an even more effective school lunch and milk program in Tennessee.

## **ACKNOWLEDGMENT**

The authors of this bulletin wish to acknowledge the cooperation of the State Department of Education school lunch staff for assembling much of the basic data used in this report. Appreciation should be expressed especially to Mr. Lawrence Bartlett, State Supervisor of the School Lunch Program who read and commented on an early draft of this manuscript. The principals of the six case study schools also supplied many valuable ideas on milk promotion in Tennessee public schools.

**FRONT COVER:** This photo is by the courtesy of Mrs. Emma D. Gillum, School Lunch Supervisor of Marshall County Schools. The photograph was taken at Farmington Elementary School, Marshall County, one of the high milk consumption case study schools analyzed in this bulletin.

# TABLE OF CONTENTS

|                                                                | <i>Page</i> |
|----------------------------------------------------------------|-------------|
| SUMMARY .....                                                  | 2           |
| INTRODUCTION .....                                             | 5           |
| Justification and Scope .....                                  | 5           |
| Objectives and Procedure .....                                 | 5           |
| FEDERAL SCHOOL LUNCH AND MILK PROGRAMS.....                    | 6           |
| Legislation and Development .....                              | 6           |
| Current Role of Federal Agencies.....                          | 8           |
| Congressional Objectives .....                                 | 9           |
| TENNESSEE EXPERIENCE WITH FEDERAL SCHOOL LUNCH AND             |             |
| MILK PROGRAMS.....                                             | 15          |
| Importance to Tennessee Dairy Industry .....                   | 15          |
| Rate of Participation by Tennessee Schools and Students.....   | 15          |
| PER CAPITA CONSUMPTION OF MILK IN TENNESSEE SCHOOLS.....       | 18          |
| By Size of School and Area.....                                | 18          |
| By Type of Program .....                                       | 19          |
| By White and Colored Schools .....                             | 21          |
| By Grade Level of School .....                                 | 23          |
| Case Study of Schools with High Milk Consumption.....          | 24          |
| MARKET POTENTIAL FOR MILK IN SCHOOLS .....                     | 25          |
| Factors Related to the Expansion of the School Milk Market.... | 25          |
| Increased School Enrollment .....                              | 25          |
| Public School Construction .....                               | 27          |
| Per Capita Consumption Rates .....                             | 29          |
| Possible Ways of Increasing Milk Consumption in Schools.....   | 29          |
| Courses of Action by Federal Government.....                   | 29          |
| Suggested Changes in the State Program .....                   | 30          |
| Suggestions for Local Schools .....                            | 30          |
| Possible Dairy Industry Management Action .....                | 31          |
| APPENDIX .....                                                 | 32          |

# **The Federal School Lunch and Special Milk Program In Tennessee**

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## **INTRODUCTION**

**Justification and Scope:** In recent years, the United States has had a surplus of dairy products in normal channels of trade. Since 1950, the purchases of dairy products by the United States Department of Agriculture have ranged from 12 million pounds of milk equivalent in 1951 to over 10 billion pounds in 1953. The average annual purchase of surplus milk equivalent for the period 1950-1960 was 4.6 billion pounds.<sup>1</sup> The encouragement of milk consumption in the school market has been an effective means of moving large quantities of milk to a constructive yet noncompetitive use. In 1960, 2.5 billion pounds were consumed in schools under the National School Lunch and Special Milk Program.<sup>2</sup>

The influence of these federal programs on the Tennessee dairy industry and their future implications were not known. However, information on the federal school lunch and milk programs in Tennessee would be an aid to marketing decision-making and a guide to action for Tennessee school administrators, dairy distributors and dairy farmers. Some results of this study would also be useful to school lunch program administrators in other states and to the United States Department of Agriculture, which is responsible for administering the program nationally.

**Objectives and Procedure:** The objectives of this project were:

1. To summarize information about the legislation, policy, and development of federal school lunch and milk programs.
2. To determine the extent of these federal school lunch and milk programs in Tennessee.

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<sup>1</sup>The Dairy Situation, AMS, U. S. Department of Agriculture, DS-282, February 1961, p. 26.

<sup>2</sup>Ibid, p. 27.

3. To analyze the consumption rates for milk in Tennessee schools under different programs and in schools with variant characteristics.
4. To develop suggestions for expanding milk consumption in Tennessee schools.

The data needed for meeting these objectives were obtained largely from State Department of Education records as summarized by the Tennessee Agricultural Experiment Station. These data for all public elementary and secondary schools serving milk were available for March each year from 1954 through 1960. This provided a unique opportunity to analyze data before and after the inception of the federal Special Milk Program. Supplemental national statistics on the school lunch and milk program were obtained from the United States Department of Agriculture and selected information was obtained from a case study of six Tennessee schools with high per capita milk consumption rates.

## **Federal School Lunch and Milk Programs**

**Legislation and Development:** Federal participation in the school lunch program is not new. In 1932 and 1933, loans from the Reconstruction Finance Corporation enabled several towns in southwestern Missouri to prepare and serve school lunches. Federal activity in school lunch programs was expanded in late 1933 and early 1934 under the Civil Works Administration, and in 1934 and 1935 under the Federal Emergency Relief Administration.<sup>3</sup> Under the Works Progress Administration, beginning in 1935, the school lunch function was assigned as a permanent part of the duties of the Division of Professional and Service Projects.<sup>4</sup>

In 1935, Congress enacted legislation with the objective of expanding outlets for surplus agricultural commodities as one means of strengthening farm prices.<sup>5</sup> Section 32 of this act was designed to encourage domestic consumption of surplus agricultural commodities. Still in effect, Section 32 legislation allows the Department of Agriculture to buy surplus agricultural commodities (including dairy products) from farmers, cooperatives, and processors or from Commodity Credit Corporation stocks.

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<sup>3</sup>Southworth, H. M. and Klayman, M. I., "The School Lunch Program and Agricultural Surplus Disposal," United States Department of Agricultural Misc. Publication 467, October, 1941, p. 15.

<sup>4</sup>*Ibid.*

<sup>5</sup>Agricultural Adjustment Act of 1935 Public Law 329, 74th Congress, August 24, 1935.

These commodities are then donated through the facilities of state distributing agencies to eligible recipients. Among the eligible groups are public or nonprofit private schools of high school grade or under, which operate nonprofit school lunch programs.

The source of Section 32 funds is from continuing annual appropriations equal to 30 percent of custom receipts. There have also been supplemental appropriations to carry out Section 32 purposes.<sup>6</sup> From fiscal year ending June 30, 1952 through 1959, expenditures on dairy products from Section 32 appropriations totaled \$470 million (Table 1).

During the first 7 years (1935-42) the school food program was handled by direct distribution of foods purchased under price support programs. In the spring of 1943, when the volume of surplus foods was reduced, the Department of Agriculture inaugurated a cash reimbursement program under Section 32 to pay for a part of the food purchased locally for the school lunch program.<sup>7</sup>

In 1944, Congress authorized a specific amount of Section 32 funds for the operation of school lunch and penny milk pro-

<sup>6</sup>**Price Programs**, Information Bulletin No. 135, U. S. Department of Agriculture, U. S. Government Printing Office, 1957, p. 33.

<sup>7</sup>**Food, The Yearbook of Agriculture**, 1959, U. S. Department of Agriculture, Washington, D. C., p. 694.

**Table 1. Federal Funds Available and Expended under Section 32 for Dairy and Other Products, Fiscal Years Ending June 30, 1951-60<sup>a</sup>.**

| Fiscal<br>year<br>ending<br>June 30 | 30 percent<br>of custom<br>receipts | Supplemental<br>and reappro-<br>priations | Net funds<br>available for<br>Section 32<br>purposes <sup>b</sup> | Expenditures for school lunches<br>and other approved uses |                   |
|-------------------------------------|-------------------------------------|-------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------|-------------------|
|                                     |                                     |                                           |                                                                   | Dairy<br>products                                          | Other<br>products |
| Millions of dollars                 |                                     |                                           |                                                                   |                                                            |                   |
| 1951                                | 111.2                               | 48.0                                      | 158.8                                                             | —                                                          | 37.6              |
| 1952                                | 158.9                               | 117.5                                     | 276.2                                                             | 4.2                                                        | 47.0              |
| 1953                                | 181.0                               | 222.0                                     | 402.8                                                             | 21.8                                                       | 46.7              |
| 1954                                | 172.4                               | 303.9                                     | 474.5                                                             | 87.1                                                       | 111.4             |
| 1955                                | 180.1                               | 272.4                                     | 448.0                                                             | 0.4                                                        | 28.0              |
| 1956                                | 166.8                               | 301.4                                     | 463.8                                                             | 78.3                                                       | 135.3             |
| 1957                                | 200.0                               | 245.5                                     | 441.1                                                             | 54.9                                                       | 80.8              |
| 1958                                | 220.9                               | 300.0                                     | 516.2                                                             | 121.7                                                      | 4.4               |
| 1959                                | 235.9                               | 300.5                                     | 496.7                                                             | 101.2                                                      | 16.1              |
| 1960                                | 251.4                               | 300.0                                     | n. a.                                                             | -----                                                      | -----             |

<sup>a</sup>**Dairy Situation**, AMS, United States Department of Agriculture DS-276, February, 1960, p. 36.

<sup>b</sup>Sum of columns (1) and (2) less any transfers of legislative action to other uses.

grams without regard to the existence of a surplus.<sup>8</sup> These programs received only year-to-year authorization until 1946. The National School Lunch Act was passed then to provide assistance to the states in the establishment, maintenance, operation, and expansion of the school lunch program.<sup>9</sup> Section 6 of this act provides for direct federal expenditure for acquisition and distribution of food to school lunch programs. The balance of the funds are used to reimburse participating schools for a part of the cost of local food purchases. Federal administrative expenses are also financed out of the appropriation.

The next important legislation concerning school food distribution was part of the Agricultural Act of 1949. Section 416 of this act provides authority for direct distribution of commodities acquired by the Commodity Credit Corporation under price-support programs (thus supplementing Section 32 in surplus removal).<sup>10</sup> Under this act, if surplus commodities cannot be sold or bartered for strategic materials, they may be donated to school lunch programs and other eligible outlets in this country; an excess above domestic needs may be donated to needy persons overseas.

