

## **Baltimore's Dairy Industry and the Fight for Pure Milk, 1900-1920**

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The urban milk market of the early twentieth century was a rough-and-tumble world of fluctuating farm supplies, low consumer demand, and cutthroat competition. Although national firms processed and sold other food products, milk distribution remained a local concern until the late 1920s. In the days before bottling plants and refrigerated milk trucks, entry into the market was easy, and hundreds of milk dealers and farmers fought for a share in that market. In Baltimore, as in other cities, fierce competition between the many suppliers meant that cutting prices was more important than improving milk quality. Yet no development in the first two decades of the twentieth century had a greater impact on this multitude of dealers and the structure of the industry itself than the public pressure for pure milk and the formulation of municipal health regulations dealing with milk. The elimination of city cow stables, the pasteurization requirement, the establishment of bacteria standards, and public education about milk quality raised the costs of selling milk, forcing hundreds of dealers out of business. The remaining dealers increased their market shares, taking advantage of the heightened consumer demand for good quality milk. The most significant advances on the farm, the use of milking machines, and in transportation, the use of trucks to transport milk to the city, came during and after World War I; therefore, the pure milk regulations and the public pressure for their enforcement became the first engines for change in the structure of the urban dairy industry. The purpose of this paper is to describe the development of these regulations and their effects on Baltimore's milk distributors.

In the early 1900s, dealers could purchase milk from hundreds of farmers living near the city or its rail feeders. Few of these farmers relied totally on dairying for their income; rather, they switched easily among a number of animal and crop products depending on market conditions. Almost no farmers shipped milk year-round; while more milk than was needed poured into the city during the spring and summer, winter shortages were common. Farmers could choose to sell to restaurants, hotels, or grocery stores, to milk dealers or ice cream manufacturers, or, if they lived close to the city, directly to consumers over their own milk routes. The range of choices available to farmers and the erratic production over the year heightened competition among dealers for milk supplies and forced many to retain their own herds or to rely on more expensive milk from outside the milk shed during times of scarcity.

Baltimore dealers before World War I were generally a transient lot. Prospective milkmen could easily find the old horse, wagon, and cans needed to enter the market. Offering the highest prices they could to farmers, they sold to consumers or grocery stores, seeking customers by going door-to-door because they could not afford even the smallest advertisements in the local papers. Neither dealers nor their farm suppliers seemed interested in long, stable business relationships. Dealers refused to pay for surplus milk they received, and, if they finished the month with inadequate funds, they just went out of business without paying their suppliers the promised high prices. Farmers continuously searched for the dealer offering the highest price, often leaving their former customers in a bind. The result was an inefficient distribution system and insecurity for both farmers and dealers.

Although a few small family-owned dairies, some offering a full line of dairy products, had operated in the market long enough to build a good reputation with consumers, they were outnumbered by hundreds of transients. The high number of small, one-horse operations and stables where cows were fed cheap distillery slops — owned by both transient and established dealers — hindered permanent organization among Baltimore distributors. Small dealers with low overhead often broke higher prices set by dairies who honored commitments to their farm suppliers or who sold other dairy products in addition to milk, keeping profit margins low for everyone and discouraging investment in better facilities and processing equipment. After 1900, thirty of the city's oldest dairies of various sizes did organize the Milk Bottlers' Exchange to represent them with consumers and city officials.

The organization of the Bottlers' Exchange was, in part, precipitated by its members' desire to present a unified front as the fight for pure milk intensified after 1900. Although the improvement of milk quality had been a goal of health officials during the 1800s, the difficulty of ensuring the quality of milk sold from hundreds of city stables and country farms was enormous. Of the many factors that influenced milk quality, Baltimore health officials focused first on milk adulteration, the most serious and unethical deterrent to good quality. Early pure milk crusaders wanted most to stop the dealers' use of formaldehyde and other preservatives to slow the spoilage of old milk. The practice of watering milk, common among both dealers and farmers, was so widespread that nineteenth century health officials worried only when water from contaminated wells was used.

Nineteenth century regulations outlawed sales of adulterated milk and set minimum standards for solids and butterfat. They failed, however, to provide for inspectors to test milk and enforce the regulations. Health officials, therefore, had to depend on investigations by reform groups to keep the issue before the public. These studies and others made by the city chemist documented the state of both city and country milk at the turn of the century. In 1903, 539 herds with over 3,000 cows remained within the city limits [1, p. 26]. Many of the cows in the city were kept near privies behind houses or in dark, dirty sheds without good air or water. In the cellar of one city milk and poultry dealer, the chemist found chickens perched on the rims of open cans filled with milk.

