Impact of Milk Shipment Trends on State and Local Programs

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POPULATION GROWTH, the shift in population concentration, and technological change have significantly influenced trends in interstate and intrastate milk shipments. These trends in turn have had multiple impacts on State and local milk sanitation programs.

In 1900, our country's population was 75 million, of whom two-thirds lived on farms. By 1940, the population had increased to 132 million, and as a result of industrialization, population concentration had shifted from rural to urban areas. World War II brought about further changes in population concentration, and by 1950 the population had increased to 151 million with two-thirds living in cities. According to the Bureau of Census, the population of the United States as of September 1960 was 181 million, of whom approximately 114 million lived in 212 metropolitan centers.

This period of great population growth has corresponded with a period of great technological change. In the dairy industry, technological changes have advanced at a rapid pace, especially since World War II, and have resulted in significant changes in dairy husbandry, milk production practices, processing methods, and marketing techniques.

Effect of Population Changes

The increase of almost 50 million in population in the last 20 years has made it necessary to increase milk production to satisfy the demand. In 1940, total production in the United States was approximately 109 billion pounds, of which 43 billion pounds, or 39 percent, were consumed as fluid milk and cream. By 1950, total production had increased to 117 billion pounds, of which approximately 53 billion pounds, or 45 percent, were used for the fluid milk and cream market. In 1959, total production reached 122 billion pounds, of which approximately 59 billion pounds, or 48 percent, were used as fluid milk and cream. This increase of 16 billion pounds in the amount of milk used as fluid milk and cream from 1940 to 1959 was required to satisfy the increased demand resulting solely from population growth during this 19-year period.

As metropolitan centers have increased in population, they have expanded many miles distant into surrounding rural areas. More and more crop and pasture land has been converted into suburban developments and into sites for small industrial plants. Less land is available for dairy farming in the vicinity of some of our large metropolitan centers and even near some of our smaller cities. In addition, many dairy farmers have turned to more profitable types of farming or other occupations. These are two of several factors which have brought about a decline in the number of farms which derive

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major income from the sale of milk at the time population growth has created additional demands upon local milksheds.

Even though milk production on individual farms has been increased, in many instances it has not kept pace with the increase in demand. Many communities have been compelled to look to more distant sources for supplementary supplies. In some municipalities, the need for such supplies has been limited to periods of seasonal shortage. However, in many cities the overall demand can no longer be satisfied by local milkshed production, and these cities find it necessary to import some milk throughout the year. Thus, the trend is toward movement of greater volumes of milk in both interstate and intrastate commerce.

Increased Shipping

Federal Milk Marketing Orders provide one indication of this increased commerce in milk. A U.S. Department of Agriculture report (*1*) states that for the monthly periods, June and September 1954, a total of 92 million pounds of milk were sold in one market by sellers who were regulated by another marketing order. This included both packaged and bulk milk. For some of the bulk milk sold, the distances in interstate or intrastate movement were substantial, as the markets were more than 500 miles apart. The list of Sanitation Compliance Ratings of Interstate Milk Shippers, published quarterly by the Public Health Service, provides another indication of this trend, particularly with respect to movement of milk in interstate commerce. When this list was first published in 1951, it contained the names and ratings of 160 interstate shippers located in 17 States. The issue of January 1, 1962, lists 794 interstate milk shippers located in 39 States and the District of Columbia. This represents more than a fourfold increase in a period of almost 11 years in the number of interstate shippers offering milk for sale.

Volume data provides still another indication of the trend toward increasing movements in interstate commerce. While reliable information as to the volumes of milk being shipped is difficult to obtain, some data are available which reflects the interstate trend. In 1956, Weckel (*2*) conducted a survey of the shippers certified under the Cooperative State-Public Health Service Program for Certification of Interstate Milk Shippers to determine the number of shipments made annually and the volumes involved. Approximately 65 percent of the listed shippers replied to his questionnaire. The data obtained indicated that in 1954 at least 20,000 shipments were made, representing approximately 500 million pounds of milk and that in 1955 at least 25,000 shipments were made, totaling more than 700 million pounds of milk.