In 1954, Congress provided for the use of the Commodity Credit Corporation's funds to increase milk consumption. This Special Milk Program was started in September, 1954, with an initial \$50 million annual appropriation.<sup>11</sup> Renewals of the authority have increased the funds available to the program up to \$95 million for the fiscal year ending June 30, 1961.<sup>12</sup>

**Current Role of Federal Agencies:** Currently the federal government's food distribution activities to schools include 1) **The National School Lunch Program**, which assists schools to operate nonprofit lunch programs;<sup>13</sup> 2) **The Special Milk Program**, designed to increase the consumption of milk by children in schools;<sup>14</sup> and 3) **Direct Distribution**, whereby surplus foods ac-

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<sup>8</sup>Ibid.

<sup>9</sup>National School Lunch Act, Public Law 396, 79th Congress, June 4, 1946.

<sup>10</sup>Section 416, The Agricultural Act of 1949, Public Law 439, 81st Congress, October 31, 1949.

<sup>11</sup>The Agricultural Act of 1954, Public Law 690, 83rd Congress, August 28, 1954.

<sup>12</sup>**Compilation of Statutes Relating to** (selected agricultural programs), Agriculture Handbook No. 192, Commodity Stabilization Service, United States Department of Agriculture, January 1, 1961, p. 185.

<sup>13</sup>For an outline of the National School Lunch Program, see **The National Food Situation**, AMS, United States Department of Agriculture, May, 1955, pp. 20-23.

<sup>14</sup>The Special Milk Program is analyzed in some detail in **The National Food Situation**, AMS, United States Department of Agriculture, February 1956, pp. 22-24.

quired by the Department of Agriculture are moved into consumption channels by making them available to nonprofit schools, along with other eligible recipients.<sup>15</sup> Table 2 summarizes the history of these currently operative programs in terms of quantities distributed and cost of the program to the federal government. Over \$34 million was spent by the federal government on all school food programs for the fiscal year ending June 30, 1944. This increased to \$306 million for the year ending June 30, 1960, or nine times the 1944 amount. In addition to these federal funds, state and local funds are also used in the school lunch and milk programs, and students who are able pay a nominal price for their meals.

The most important single food item in schools, from a value standpoint, was fluid whole milk; it accounted for almost one-third of the school food dollar.<sup>16</sup> Quantity wise, the National School Lunch Program and Special Milk Program used about 2.3 billion pounds of milk, or 1.8 percent of the total 1959 milk supply of about 129 billion pounds (Figure 1). On a per capita basis, the National School Lunch Program now amounts to about 6.6 pounds per person, while the Special Milk Program in 1960 was at 7.4 pounds per person (Table 3). With increasing school enrollments and with the probable continued increase in funds, further expansion is likely in both of these programs in the years ahead.

**Congressional Objectives:** At least three congressional policies may be observed in the legislation relating to the school lunch programs: 1) The legislation was designed in each case to help remove surplus agricultural commodities from the commercial market, and to distribute these surplus commodities to useful yet noncompeting institutional markets.<sup>17</sup> 2) The contribution of the program to the nation's health and future security has also been an important part of congressional policy. Both policy one and two may be noted in the National School Lunch Act:

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<sup>15</sup>Direct Distribution Programs of the Department of Agriculture are covered in **The National Food Situation**, AMS, U. S. Department of Agriculture, November, 1955, pp. 21-25.

<sup>16</sup>Based on the period July 1957 through June 1958, **The Market for Food in Public Schools**, Kenneth E. Anderson and William S. Hoofnagle, Marketing Research Report No. 377, U. S. Department of Agriculture, January, 1960, p. 1.

<sup>17</sup>Milk of grade A quality is under federal milk order regulation in most major milk markets. Such orders include administratively-set producer prices according to use. Producer gain comes from a higher blend price resulting from the shift of milk from class II (manufactured use) to class I (fluid use) as the demand curve for fluid use is shifted to the right by adding the school milk program.

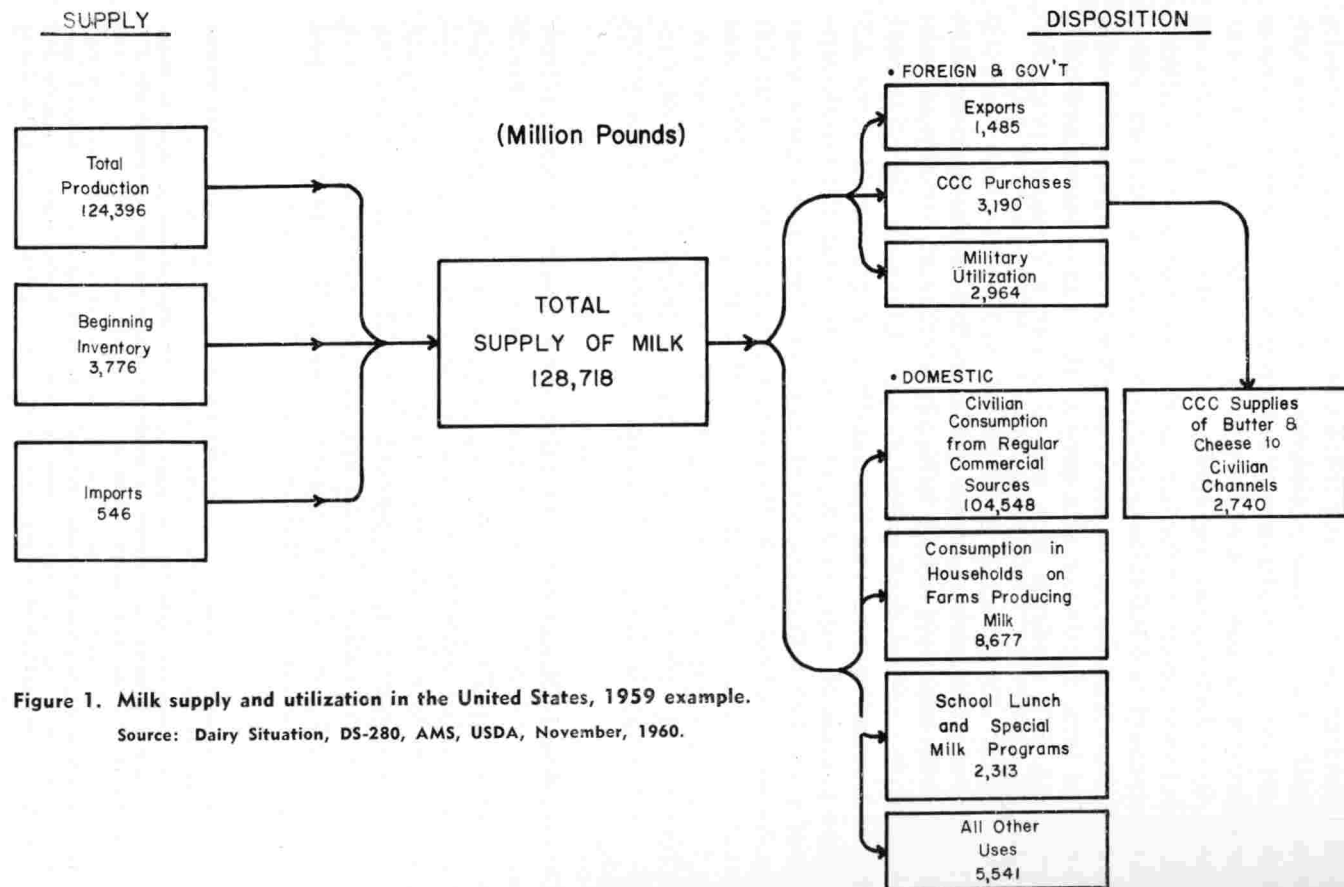


Figure 1. Milk supply and utilization in the United States, 1959 example.

Source: Dairy Situation, DS-280, AMS, USDA, November, 1960.

**Table 2. Federal Food Distribution Through Schools: Quantity and Cost of Federal Assistance to School Lunch and Special Milk Programs, Fiscal Year ending June 30, 1944-60<sup>a</sup>**  
(000 omitted)

| Fiscal<br>year<br>ending<br>June 30 | School lunch (all foods)       |                            |          |                        |          | Special milk<br>program <sup>c</sup> |          |
|-------------------------------------|--------------------------------|----------------------------|----------|------------------------|----------|--------------------------------------|----------|
|                                     | Indemnity<br>plan <sup>b</sup> | Direct distribution under— |          |                        |          |                                      |          |
|                                     |                                | Section 32 <sup>c</sup>    |          | Section 6 <sup>d</sup> |          |                                      |          |
|                                     |                                | Cost                       | Quantity | Cost <sup>f</sup>      | Quantity | Cost <sup>f</sup>                    | Quantity |
|                                     | \$                             | Lbs.                       | \$       | Lbs.                   | \$       | ½-Pts.                               | \$       |
| 1944                                | 26,585                         | 92,776                     | 7,814    | -----                  | -----    | -----                                | -----    |
| 1945                                | 41,613                         | 94,390                     | 5,796    | -----                  | -----    | -----                                | -----    |
| 1946                                | 51,290                         | 76,622                     | 5,834    | -----                  | -----    | -----                                | -----    |
| 1947                                | 59,872                         | 111,242                    | 2,313    | 40,108                 | 5,735    | -----                                | -----    |
| 1948                                | 53,983                         | 202,665                    | 19,341   | 80,649                 | 13,438   | -----                                | -----    |
| 1949                                | 58,767                         | 218,917                    | 21,550   | 67,438                 | 14,475   | -----                                | -----    |
| 1950                                | 64,537                         | 346,450                    | 38,505   | 120,268                | 16,684   | -----                                | -----    |
| 1951                                | 68,166                         | 327,047                    | 34,836   | 78,293                 | 15,089   | -----                                | -----    |
| 1952                                | 66,300                         | 98,854                     | 16,583   | 97,933                 | 15,590   | -----                                | -----    |
| 1953                                | 67,110                         | 116,956                    | 51,724   | 84,186                 | 14,744   | -----                                | -----    |
| 1954                                | 67,266                         | 245,988                    | 94,218   | 105,489                | 14,826   | -----                                | -----    |
| 1955                                | 69,142                         | 195,756                    | 70,306   | 101,890                | 12,830   | 449,810                              | 17,150   |
| 1956                                | 67,146                         | 264,691                    | 99,946   | 87,453                 | 14,802   | 1,394,224                            | 45,854   |
| 1957                                | 83,915                         | 417,633                    | 131,972  | 111,397                | 14,660   | 1,752,680                            | 60,473   |
| 1958                                | 83,830                         | 241,742                    | 75,962   | 89,374                 | 14,802   | 1,918,170                            | 66,321   |
| 1959                                | 93,890                         | 249,642                    | 66,822   | 203,839                | 42,670   | 2,176,158                            | 74,285   |
| 1960                                | 93,814                         | 264,408                    | 70,916   | 259,064                | 61,109   | 2,394,829                            | 80,480   |

<sup>a</sup>**Agricultural Statistics**, United States Department of Agriculture, 1957, p. 695; 1959, p. 584. Data for 1960 from Program Analysis and Development Branch, Food Distribution Division.