Country milk was in an equally horrible state; milk received at railroad stations contained blood, live frogs, dead mice, leaves, and decomposing vegetables [4, pp. 136-37]. Milk from cows fed distillery slops, purchased most often by the poor, was by far the worst. In 1899, 293 dealers owned swill-fed cows which produced milk described by one observer as thin and blue, with "an oily, greasy, or slimy surface" [7 (4 January 1886, p. 6); (21 October 1899, p. 12)].

Most milk in the early 1900s was sold through home delivery from over 500 wagons equipped with large cans called "churns" or from thousands of grocery stores where patrons without iceboxes could buy two or three cents worth milk dipped from a milk can. Churns and cans were rarely washed, and even on the hottest days, milk was not cooled at any time during distribution. Low standards and lax inspection meant that adulteration remained common. In 1900, standards for solids were so low that four gallons of milk could be diluted to make five and still pass inspection [7 (20 January 1900, p. 12)].

After 1900, the campaign for pure milk increased in conjunction with other municipal reform movements. Physicians and other experts who joined the Health Department intensified the public education campaign begun on a small scale in the late 1800s. More concerned with price than quality, Baltimore consumers had a habit of patronizing dealers with the lowest prices, and this hurt distributors selling a better product at higher prices. The many revelations about poor milk quality in the past had only served to dampen consumer demand. In 1902, per capita milk consumption in Baltimore was only about two-thirds that of other cities [1, p. 11 and p. 26].

Public awareness of the importance of pure milk gradually grew. In 1907, outbreaks of infant cholera and typhoid traced to milk galvanized a coalition of health officials, civic groups, the press, and some dealers to support a tougher ordinance. Designed to eliminate milk contamination through increased inspection, the ordinance also excluded the feeding of distillery slops to cows in city stables and raised the standards for solids and butterfat [4, p. 76; 7 (29 September 1907, p. 20)]. Many dealers, especially those who would be put out of business by the prohibition against distillery slops, opposed the new standards. They enlisted the support of the city councilmen representing East Baltimore neighborhoods where many of the worst stables were located. The supporters of the ordinance, however, mobilized a wide cross-section of the city and state's population, including the Federation of Labor, the Women's Civic League, and Democratic boss John J. Mahon, to push the new law through the council [4, p. 138; 2, p. 417].

Intensifying their publicity about dealers' unsanitary operations, reformers continued their fight even after the law passed. Increasing pressure for pure milk persuaded some dairies to install pasteurizers which had been available since the 1890s, but not previously used in Baltimore, and the bacteria content of milk declined from 5.8 million units of bacteria per cubic centimeter in 1907 to 3.4 million in 1908, still well above today's maximum standard of 100,000 parts per milliliter [4, p. 138]. Regular bacteria testing of milk was added to inspectors' duties after a 1912 outbreak of septic sore throat causing thirty deaths was traced to

milk from a dairy whose pasteurizer had broken down [7 (25 November 1912, p. 14)]. Attacking dealers for not keeping a careful watch on their supplies, the Baltimore Sun reminded them that "the milk trade exists for the service of mankind primarily and for the profit of the dealer secondarily, and not vice versa" [7 (2 July 1913, p. 6)].

With increased inspection, adulteration declined, and the most serious problem for dealers and consumers concerned with quality became the continued sale of milk from cows fed distillery slops. Almost one-third of the city's milk supply still came from slop-fed cows in 1916 because the regulations prohibited the feeding of slops to the remaining cows within the city limits only and did not bar the sale of milk from these cows. Forced out of the city, stable owners simply set up shop in nearby suburbs and continued to sell milk from, according to one observer, "cattle whose health is questionable, from stables which are filthy" [7 (21 January 1917, p. 14; 28 September 1916; 30 September 1916, p. 14)].

These stable owners and other small dealers who did not have the capital to make improvements felt threatened by the press and reform groups, who, said one dealer, had convinced consumers "that only high-priced milk can be good milk" [7 (20 July 1913, sec. 4, p. 8)]. The creation of City Dairy in 1914, the result of a merger between three members of the Bottlers' Exchange, only widened the rift between small dealers and the Exchange; small sellers feared that the new dairy would steal their customers with its emphasis on quality in its modern new plant. Protesting dealers and some farmers believed that the agitation by reformers had made consumers "afraid to touch milk," decreasing demand and forcing dealers to cut back the amount of milk they purchased from farmers [7 (2 November 1915, p. 6)]. They criticized health officials for stirring up unnecessary consumer fears about bacteria and described how healthy their children were and how generations of their family members had grown up drinking milk from their herds before anyone had ever heard of bacteria.