In 1957, the Public Health Service attempted to obtain data on volume of interstate milk shipments from State officials. Only 26 States were able to supply even partial information on volumes shipped, but 14 others indicated that shipments were being made. However, the volumes reported by the 26 States totaled more than 1½ billion pounds of grade A milk and cream. In 1960, the Service made a similar survey and, on this occasion, data were obtained from 40 States. The volumes reported as being shipped interstate totaled approximately 9 billion pounds of milk. These figures, of course, do not represent all of the grade A milk and milk products shipped interstate in the years reported upon, but they do provide an indication of the increasing amounts of milk and cream being shipped interstate. In addition, the volume figure of 9 billion pounds, obtained from the 1960 Public Health Service survey, is significant in terms of the total pounds of milk sold on the fluid market.

One further indication of the trend in interstate milk shipments is the fact that most of the States both export and import milk for the fluid market to some extent each year. This is true even of those States which rank high in total milk production. According to Public Health Service records, 43 States exported some milk in 1960 while 46 States supplemented their own supplies from out-of-state sources.

Population concentration in metropolitan centers and the accompanying development of suburban areas and satellite communities, sometimes located in several existing political jurisdictions, have also brought about changes in processing and merchandising of milk. The industry trend is toward larger but fewer processing units serving wider areas of distribution for packaged products.

As would be expected, the industry's expansion of areas of distribution has resulted in an increase in both the intrastate and interstate movement of packaged milk. The USDA report referred to above showed that in 1952, 72 percent of 5,090 communities in 10 north-central States received packaged milk from outside sources located an average of 42 miles distant. The current list of Sanitation Compliance Ratings of Interstate Milk Shippers is another indicator of the trend in movement of packaged milk. Of the 794 shippers listed, 376 offer only pasteurized milk and milk products for shipment while an additional 186 offer both packaged milk and bulk milk. Some of these shippers of packaged products have extended their areas of distribution more than 100 miles, involving intrastate as well as interstate shipment.

Technological Changes

The advancements in dairy science and dairy technology during the past two decades have enabled the dairy industry to cope with many of the problems arising from population growth, population concentration, and rising labor costs. They have pointed the way toward increased production per dairy cow. They have provided more economical and efficient methods of handling larger volumes of milk on the dairy farm and in the milk plant. They have brought about improvements in the overall quality of market milk, including improvements in sanitary quality and keeping quality. They have also made possible the safe movement of quality milk and milk products to almost any point in the nation. In addition, advancements in dairy science and dairy technology have had their impact on State and local milk sanitation administrative practices and procedures and, indeed, in the light of changing times, have dictated the need to reconsider many such practices and procedures, particularly in relation to interstate and intrastate movements.

Many health authorities who were once reluctant to do so are now willing to accept milk into their jurisdictions on the basis of reliable information as to its sanitary status provided by authorities in the States of origin, without sending their own personnel to make inspections of the source.

To some degree, this change in concept has been brought about by necessity, since the State or local health department did not have the resources to make outside inspections at a time when supplementary supplies were needed, often on short notice. Occasionally, as local milksheds have grown they have overlapped with adjoining milksheds, and good administrative practice has dictated the consummation of reciprocal inspection agreements between municipalities. But to a larger degree, this change in concept has resulted from a growing realization on the part of many health authorities that conditions have changed. These authorities are willing to accept the fact that administrative practices designed to extend local inspection to all outside supplies at a time when sanitary control of milk was not extensive, when milk was not promptly cooled on the farm, and when there was not sufficient refrigerated transport available to move milk quickly are no longer required to protect the public health when the outside supply is under adequate supervision at the source. They take the position that inspections of distant sources already under adequate supervision and inspection by another milk sanitation agency are not only unnecessary but are wasteful of tax dollars and are burdensome to the industry. It is their view that, instead of duplicating inspection services of other competent milk sanitation agencies, it would be better to spend such funds to strengthen local milk sanitation services or for other more pressing health needs.