<sup>b</sup>Program started February 8, 1943, under authority of section 32 (see footnote c). It has been financed by National School Lunch Act funds since 1947. Sponsors of school lunch programs are reimbursed by the government for local purchases of food on the basis of the quality and quantity of meals served. Total cost in subsidy payments by the government does not include administration costs of the program.

<sup>c</sup>Section 32, Public Law 329, 74th Congress, August 24, 1935, as amended. Beginning in 1949, data include Commodity Credit Corporation commodities distributed pursuant to Section 416, Public Law 439, 81st Congress approved October 31, 1949.

<sup>d</sup>Section 6 of the National School Lunch Act, Public Law 396, 79th Congress approved June 4, 1946.

<sup>e</sup>The Agricultural Act of 1954, Public Law 690, 83rd Congress, August 28, 1954 as amended. The program was initiated in September, 1954.

<sup>f</sup>Total cost to the government of the commodity as delivered to the distributing agency; includes cost of purchase, handling, warehousing, and transportation, but does not include costs of administering the program.

"It is hereby declared to be the policy of Congress, as a measure of national security, to safeguard the health and well being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food, by assisting the States through grants-in-aid and other means, in providing an adequate supply of foods and other facilities for the establishment,

maintenance, operation, and expansion of nonprofit school-lunch programs.”<sup>18</sup>

The policy to contribute to the public welfare through better nutrition for the nation's children may very well have become the most important reason for continuing the school lunch programs.

**Table 3. Relationship Between Milk Utilization Under the National School Lunch Program and the Special Milk Program in the United States, 1953-60<sup>a</sup>.**

| Calendar year     | Milk utilization under federal school programs |              |                       |              |
|-------------------|------------------------------------------------|--------------|-----------------------|--------------|
|                   | Total                                          |              | Per capita            |              |
|                   | National school lunch                          | Special milk | National school lunch | Special milk |
|                   | Million pounds                                 |              | Pounds                |              |
| 1953              | 820                                            | -----        | 5.3                   | ----         |
| 1954              | 893                                            | 49           | 5.6                   | 0.3          |
| 1955              | 933                                            | 489          | 5.7                   | 3.0          |
| 1956              | 927                                            | 840          | 5.6                   | 5.1          |
| 1957              | 967                                            | 984          | 5.7                   | 5.8          |
| 1958              | 1,039                                          | 1,108        | 6.1                   | 6.5          |
| 1959 <sup>b</sup> | 1,103                                          | 1,210        | 6.3                   | 6.9          |
| 1960 <sup>b</sup> | 1,166                                          | 1,304        | 6.6                   | 7.4          |

<sup>a</sup>"Dairy Situation," DS 282, AMS, United States Department of Agriculture, February, 1961, p. 27.

<sup>b</sup>Preliminary.

While many of the early programs were temporary measures, recent legislation has been of a more permanent nature. Both the National School Lunch Program and the Special Milk Program derive their own direct appropriations from Congress and are not attachments to price support programs, although special milk appropriations are earmarked from Commodity Credit Corporation funds. Recent congressional policy would seem to assure continuance of school lunch and milk programs whether farmers need price supports or not. 3) There has been increasing emphasis placed on programs designed to expand food markets and consumption through normal channels of trade, such as activities that increase the purchases of dairy products in local markets through regular commercial wholesale and retail channels.<sup>19</sup> Ex-

<sup>18</sup>United States Statutes at Large, Vol. 60, Public Law 396, p. 230. Government Printing Office, Washington, D. C., 1947 (Act passed June 4, 1946).

<sup>19</sup>"A Study of Alternative Methods for Controlling Farm Milk Production and Supporting Prices to Farmers for Milk and Butterfat", House Document No. 57, 84th Congress, United States Government Printing Office, Washington, 1955, p. 71.

penditures under the National School Lunch Program and the Special Milk Program largely follow this policy.

The federal school food programs appear to be accomplishing these three policy objectives. The serving of well-balanced school lunches is helping to improve the diets of many of our school children. At the same time these programs are helping farmers by creating a larger market for milk and other products in normal channels of trade through local purchases,<sup>20</sup> and providing a constructive outlet for milk products and other surplus commodities acquired by the Department of Agriculture.

Such milk sales through schools are not all increased sales over what might be marketed without a subsidy program. However, a recent U. S. Department of Agriculture report, based on a market survey in the Northeast, presents evidence which indicated that children in Special Milk Program schools drank about one-third more milk while at school than did children in nonparticipating schools.<sup>21</sup> Both groups drank about the same amount at

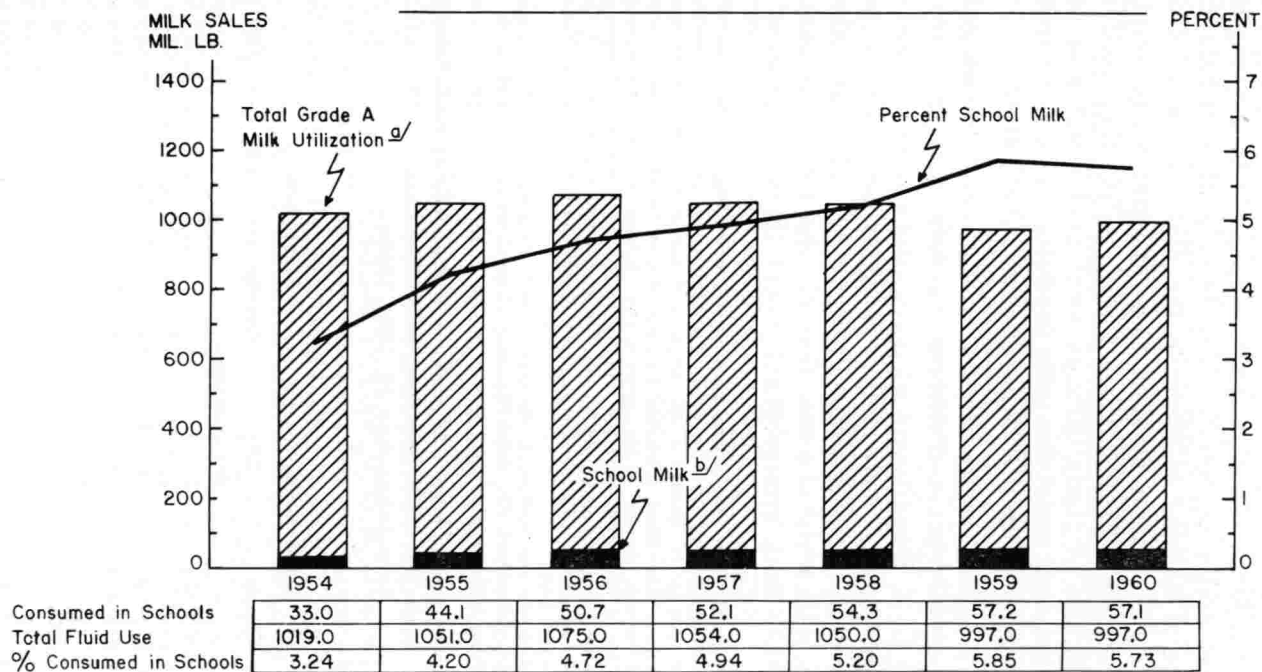
<sup>20</sup>In reference to local milk purchases, the school lunch program may provide a case where it is possible and profitable for a milk dealer to maintain a two-price policy for his product—charging a different price for his product in the school milk market from that in his regular milk market. This price discrimination is possible and profitable as the dealer equates marginal revenues in the two markets because 1) the dealer is able to keep the two markets apart—milk sales in lower-priced market do not flow into the higher-priced market; 2) neither is there pressure from the higher-priced market against the lower-priced market (few will speak against providing low-cost milk to school age children), and 3) the elasticities of demand between the two markets probably differ.

<sup>21</sup>Kenneth E. Anderson and William S. Hoofnagle, "Milk Consumption at School and at Home in Relation to Special Milk Program," Marketing Research Report No. 408, U. S. Department of Agriculture, June, 1960, p. 6.

**Table 4. Receipts From the Federal Government for Operation of Public School Lunch and Special Milk Programs in Tennessee  
Years Ending June 30, 1954-1960<sup>a</sup>.**

| School<br>year<br>ending<br>June 30 | School lunch    |           | School milk |           | Total      |
|-------------------------------------|-----------------|-----------|-------------|-----------|------------|
|                                     | County          | City      | County      | City      |            |
|                                     | Dollar receipts |           |             |           |            |
| 1954                                | 1,968,453       | 430,112   |             |           | 2,398,565  |
| 1955                                | 1,814,722       | 424,183   | 537,456     | 142,743   | 2,919,104  |
| 1956                                | 1,637,242       | 595,225   | 737,027     | 283,072   | 3,252,566  |
| 1957                                | 1,816,969       | 614,617   | 763,109     | 358,932   | 3,553,627  |
| 1958                                | 1,949,060       | 583,122   | 854,120     | 509,405   | 3,895,707  |
| 1959                                | 2,022,643       | 610,158   | 981,738     | 494,251   | 4,108,790  |
| 1960                                | 1,895,400       | 575,178   | 965,904     | 498,037   | 3,934,519  |
| 1954-1960                           | 13,104,489      | 3,832,595 | 4,839,354   | 2,286,440 | 24,062,878 |

<sup>a</sup>"Annual Statistical Report of the Department of Education" State of Tennessee.