Claims about the purity of milk by farmers and dealers could not combat increasing evidence linking the milk supply to disease. Each year the Health Department traced several cases of typhoid to milk. A 1916 typhoid scare again heightened public pressure on city officials to make pasteurization mandatory and prevent the consumer from, according to The Sun, "buying typhoid in the shape of milk" [7 (5 September 1916, p. 16)]. Although 60 percent of the milk sold in the city by 1916 was pasteurized, the equipment used was often the cheapest available and not carefully cleaned or maintained. The coalition that had secured the passage of earlier laws reorganized to fight for pasteurization standards. Representatives of civic and labor groups, members of the Bottlers' Exchange, Johns Hopkins University doctors, and, for the first time, an organization representing most of the milk shed's dairy farmers helped to write a tough new ordinance, which was introduced in the city council in January 1917. The ordinance set new bacteria standards for milk and subjected all farms, pasteurization plants, and dairy employees to inspection. Requiring that all milk be pasteurized, it also prohibited the sale of milk from cows fed distillery slops and barred all cows from within the city limits. Moreover, all milk had to be bottled and capped by machine in plants located in the city, and the ordinance also gave the

city more control over the entrance of new dealers into the market by requiring dairies to buy a ten-dollar permit to establish a milk plant and manufacture and sell dairy products [4, p. 140; 7 (21 January 1917, p. 14; 30 January 1917, p. 4)].

The heated debate over the ordinance continued during several months of city council hearings. Battling the coalition of ordinance supporters, small dealers and stable owners protested that they could not afford the estimated \$500 cost of pasteurization equipment and bottles. The Bottlers' Exchange angered these small dealers by supporting individual plants rather than a proposed centralized bottling plant built by the city. The Milk Dealers and Ice Cream Manufacturers Association, representing 200 small dealers, asserted that the high cost of compliance would force small independent dealers out of business and create a milk trust that would increase prices to consumers without giving any more money to farmers. Members of the Bottlers' Exchange denied that prices would increase with the advent of pasteurization and stated that even members who did not currently pasteurize their milk supported the new regulations [7 (4 October 1916, p. 16; 18 November 1917, p. 14)].

Opponents of the ordinance sought public support by casting doubts on the value of pasteurization, stating that the equipment would become dirty and spread typhoid, polio, and other diseases. Many dealers believed that pasteurization was unnecessary tampering with milk, which only needed to be boiled by consumers before it was used. Attacking the modern Baltimore housewife who was too lazy to boil her milk, one dealer stated that the pasteurization ordinance was "upholding a lot of thriftless women in thriftlessness" [7 (21 February 1917, p. 16)].

While small dealers retained some support from council members and consumers concerned about escalating milk prices, critics such as the *Sun* wondered "whether a few small milk dealers should be protected in the right to peddle what may contain disease poison, or whether more than a half million people should be protected in their right to life and health" [7 (13 March 1917, p. 16)]. Pure milk crusaders reminded councilmen of the links between impure milk and disease and appealed to the civic pride of Baltimoreans, stating that the city needed the regulations to keep up with other cities. They also added an emotional appeal, testifying that the ordinance would protect the poor and all of the city's children. Raising the specter of dying infants, women told the council, "if we do not pass the bill, we will realize some day that we have killed a great number of children" [7 (13 March 1917, p. 16)].

In the end, the predictions of a milk trust could not compete with images of sick and dying babies, and the ordinance passed in May 1917 with only one dissenting vote. Although they were given until November to buy equipment and bottles, many sellers decided to test the city's resolve to enforce the ordinance by continuing to sell loose milk from wagons. When inspectors responded in early November by spilling milk not sold in bottles, these dealers quickly seized on this practice as a means of turning public opinion against the new law and invoked wartime patriotism and concern for children when they criticized the spilling of milk as wasting food. Stirring up fears of a milk shortage unless the Health Department stopped enforcing the bottling requirement, members of the

Milk Dealers Association sarcastically observed that starving children would not have to worry about typhoid. Stressing the incongruity of the policy of spilling milk with the nation's wartime campaign to conserve food, one dealer said that the destruction of milk "is ridiculous enough to make the starving babies in Belgium weep and the sneering devils in Germany laugh with sardonic glee" [7 (19 November 1917, p. 4)]. The protests persuaded the department to add rennin to the milk instead of spilling it, allowing the coagulated milk to be fed to livestock.