Voluntary Milk Certification Program

It was this view, which clearly emerged during World War II, that prompted the Association of State and Territorial Health Officers in 1946 to request the Public Health Service to develop a plan which would use sanitation compliance ratings, made by personnel of the State in which the supply was located, as the basis for certification of supplies of milk being shipped interstate. Such a plan was developed and submitted to the States; however, at the time, few States were willing to undertake the additional responsibilities involved. In 1949, the association again requested the Service to

assist the States with this problem. Similar requests were made by State health departments, State agricultural departments, and representatives of the milk industry. In 1950, upon the request of representatives of 11 midwestern States, the Surgeon General called a National Conference on Interstate Milk Shipments to consider all aspects of the problem. As a result of the agreements reached at this conference, a plan for the conduct of a Cooperative State-Public Health Service Program for Certification of Interstate Milk Shippers was developed. The program was initiated in 1951.

The agreements at the first National Conference on Interstate Milk Shipments and subsequent meetings of the conference have been set forth in a number of papers which have been published in the *Journal of Milk and Food Technology* (*3–6*). The responsibilities of State and local milk sanitation agencies and the Public Health Service in the conduct of the voluntary Cooperative State-Public Health Service Program for Certification of Interstate Milk Shippers have also appeared in the *Journal of Milk and Food Technology* and other publications (*7–9*).

This program is voluntary. Inspection and laboratory control of interstate milk supplies are performed by the States and municipalities in which the source of milk is located, using the Milk Ordinance and Code recommended by the Public Health Service and the rating method (*10*) developed by the Service as uniform criteria for evaluation. The States report to the Service those shippers whose products and plants have been rated by them in accordance with the applicable sanitary requirements, and the Service publishes quarterly a list of the sanitation compliance ratings of such certified shippers for the information of areas desiring to import milk. Since the program is voluntary, no shipper's rating is published without his permission. In order to validate the ratings submitted by the States, the Public Health Service periodically spot checks such ratings and evaluates the work of each participating State, including its laboratory program.

This voluntary program has grown considerably during the last 10 years. It has facilitated the movement of fluid milk and milk products in interstate and intrastate commerce because it has provided State and local milk sanitation authorities with reliable information on the sanitary status of available supplementary supplies of milk. It has made it unnecessary for State and local milk sanitation agencies with full faith and confidence in the program to send their own personnel to make direct inspections of distant sources and thus has permitted them to devote more time and resources to strengthening local programs. This has reduced the number of duplicate inspections of a single interstate source, a practice which we believe to be both unnecessary and extremely wasteful. Agreement has been reached among a large number of milk sanitation authorities as to standards for the sanitary control of milk supplies to be shipped into their jurisdiction from out-of-state sources.

Another impact of the voluntary program has been the development of a high degree of uniformity in the application of sanitary standards brought about through standardization of procedures used by State milk sanitation rating personnel. This, in turn, has effected greater uniformity in the application of milk sanitation standards by local agency personnel. As a result, in many areas, a feeling of mutual confidence and respect for the work of others has developed between local health departments and between State milk sanitation agencies as well, replacing former attitudes of suspicion and distrust.

A number of States and municipalities have utilized the philosophy and principles of the voluntary interstate program to facilitate intrastate acceptance of milk. This has led to the establishment of reciprocal acceptance programs between municipalities, and in one State, Wisconsin, to the establishment of an intrastate certification program.

Still another impact has been the stimulus to improve sanitary quality. Local health departments have been stimulated to attain and maintain high levels of supervision. Management has become more interested in the sanitation status of their company's supplies, and, in many areas, more quality control work is being done by industry. This is reflected in the average ratings for all interstate milk shippers published in the list of Sanitation Compliance Ratings of Interstate Milk Shippers. In the

January 1, 1962, list the average of compliance ratings for the raw supplies of listed shippers is 92.99 percent, and the average rating for pasteurized milk supplies of listed shippers is 93.98 percent.

Also, as more and more high-quality supplies have become available, questionable and inferior supplies, previously in a position to compete for milk shortage markets, have been largely eliminated.