<sup>a/</sup>Estimated total annual Tennessee milk going into fluid use.

<sup>b/</sup>Estimate derived from March data on all schools serving milk.

**Figure 2. Estimated percent of annual Tennessee Grade A milk utilization consumed in schools under the National School Lunch and Special Milk Program, 1954-1960.**

home. Perhaps more important, but even more difficult to measure, is the effect of the school lunch and the milk programs on the future health of the nation's school children and the long-run effect of the programs on developing good eating habits among participants.<sup>22</sup>

## **Tennessee Experience with Federal School Lunch and Milk Programs**

**Importance to Tennessee Dairy Industry:** The school milk program is becoming an increasingly important market for fluid milk in Tennessee. In 1960, Tennessee school milk consumption equaled an estimated 5.7 percent of the state's annual fluid milk consumption compared with an estimated 3.2 percent in 1954 (Figure 2).

Another indicator of the importance of the federal food programs in Tennessee schools is the amount of money received from the federal government to aid these programs. The combined National School Lunch and Special School Milk funds received by public schools in Tennessee ranged from a total of \$2.4 million in the 1953-54 school year to about \$3.9 million in the 1959-60 school year (Table 4). These represent cash receipts for local purchases. In addition, certain surplus commodities were donated to eligible schools.

**Rate of Participation by Tennessee Schools and Students:** Data collected by the United States Department of Agriculture enable the proportions of schools serving milk in Tennessee with those of the nation and selected regions to be compared. Tennessee, with 73 percent of its schools serving milk, ranked slightly below the United States average of 74.2 percent participation in March 1957, and below the 81.4 percent participation for the entire Southeast region (Table 5).

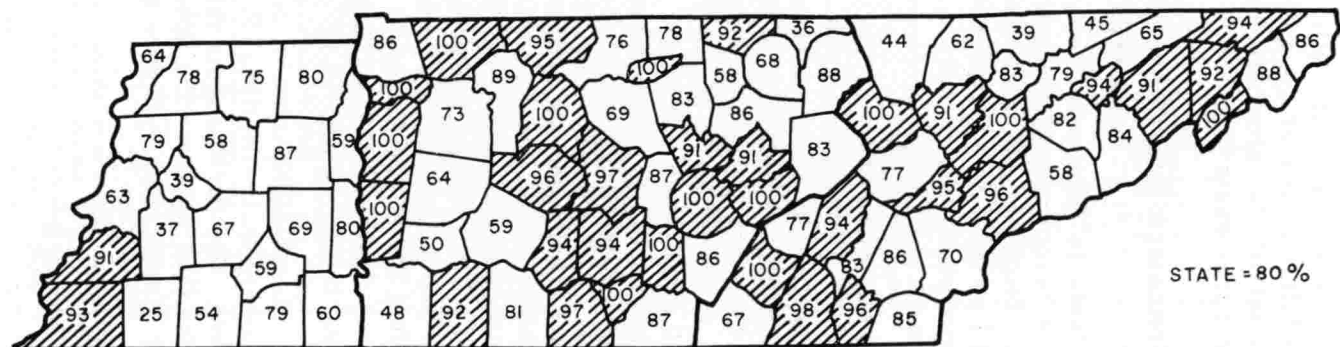
By March 1960, over 80 percent of Tennessee schools were participating in the National School Lunch and/or Special Milk Programs. The participation rate by county is shown for March 1955, the first full year the Special Milk Program was in effect, and for March 1960 in Figure 3. High participation counties of

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<sup>22</sup>This raises a question as to whether the school lunch and special milk programs are a subsidy to farmers or to consumers. A recent release by the Joint Economic Committee of Congress credits the subsidy to consumers. "Food distributed in the national school lunch program . . . would certainly seem to subsidize the consumers of this food more than its producers." "Subsidy and Subsidylike Programs of the U. S. Government," 86th Congress, 2nd Session, U. S. Government Printing Office, Washington, D. C., 1960, p. 35.

MARCH 1955

 90% or over participation



STATE = 80 %

MARCH 1960

Figure 3. Percent of Tennessee schools participating in National School Lunch and/or Special Milk Program, by counties, March, 1955 and 1960.

**Table 5. Relation of Schools Serving Milk to All Schools, United States, Major Regions, and Tennessee, March 1957<sup>a</sup>.**

| Location            | Total schools      | Schools serving milk |                  |
|---------------------|--------------------|----------------------|------------------|
|                     | No.                | No.                  | % of all schools |
| United States ..... | 105,966            | 78,624               | 74.2             |
| Northeast .....     | 21,105             | 17,450               | 82.7             |
| Southeast .....     | 20,204             | 16,450               | 81.4             |
| Midwest .....       | 37,556             | 23,617               | 62.9             |
| Southwest .....     | 15,403             | 11,845               | 76.9             |
| West .....          | 11,698             | 9,262                | 79.2             |
| TENNESSEE .....     | 3,283 <sup>b</sup> | 2,397 <sup>c</sup>   | 73.0             |

<sup>a</sup>Anderson, Kenneth E., "Milk Consumption in the Nation's Schools," Marketing Research Report No. 284, November, 1958, AMS, United States Department of Agriculture, pp. 13-14.

<sup>b</sup>"Annual Statistical Report of the Department of Education," State of Tennessee, year ending June 30, 1957.

<sup>c</sup>Downen, M. Lloyd, "Milk Consumption in Tennessee Schools, March, 1957," Agricultural Economics Circular 1, Department of Agricultural Economics and Rural Sociology, University of Tennessee, Knoxville.

over 90 percent are shaded for comparison purposes.

The school lunch and milk program is actually of greater importance than school participation data would indicate. Table 6 shows that while in March, 1960, 80 percent of the schools shared in the school lunch and/or milk program, these schools accounted for over 94 percent of the total students. The high proportion of students in schools serving milk is mainly because of the tendency for larger schools to take part in the federal food

**Table 6. Number and Percentage of Schools Serving Milk and Children Attending Schools that Served Milk, Tennessee, March, 1954-March, 1960.**

| School year ending June 30 | Public schools     |                           |                         | Average daily attendance |                                      | Proportion of all students in schools serving milk |
|----------------------------|--------------------|---------------------------|-------------------------|--------------------------|--------------------------------------|----------------------------------------------------|
|                            | Total <sup>a</sup> | Serving milk <sup>b</sup> | Proportion serving milk | all schools <sup>a</sup> | in schools <sup>a</sup> serving milk |                                                    |
|                            | No.                | No.                       | %                       | No.                      | No.                                  | %                                                  |
| 1954                       | 3654               | 1942                      | 53.1                    | 639,569                  | 523,069                              | 81.8                                               |
| 1955                       | 3511               | 2280                      | 64.9                    | 663,738                  | 595,943                              | 89.8                                               |
| 1956                       | 3372               | 2417                      | 71.7                    | 677,816                  | 640,623                              | 94.5                                               |
| 1957                       | 3283               | 2397                      | 73.0                    | 690,674                  | 643,715                              | 93.2                                               |
| 1958                       | 3119               | 2353                      | 75.4                    | 694,627                  | 656,281                              | 94.5                                               |
| 1959                       | 2939               | 2321                      | 79.0                    | 724,033                  | 677,292                              | 93.5                                               |
| 1960                       | 2815               | 2254                      | 80.0                    | 735,660                  | 694,453                              | 94.4                                               |

<sup>a</sup>Based on annual averages. "Annual Statistical Report of the Department of Education," State of Tennessee.

<sup>b</sup>Downen, M. Lloyd, "Milk Consumption in Tennessee Schools," annual circular, Department of Agricultural Economics and Rural Sociology, University of Tennessee, Knoxville.

programs. These larger schools have a high proportion of the State's students. Figure 4 indicates that while only 14 percent of Tennessee schools serving milk have 600 or more pupils in average daily attendance, these schools account for 39 percent of the students.

#### SIZE OF SCHOOLS SERVING MILK

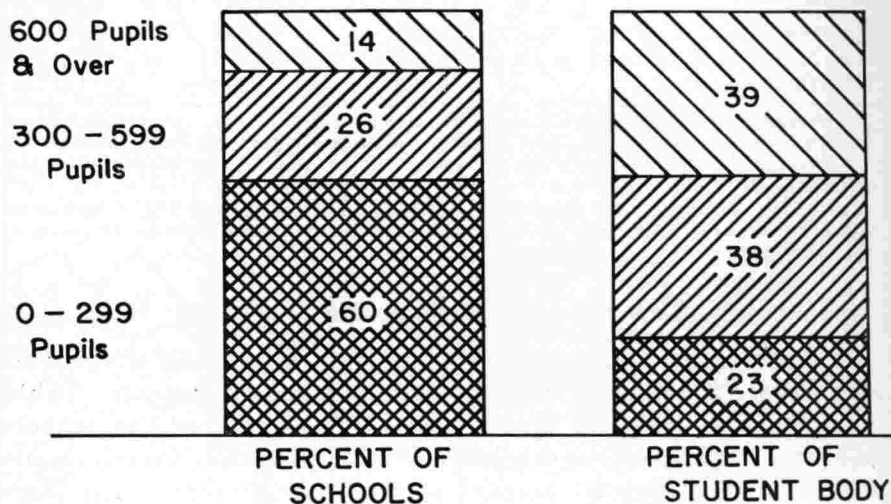


Figure 4. Relationship between size of school, number of schools, and students in attendance in schools serving milk, Tennessee, March, 1960.

### Per Capita Consumption of Milk in Tennessee Schools

**By Size of School and Area:** Students in larger schools tend to have lower per capita milk consumption rates than those in small schools. In March 1960, schools under 300 pupils in average daily attendance had average per capita consumption rates slightly over one-half pint per student per day. At the other extreme, schools with 1000 pupils or more consumed an average of only 0.58 half-pints of milk per student per day (Figure 5).

Area variation in per capita school milk consumption rates are shown in Figure 6 for March 1954 and March 1960. These maps allow comparison of milk consumption per student for 1960 with 1954 or 1 year before the Special Milk Program began operating. State average daily consumption rates increased from 0.67 half-pints per student in 1954 to 0.88 half-pints in 1960. While only two counties had per capita consumption rates of

# SIZE OF SCHOOL

(average daily att.)

0 - 99

100 - 199

200 - 299

300 - 399

400 - 499

500 - 599

600 - 699

700 - 799

800 - 899

900 - 999

1,000 & Over

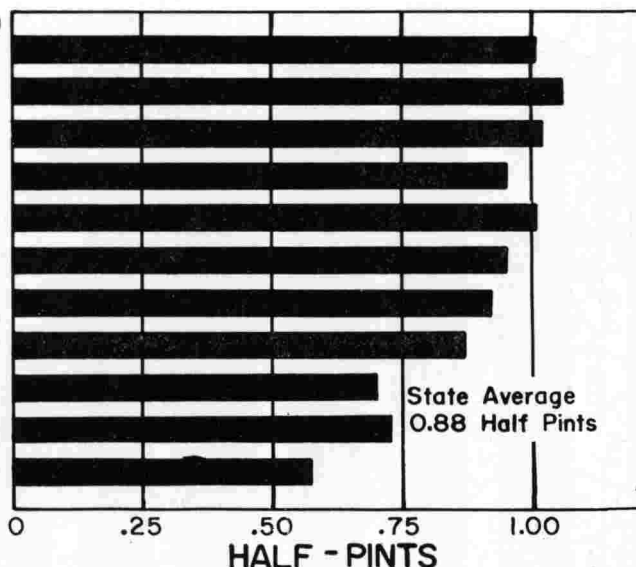
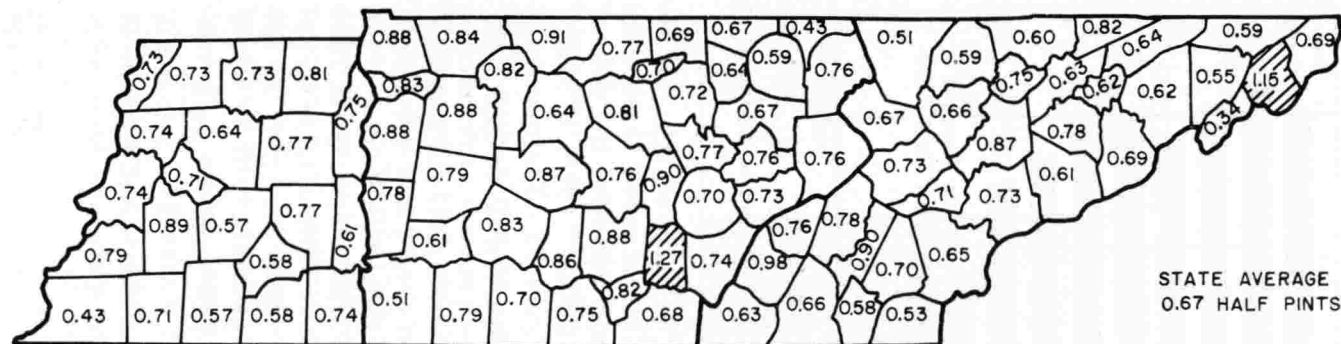


Figure 5. Relationship between size of school and milk consumed per student per day, Tennessee, March, 1960.

one-half pint or over in 1954, 36 counties reached this rate by March 1960. Individual schools have far exceeded these state and county averages. Thirty-seven schools exceeded the rate of 2 half-pints of milk per student per day in March 1960. In March 1959, 55 schools exceeded this rate (Figure 7). The maximum potential has not been reached in terms of per student daily school milk consumption. A few Tennessee schools have reached average daily consumption rates of over 5 half-pints per student.<sup>23</sup> If every school in Tennessee had reached even 2 half-pints average daily per capita milk consumption, then milk served in the State's schools would have been about 130 million pounds in 1960 or an estimated 13 percent of total grade A utilization on an annual basis. Higher daily consumption rates, especially in the larger schools, along with increased enrollments, will be major contributors to future increases in Tennessee school milk consumption.

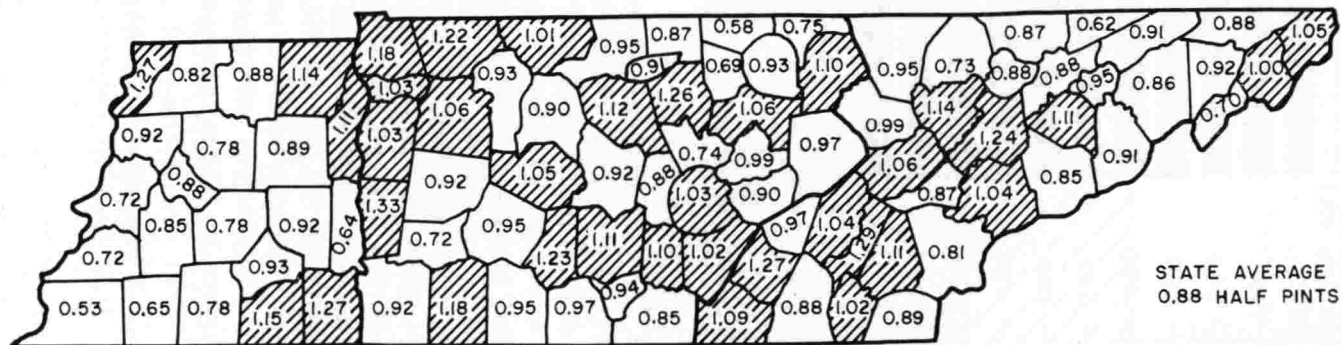
**By Type of Program:** Consumption rates also varied by type of federal food program. Each year highest daily per capita con-

<sup>23</sup>Students will not take additional milk indefinitely even up to stomach capacity at the nominal price for school milk or even if milk were free. Other foods are needed to provide a balanced diet, and the economic law of diminishing marginal utility is certainly operative.



MARCH 1954

▨ Counties with 1 half pint or over  
average daily per capita consumption



MARCH 1960

Figure 6. Average milk consumption per student per day in schools serving milk, by counties, March, 1954 and 1960.

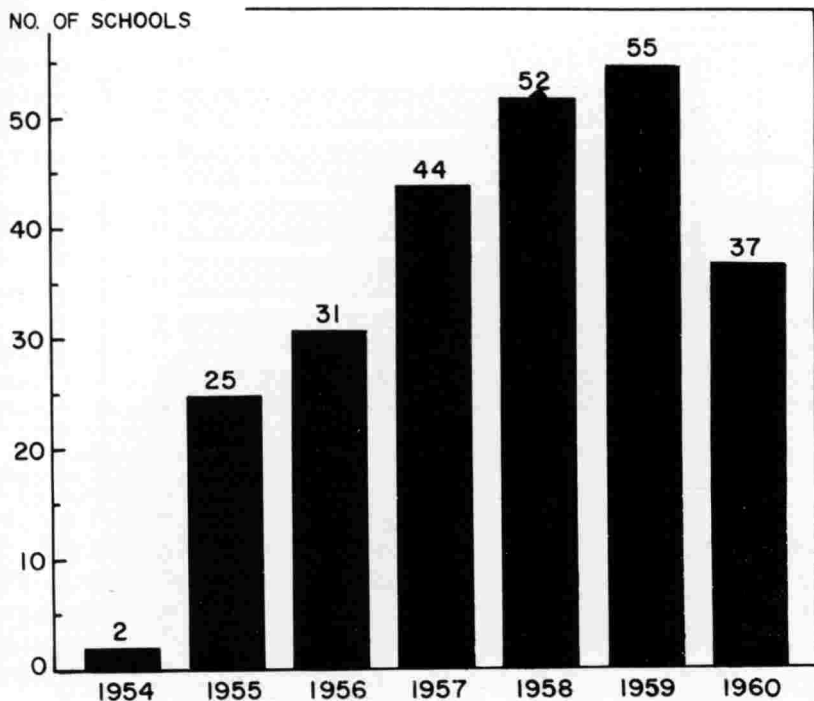
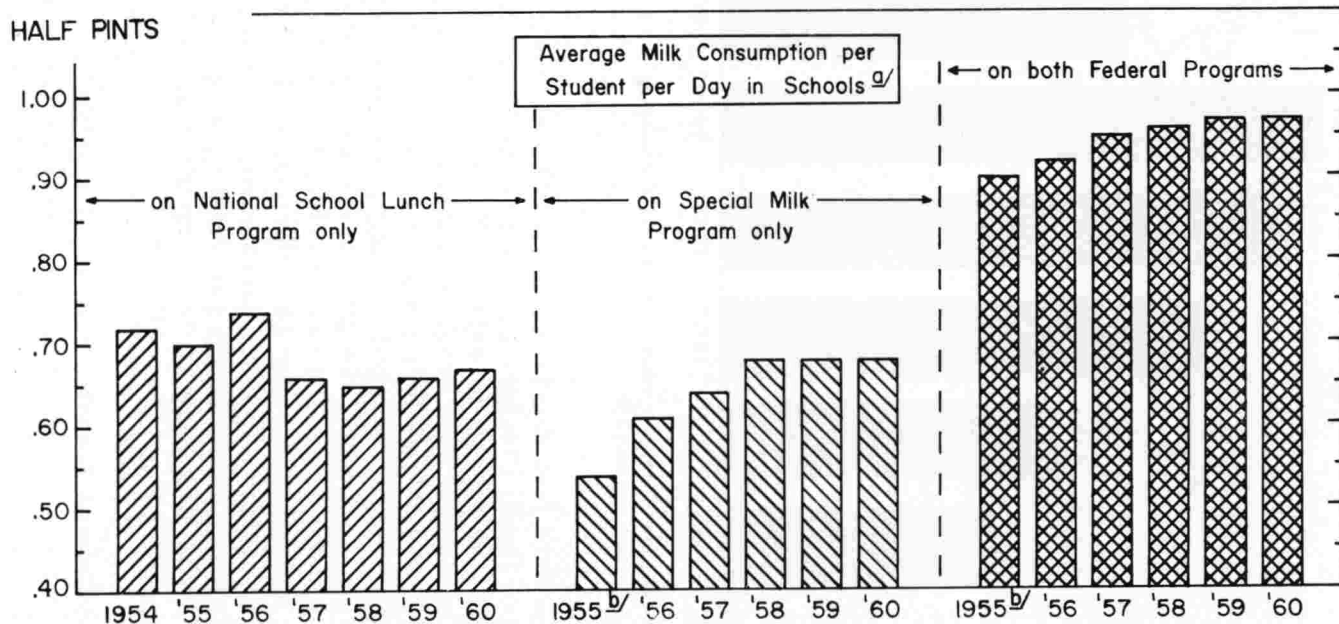