The voluntary program has led to improvements in State and local laboratory control procedures. To be eligible for certification, each shipper's supply must be under a program of routine laboratory control which has been checked by the State laboratory agency as complying substantially with the American Public Health Association's Standard Methods for the Examination of Dairy Products, and with the provisions of the Public Health Service Milk Ordinance and Code. This has led to the development of a system for certifying State and local laboratories performing examinations of milk shipped between States. The Public Health Service has now certified the laboratories of 49 States and the District of Columbia, 45 of which have established certification programs for local health department and industry laboratories.

Participation of States in the voluntary program has also had the effect of accelerating action by State and local agencies on specific milk sanitation problems. An example is animal disease control programs, specifically brucellosis control. Many States expedited the initiation of such control programs in order that their shippers would not be ruled out of competitive markets where State law required that all milk sold be from herds under an adequate program for eradication of brucellosis. Because of the number of participating States, the resources of State and local health departments can also be quickly brought to bear on emerging problems of public health significance. As an example, in 1960 action was taken by the executive committee of the National Conference on Interstate Milk Shipments and by the Public Health Service requiring, as a prerequisite for shipper certification, initiation of an adequate testing program for the control of antibiotics in milk.

Regulations as Barriers

We regret to say that not all developments have been favorable to free movement of milk between States. The voluntary program has opened a number of markets which were previously closed by providing health authorities with a means for obtaining reliable information on the sanitary status of the "outside" supplies. However, being voluntary in nature, it has not and cannot eliminate the deliberate or unreasonable use of health regulations as trade barriers.

There is considerable evidence to indicate that milk sanitation regulations of some States and municipalities are frequently used to obstruct the movement of milk of high sanitary quality in interstate commerce, and not solely for the purpose of protecting the public health. Such obstruction may result from legal limitations contained in the laws and regulations of a given jurisdiction; from so-called practical difficulties in the inspection of farms or plants located in distant areas when a community insists on making its own inspections as a prerequisite for acceptance of out-of-state milk; from special sanitation requirements imposed on out-of-state supplies; from the levying of high inspection fees; or from administrative policy which has been established for economic purposes.

Recently there have been indications of new efforts to restrict the interstate movement of milk through the use of health regulations. The Public Health Service has long held the view that milk sanitation regulations were for the express purpose of protecting the public health and should not be used to regulate the economic aspects of milk marketing. We should like to emphasize that the Service's objections to the misuse of health and milk sanitation regulations as trade barriers do not stem from any opinions we may hold concerning the economic regulation of milk marketing. Our concern in this matter is that we believe public health regulations should be kept separate from economic regulations so that they will not be subject to economic pressures.

In Prospect

What of the future? Prophesying is always a hazardous business. However, unless current

trends in population growth and population concentration are halted by a catastrophe, certain facts seem clear. It has been estimated that by the end of the century, in just 38 more years, the nation's population will reach the astounding figure of 320 million, of whom some 236 million persons will be concentrated in cities and in sprawling metropolitan complexes (*11*). These metropolitan complexes, some of which are already beginning to appear, will not be bounded by and will have little relationship to existing municipal, county, or even State lines. Looking at this population forecast, and assuming no increase in per capita consumption, one can readily see that a tremendous increase in milk production will be required in the coming years merely to satisfy the minimal demand if milk is to continue in its role as a major item of the American diet. One can anticipate that our surpluses will disappear, that the milksheds of metropolitan centers will be unable to cope with the demand, and that many of the cities which have adopted market-restricting practices will have to look to the milk surplus areas for a large portion of their supplies.

One can also foresee that there will be drastic changes in the future with regard to methods of processing and merchandising milk and milk products which will be brought about both by technological advancements and changes in consumer preference. In this connection, it is not outside the realm of possibility for canned whole milk and dry milk to take over a large portion of the fluid market.

It is obvious that changes in our present concepts of sanitary control of milk are inevitable and that present administrative practices, based on jurisdictional boundaries and local economic considerations, will also have to change. Undoubtedly, the pressures brought about by population growth and population concentration will increase greatly during the next 10 years. Therefore, we urge those health and milk sanitation authorities who have not already done so to reconsider their administrative policies on interstate and intrastate shipments in the light of our changing times, and to modify them appropriately to meet the forthcoming needs.

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