Figure 7. Number of Tennessee schools serving milk exceeding two half-pints per student per day, March, 1954-1960.

sumption rates were recorded in schools which were on both the National School Lunch Program and the Special Milk Program. In March 1960, the schools on only the National School Lunch Program or the Special Milk Program had per capita consumption rates of 0.67 and 0.68 half-pints respectively, while those schools on both programs averaged 0.97 half-pints per student per day. (Figure 8). In March 1960, 560 schools serving milk were participating in only one of the two principle federal food programs. The limiting factor for participating in the National School Lunch Program is probably lunch room equipment. Seventy-seven percent of those schools participating in one program were in the Special Milk Program which requires no lunch room equipment.

**By White and Colored Schools:** There was a significant difference between rates of participation in the school lunch and milk programs and rates of milk consumption in white and colored



<sup>a/</sup>Does not include the few schools serving milk under other than federal programs.

<sup>b/</sup>Special milk program not in effect March, 1954.

Figure 8. Consumption rates under National School Lunch Program and Special Milk Program in Tennessee, March data, 1954-60.

schools in Tennessee in March 1960. While 21.2 percent of Tennessee schools are colored, only 15.5 percent of the schools serving milk were colored (Table 7).<sup>24</sup>

**Table 7. Participation in Tennessee School Lunch and School Milk Programs, by White and Colored Schools, March, 1960.**

|               | All Tennessee<br>public schools <sup>a</sup> |         | Schools<br>serving milk <sup>b</sup> |         |
|---------------|----------------------------------------------|---------|--------------------------------------|---------|
|               | Number                                       | Percent | Number                               | Percent |
| White .....   | 2,219                                        | 78.8    | 1,894                                | 84.5    |
| Colored ..... | 596                                          | 21.2    | 347                                  | 15.5    |
| Total .....   | 2,815                                        | 100.0   | 2,241                                | 100.0   |

<sup>a</sup>"Annual Statistical Report of the Department of Education" State of Tennessee, Year ending June 30, 1960.

<sup>b</sup>13 special schools not included in this tabulation.

Per capita milk consumption rates were also lower in colored than in white schools, averaging 0.52 half-pints in colored compared with 0.96 in white. This was true regardless of school size but was most noticeable in large schools (600 students and over). These differences are shown in Table 8.

**Table 8. Milk Consumption Rates in Tennessee White and Colored Schools, by Size of Schools Serving Milk, March, 1960.**

| Number of<br>students in<br>average daily<br>attendance | Schools <sup>a</sup> |         | Proportion<br>of<br>schools |         | Milk consumption rates per<br>student per day |         |                                     |
|---------------------------------------------------------|----------------------|---------|-----------------------------|---------|-----------------------------------------------|---------|-------------------------------------|
|                                                         | white                | colored | white                       | colored | white                                         | colored | Proportion white<br>exceeds colored |
|                                                         |                      |         |                             |         |                                               |         |                                     |
|                                                         | Number               |         | Percent                     |         | Half-pints                                    |         | Percent                             |
| 0-299                                                   | 1,121                | 229     | 59.2                        | 66.0    | 1.09                                          | 0.67    | 62.7                                |
| 300-599                                                 | 529                  | 61      | 27.9                        | 17.6    | 1.01                                          | 0.65    | 55.4                                |
| 600 and over                                            | 244                  | 57      | 12.9                        | 16.4    | 0.83                                          | 0.41    | 102.4                               |
| Total                                                   | 1,894                | 347     | 100.0                       | 100.0   | 0.96                                          | 0.52    | 94.6                                |

<sup>a</sup>13 special schools not included in this tabulation.

**By Grade Level of School:** The highest rates of milk consumption were recorded in elementary schools in Tennessee. Consumption in elementary schools averaged 0.98 half-pints per student per day compared with 0.75 for junior and senior high schools and 0.76 for mixed grades (Figure 9).

<sup>24</sup>Using a chi-square statistical measure it was found that chances were small (less than 1 in 100) that these differences between all state schools and those serving milk were purely random. The difference in participation by color of school was statistically significant.

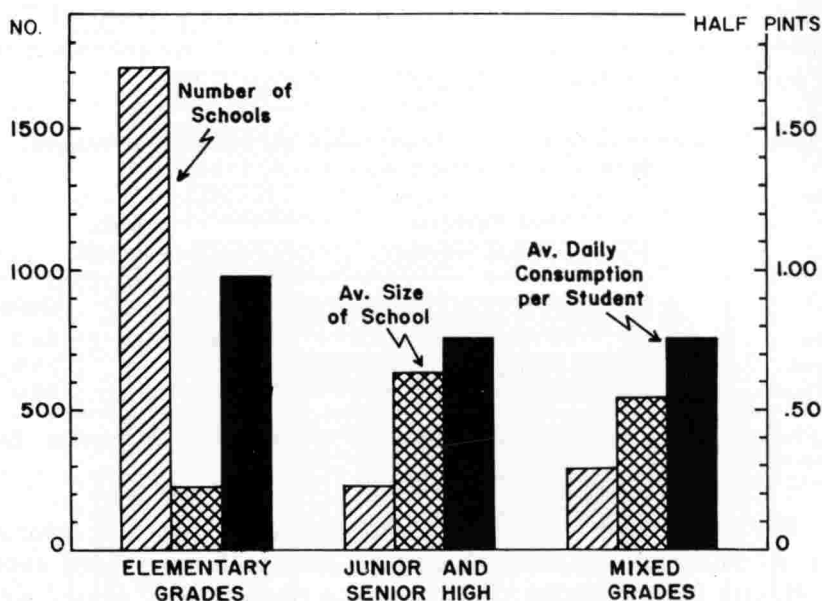


Figure 9. Number of schools serving milk, average number of students and average daily consumption rates by grade level, Tennessee, March, 1960.

The difference in these consumption rates is partly due to difference in size of school at the various grade levels. However, students in the lower grades have been shown to drink more milk than those in the older age groups.<sup>25</sup>

**Case Study of Schools with High Milk Consumption:** Preliminary statistical studies can serve as guides in the selection of cases for detailed study and may focus attention on factors which need special and more comprehensive study.<sup>26</sup> This is particularly true in the case in point where some schools have had outstanding milk consumption records consistently over the years for which consumption data have been collected. Although these selected schools are not typical, observation of them may provide some ideas which apply to all Tennessee schools. Schools selected for detailed analysis were those which had consistently over 2 half-pints per student daily milk consumption rates for the period

<sup>25</sup>A Pennsylvania Study "The Story of Adolescents and Milk," Progress Report 204, Pennsylvania State University, June, 1959, showed that 5th graders had higher milk consumption rates than either 9th graders or 12th graders. At each grade level, boys consumed more than girls. This was particularly noticeable at the 12th grade level where average daily consumption of boys was 3.9 glasses and for girls only 1.9 glasses of milk per day.

<sup>26</sup>Young, Pauline V. and Schmial, Calvin F., *Scientific Social Surveys and Research*, Prentice Hall, Inc., Englewood Cliffs, N. J., p. 239.

1956-1960. The six schools which met this criterion are shown in Table 9, along with their milk consumption record.

**Table 9. Schools in Tennessee with Over 2 Half-Pints per Capita Daily Milk Consumption Rates Consistently, 1956-1960.**

| School<br>code number | County<br>location | Average daily per capita milk consumption <sup>a</sup> |      |      |      |      |
|-----------------------|--------------------|--------------------------------------------------------|------|------|------|------|
|                       |                    | 1956                                                   | 1957 | 1958 | 1959 | 1960 |
|                       |                    | Number of half-pints                                   |      |      |      |      |
| 17                    | Jackson            | 2.23                                                   | 2.17 | 2.09 | 2.29 | 2.09 |
| 8                     | Jefferson          | 4.09                                                   | 4.33 | 4.30 | 4.93 | 3.36 |
| 13                    | Marshall           | 2.46                                                   | 2.45 | 2.98 | 2.42 | 2.66 |
| 15                    | Overton            | 2.82                                                   | 3.27 | 2.38 | 2.84 | 3.10 |
| 27                    | Roane              | 2.51                                                   | 3.30 | 2.53 | 4.53 | 2.00 |
| 31                    | Rutherford         | 3.72                                                   | 4.70 | 2.97 | 3.22 | 2.68 |
| ---                   | State Average      | 0.83                                                   | 0.85 | 0.88 | 0.89 | 0.88 |

<sup>a</sup>For March each year.

Some selected characteristics of these six case study schools are shown in Table 10. All were small elementary schools. The schools were equally divided between white and colored. Five were located in rural communities. All were in low-income areas (less than \$3,000 average annual family income). Each participated in one of the federal school food aid programs. Five took part in both the National School Lunch and the Special Milk Program. With the exception of one school without refrigeration facilities, all case study schools served milk from 2 to 4 times daily. All offered milk free choice without limit. Five had from 96 to 100 percent of the student body remaining at school for lunch. Another factor which may have influenced milk consumption was the daily delivery of milk to these high consumption schools. One school had twice a day delivery. Prices paid for milk by the schools were 6 cents per half pint or less with a selling price to students of 3 cents per half-pint or less.

## **Market Potential for Milk in Schools**

### **FACTORS RELATED TO THE EXPANSION OF THE SCHOOL MILK MARKET**

**Increased School Enrollment:** Further expansion is likely to occur in both the National and the Tennessee school milk market as enrollments continue to increase, as new schools are constructed with cafeteria facilities, and as cafeterias are added to existing

**Table 10. Selected Characteristics of High Per Capita Milk Consumption Schools in Tennessee, 1960-61 School Year.**

| School<br>code<br>number | Average<br>daily<br>attend-<br>ance | Grade<br>level | White<br>or<br>colored | Rural<br>or<br>urban <sup>a</sup> | Percent<br>of<br>students<br>from<br>farms | Estimated<br>family<br>income<br>level of<br>area | Type<br>of<br>school<br>lunch<br>program <sup>b</sup> | Milk<br>offered<br>free<br>choice<br>without<br>limit | Percent of<br>students<br>remaining<br>at school<br>for<br>lunch | Daily<br>frequency<br>of<br>serving   delivery |   | Facilities<br>for:<br>Refriga- Hot<br>eration lunches |     | Prices paid<br>in dollars/<br>half-pint <sup>c</sup><br>by schools by students |     |
|--------------------------|-------------------------------------|----------------|------------------------|-----------------------------------|--------------------------------------------|---------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------|---|-------------------------------------------------------|-----|--------------------------------------------------------------------------------|-----|
|                          |                                     |                |                        |                                   |                                            |                                                   |                                                       |                                                       |                                                                  |                                                |   |                                                       |     |                                                                                |     |
| 17                       | 23                                  | 1-8            | W                      | R                                 | 100                                        | Under \$2,000                                     | B                                                     | Yes                                                   | 96                                                               | 2                                              | 1 | Yes                                                   | Yes | .03                                                                            | .00 |
| 8                        | 25                                  | 1-8            | C                      | R                                 | 20                                         | 2,000-2,999                                       | B                                                     | Yes                                                   | 100                                                              | 4                                              | 1 | Yes                                                   | Yes | .055                                                                           | .02 |
| 13                       | 78                                  | 1-8            | W                      | R                                 | 75                                         | 2,000-2,999                                       | B                                                     | Yes                                                   | 98                                                               | 3                                              | 1 | Yes                                                   | Yes | .06                                                                            | .03 |
| 15                       | 13                                  | 1-8            | C                      | U                                 | none                                       | Under 2,000                                       | M                                                     | Yes                                                   | 40                                                               | 1                                              | 1 | No                                                    | No  | .06                                                                            | .03 |
| 27                       | 64                                  | 1-8            | W                      | R                                 | 50                                         | Under 2,000                                       | B                                                     | Yes                                                   | 98                                                               | 3-4                                            | 1 | Yes                                                   | Yes | .055                                                                           | .02 |
| 31                       | 103                                 | 1-8            | C                      | R                                 | 98                                         | Under 2,000                                       | B                                                     | Yes                                                   | 100                                                              | 3                                              | 2 | Yes                                                   | Yes | .06                                                                            | .03 |

<sup>a</sup>Rural equals location in community of less than 2,500 population.

<sup>b</sup>B = both National School Lunch and Special Milk programs; M = Special Milk Program only.

<sup>c</sup>February, 1961, but typical of previous years except for school Number 17.

schools. Enrollments in all public elementary and secondary schools in the United States totaled 33.7 million pupils in the 1957-58 school year. The Department of Health, Education and Welfare estimates that public school enrollments in the United States will reach 41.5 million pupils by 1965. By 1970 such enrollments are expected to reach 44.3 million pupils, or about 31 percent more than 1957-58 enrollments.<sup>27</sup>

In Tennessee, it is estimated that there will be 880,000 enrolled in public schools by 1965—up 8.6 percent from the 810,000 enrolled in 1960 (Figure 10).<sup>28</sup> Using the same straight-line projection, 1970 enrollments would total an estimated 950,000 public school students.

**Public School Construction:** Additional school and cafeteria construction should lead to greater participation among schools in both federal programs. Schools without lunch room facilities are hampered in participation in the National School Lunch Program. It has previously been shown in this report that schools participating in both programs have the highest per student daily milk

<sup>27</sup>"Projected Enrollments in Full-Time Public and Non-Public Elementary and Secondary Day Schools Assuming Continuation of 1955-57 Birth Rates, 50 States and D. C., School Years 1958-59 to 1969-70"—Projections as of August, 1960; United States Department of Health, Education and Welfare; Office of Education; Educational Statistics Branch; Reference, Estimates, and Projections Section; August 24, 1960.

<sup>28</sup>See also Appendix I, Tennessee as a percent of United States enrollment.

**Table 11. Tennessee Public School Construction—Cafeterias and Other Buildings, School Year Ending June 30, 1954-1960<sup>a</sup>.**

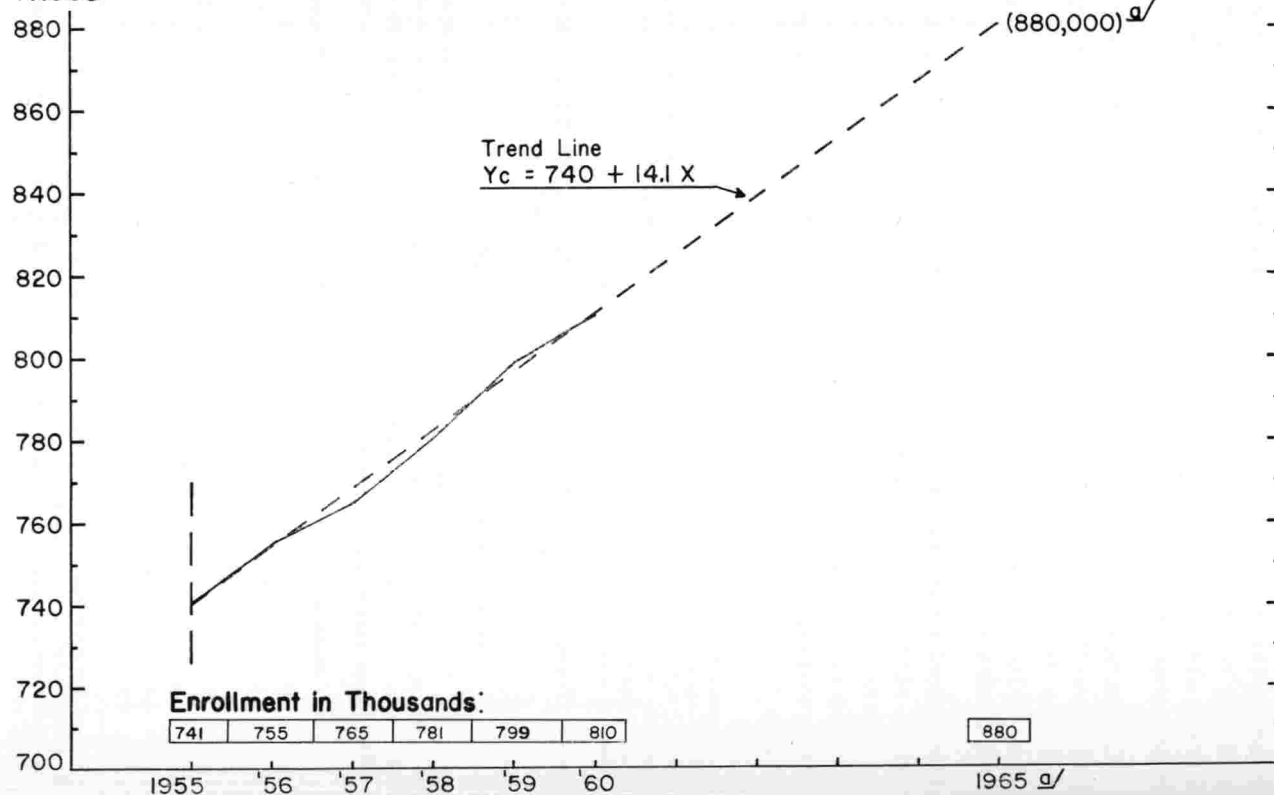
| Year ending June 30 | New buildings       |                                         |                                             | Additions       |                            |                                         |                                                           |
|---------------------|---------------------|-----------------------------------------|---------------------------------------------|-----------------|----------------------------|-----------------------------------------|-----------------------------------------------------------|
|                     | Total new buildings | Cafeterias <sup>b</sup> and cafeteriums | Proportion of new buildings with cafeterias | Total additions | Cafeterias and cafeteriums | Proportion of additions with cafeterias | Proportion of new buildings and additions with cafeterias |
|                     |                     |                                         |                                             |                 |                            |                                         |                                                           |
|                     | Number              |                                         | Percent                                     | Number          |                            | Percent                                 | Percent                                                   |
| 1954                | 88                  | 119 <sup>c</sup>                        | -----                                       | 189             | c                          | -----                                   | 43.0                                                      |
| 1955                | 105                 | 127 <sup>c</sup>                        | -----                                       | 164             | c                          | -----                                   | 47.0                                                      |
| 1956                | 86                  | 106 <sup>c</sup>                        | -----                                       | 165             | c                          | -----                                   | 42.2                                                      |
| 1957                | 77                  | 51                                      | 66.2                                        | 135             | 47                         | 34.8                                    | 46.2                                                      |
| 1958                | 63                  | 35                                      | 55.6                                        | 157             | 41                         | 26.1                                    | 34.5                                                      |
| 1959                | 64                  | 48                                      | 75.0                                        | 149             | 40                         | 26.8                                    | 41.3                                                      |
| 1960                | 72                  | 51                                      | 70.8                                        | 157             | 34                         | 21.6                                    | 37.1                                                      |

<sup>a</sup>"Annual Statistical Report of the Department of Education," State of Tennessee.

<sup>b</sup>Does not include multi-purpose rooms which may also serve as lunch rooms.

<sup>c</sup>Cafeterias and Cafeteriums for new buildings and as additions were combined for reporting prior to 1957.

# STUDENT ENROLLMENT THOUS.



a/Projection source: ANNUAL STATISTICAL REPORT OF THE DEPARTMENT OF EDUCATION, State of Tennessee.

Figure 10. Projected Tennessee public school enrollment, 1960-65.

consumption rates. Table 11 indicates trends in Tennessee public school construction since 1954. From these data it appears that most new buildings, or from one-half to three-fourths, install cafeterias when the building is built. The percent of additions which include cafeteria construction is declining as more Tennessee schools become equipped with lunch room facilities.

**Per Capita Consumption Rates:** The future market for Tennessee-produced milk in schools will depend not only on the number of children in school and available facilities but also on per capita consumption rates. This latter figure is even more difficult to determine.<sup>29</sup> If milk consumption rates continue at about the 0.88 half-pint (.47 lb.) 1960 consumption rate, the estimated 880,000 enrolled students, assuming 91 percent attendance in 1965, should consume over 66 million pounds of milk during the school year (175 days). If it is increased to 1.05 half-pints (.56 lb.), the same students would consume about 79 million pounds during the school year. Using the conservative estimate of 66 million pounds for 1965, this is up 16 percent from 1960 school consumption; using the upper estimate of 79 million pounds consumption, this would be about 38 percent over current school sales on an annual basis. Thus it appears that the school market will become even more important as an outlet for fluid milk in Tennessee in future years.

## **POSSIBLE WAYS OF INCREASING MILK CONSUMPTION IN SCHOOLS**

Interpretation of data in this report and elsewhere suggests different possible ways to increase milk production, and certain implications for the federal government, for the state and local school administrators, and for the Tennessee dairy industry.

**Courses of Action by Federal Government:** Perhaps the federal government can be of greatest help in expanding school milk consumption by making additional special milk and school lunch funds available to states as student enrollments increase. Some revision of the method of apportioning this reimbursement among the states may also be in order. For example, current allocation of National School Lunch funds is based on the number of school

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<sup>29</sup>It is dependent, among other things, on availability in schools, price in schools, availability in the home, changes in student's tastes and preferences, availability and price of alternative beverages (especially soft drinks), government aid programs and type and amount of demand manipulation.

children in the state and on need, as indicated by the relation of the per capita income in the United States to the per capita income in the state. A revised method of appropriation based on school or, more important, on student-participation, would aid the states that have done outstanding work in promoting school lunch and milk sales and now spread the subsidy among a greater number of meals.

**Suggested Changes in the State Program:** 1) Encourage Tennessee school participation in both the National School Lunch Program and the Special Milk Program. This was shown to be associated with daily consumption rates per student in Tennessee schools. Perhaps this can be accomplished best through a state-wide education program. Some 561 schools participate in neither federal program. However, these are small schools and while they make up 20 percent of the total number in Tennessee, they account for less than 6 percent of the students. In addition, there are 560 schools currently serving milk but active in only one federal program.

2) There is a need for a state-wide education program to increase colored school participation in these federal programs. Whereas 21.2 percent of Tennessee schools are colored schools, 44.4 percent of the nonparticipating schools are colored schools.

**Suggestions for Local Schools:** 1) Local schools should keep the price of milk to students as low as possible by participating in all federal subsidy programs, by using available local funds to subsidize the indigent children, by keeping handling costs to a minimum, and by getting the best dealer price possible. School administrators may keep school buying prices down by accepting the lowest bid among those requested from and submitted by several dairies.

2) Milk should be allocated free choice with no limit on how much a child may drink and the subsidy be paid. Schools with consistently high consumption rates in Tennessee followed this procedure.

3) Consumption can be increased if schools will aim toward a minimum of three spaced servings per day. Some schools with long bus routes have found it helpful to serve milk before school begins.

4) Tennessee schools with high per capita milk consumption rates obtained frequent delivery of at least once a day and

all but one provided refrigeration. Milk is much more palatable when served cold and should not be allowed to remain out on the serving counter or otherwise unrefrigerated before serving.

5) Local schools should consider a milk promotion program. This can take the form of educating children on the value of milk in the diet. In some schools, poster contests with awards from local sponsors have helped call attention to milk drinking. Large schools need especially to get principals and teachers behind the program for greatest success toward increased consumption rates.

6) Wherever possible, school administrators should reduce competition with soft drinks and candy.

7) In large schools, milk vending machines should be helpful in increasing milk sales during other than the regular lunch period through use of Special Milk Program funds.<sup>30</sup> Milk might be distributed to students at low cost in this manner.

**Possible Dairy Industry Management Action:** The dairy industry has an important stake in the school lunch and school milk programs and can do much to help federal, state, and local agencies responsible for administering and operating these programs. Some milk distributors and farm organizations in Tennessee have given special awards or other recognition to schools that have outstanding milk consumption records, or to students winning school milk promotion contests. These awards need not be monetary, but some recognition for outstanding work should encourage school and student participation.

Cooperative effort between government agencies and between these agencies and dairy farmers and dairy distributors can do much to promote an even more effective school milk program in Tennessee.

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<sup>30</sup>A West Virginia study showed that total milk sales were 26 percent higher for selected schools for the months after vending machines were installed than during the corresponding months a year earlier. During the same period, daily attendance at the schools increased only 7 percent. James H. Clarke, Mardy Myers, and J. Scott Hunter, "Milk Vending, A Market Wide Evaluation in Berkeley County, West Virginia." Bulletin 429, West Virginia University, June, 1959, p. 32.

# APPENDIX I

## Tennessee Public School Enrollment as a Percent of United States Enrollment 1930-1960, and Estimated 1965.

| School<br>year<br>ending<br>June 30 | Tennessee<br>enrollment <sup>a</sup> | United States<br>enrollment <sup>b</sup> | Tennessee<br>as a percent<br>of U. S. |
|-------------------------------------|--------------------------------------|------------------------------------------|---------------------------------------|
|                                     | Thousands                            | Millions                                 | Percent                               |
| 1930                                | 628                                  | 25.7                                     | 2.44                                  |
| 1940                                | 648                                  | 25.4                                     | 2.55                                  |
| 1950                                | 659                                  | 25.1                                     | 2.63                                  |
| 1951                                | 676                                  | n.a.                                     | n.a.                                  |
| 1952                                | 677                                  | 26.6                                     | 2.54                                  |
| 1953                                | 689                                  | n.a.                                     | n.a.                                  |
| 1954                                | 716                                  | 28.8                                     | 2.49                                  |
| 1955                                | 741                                  | n.a.                                     | n.a.                                  |
| 1956                                | 755                                  | 31.2                                     | 2.42                                  |
| 1957                                | 765                                  | 32.4                                     | 2.36                                  |
| 1958                                | 781                                  | n.a.                                     | n.a.                                  |
| 1959                                | 799                                  | 34.7 <sup>c</sup>                        | 2.30                                  |
| 1960                                | 810                                  | n.a.                                     | n.a.                                  |
| Est. 1965                           | 880                                  | 41.5 <sup>c</sup>                        | 2.12 <sup>d</sup>                     |

<sup>a</sup>Statistical Abstract of the United States 1960, p. 116. 1951-1960 data from "Annual Statistical Report of the Department of Education," State of Tennessee.

<sup>b</sup>Statistical Abstract of the United States, 1960, p. 114, and Historical Statistics, Colonial Times to 1957, Series H 224-227.

<sup>c</sup>National Food Situation, NFS 89, AMS, United States Department of Agriculture, July 1959, p. 53.

<sup>d</sup>Estimated from past trends as 0.03 percent decline per year.

## APPENDIX II

### Extent of National School Lunch Program and Special Milk Program in Tennessee 1954-1960<sup>a</sup>.

| Year | Schools serving milk <sup>b</sup> |              |             |                 |                    | Average milk consumption per student per day in schools <sup>b</sup> |              |             |                 |                    |
|------|-----------------------------------|--------------|-------------|-----------------|--------------------|----------------------------------------------------------------------|--------------|-------------|-----------------|--------------------|
|      | Included in the study             | In NSLP only | In SMP only | In NSLP and SMP | Not in NSLP or SMP | All schools in the study                                             | In NSLP only | In SMP only | In NSLP and SMP | Not in NSLP or SMP |
|      | Number                            |              |             |                 |                    | Half-pints                                                           |              |             |                 |                    |
| 1954 | 1942                              | 1756         | (c)         | (c)             | 186                | 0.67                                                                 | 0.72         | (c)         | (c)             | 0.51               |
| 1955 | 2280                              | 377          | 293         | 1502            | 108                | 0.79                                                                 | 0.70         | 0.54        | 0.90            | 0.60               |
| 1956 | 2417                              | 223          | 479         | 1672            | 43                 | 0.83                                                                 | 0.74         | 0.61        | 0.92            | 0.58               |
| 1957 | 2397                              | 209          | 448         | 1719            | 21                 | 0.85                                                                 | 0.66         | 0.64        | 0.95            | 0.50               |
| 1958 | 2353                              | 180          | 443         | 1717            | 13                 | 0.88                                                                 | 0.65         | 0.68        | 0.96            | 0.52               |
| 1959 | 2321                              | 141          | 464         | 1716            | (d)                | 0.89                                                                 | 0.66         | 0.68        | 0.97            | n.a.               |
| 1960 | 2254                              | 129          | 431         | 1694            | (d)                | 0.88                                                                 | 0.67         | 0.68        | 0.97            | n.a.               |

<sup>a</sup>March each year, Downen, M. Lloyd, "Milk Consumption in Tennessee Schools," annual circular, Department of Agricultural Economics and Rural Sociology, University of Tennessee, Knoxville.

<sup>b</sup>NSLP refers to National School Lunch Program; SMP refers to Special Milk Program.

<sup>c</sup>Special Milk Program not in effect March 1954.

<sup>d</sup>Due to the very small number of schools remaining in this category, no information was collected on them for 1959 or 1960.

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