An outbreak of infant dysentery that claimed over forty lives each week in the hot summer of 1918 showed that health officials had not yet perfected the enforcement system. Many of the deaths were traced to milk that had not been pasteurized or refrigerated properly or that was put in unsanitary bottles. As many as one-third of the city's dealers continued to ignore provisions of the ordinance, often selling milk even after their permits were revoked or they were indicted for violations [7 (20 July 1918, p. 7)]. In response to pressure from the Mayor, the press, and consumers to put these dealers out of business once and for all, the Health Department increased the size of its inspection force and speeded efforts to prosecute violators. Effects of the tougher enforcement became apparent when, in 1918, no cases of typhoid were traced to the milk supply. The average bacteria content of milk after pasteurization decreased from 650,000 units per cubic centimeter in 1918 to 52,000 in 1919 and 11,000 in 1920 [7 (8 May 1920, p. 7)]. By 1920, the Health Department could add the promotion of milk consumption to its enforcement duties. Per capita milk consumption began to rise slowly with the quality from a low of 0.39 pints in 1902 to 0.54 pints in 1922 [6 (15 January 1924, p. 2)].

This improvement in quality had not come easily. Wartime inflation and the need for new equipment pushed dealers' costs up an average of 22 percent from the summer of 1918 to March 1919. While operating margins rose 21 percent, problems with new equipment increased repair costs by 50 percent [7 (7 March 1919, p. 14)]. Although a few small dairies tried to increase efficiency by operating joint bottling plants, economies of scale did not currently exist for any Baltimore dairy. In the first few years after the 1917 ordinance, larger dairies, in fact, recorded higher unit costs than small dairies because they received closer scrutiny from health inspectors and because of the higher equipment costs involved in producing and selling a full line of dairy products [7 (26 February 1919, p. 14)].

The new costs of dairy operation combined with the prohibition on distillery slops as cattle feed to decrease the number of dealers serving the market. In 1917, 300 dealers sold milk in Baltimore and no single dairy controlled more than 15 percent of the market [5, p. 160; 7 (10 February 1917, p. 5)]. In 1919, fewer than 100 dealers remained, and the three largest dairies controlled 50 percent of the market [7 (1 March 1919, p. 14)]. Small dealers, including thirteen members of the Bottlers' Exchange, left the market or merged with larger distributors because they found it harder to compete with dairies who had money for advertising and were building storage and manufacturing facilities, modern bottling plants, and country receiving stations. Almost all stable owners who had fed distillery slops sold their cows and left the market. Entry into the

dairy business also became more difficult because the requirement that dairies possess pasteurization and bottling facilities in the city took away the option of selling milk directly to consumers from farmers living near Baltimore. Few farmer-distributors or outsiders felt that the costs of building a new plant to satisfy health standards were low enough to justify entry into a market where established dealers were getting out.

Health regulations in the first two decades of the twentieth century did benefit progressive farmers by increasing consumer demand for country milk. As farmers began to give priority to their dairy operations, fluctuations in feed costs and milk prices became more critical. High feed costs during World War I forced dairy farmers to organize a bargaining cooperative, the Maryland State Dairymen's Association (MSDA), to secure higher prices. As the number of dairies declined, the dealers who remained were more willing to work with the cooperative to stabilize prices and improve the quality of milk. Needing a steady supply of good-quality milk, these dairies appreciated the cooperative's intervention with farmers when it promoted even production and mediated in disputes between dealers and irate shippers. In return, dealers promised to cooperate in handling periodic surpluses and to buy members' milk at a fair price. Because the cooperative could guarantee an adequate supply of milk at a good price, both dealers and the MSDA supported a 1924 city ordinance that prohibited the sale of milk from outside the milk shed except in emergencies.

The emergence of the dairy farmers' cooperative as an influential organization capable of negotiating with the dairies marked one important change in the Baltimore milk market after World War I. During the twenties and thirties, the improvement of state roads and construction of country receiving stations facilitated the transportation of milk by truck and made dairying an option for many more farmers who gradually improved productivity over the next twenty years by culling poor-producing cows and purchasing milking machines. The trend toward consolidation continued among the dairies, culminating in the purchase of the city's largest dairy by National Dairy Products Corporation in 1930. By 1936, the Baltimore subsidiary of the corporation sold 55 percent of the city's milk, and only twenty-five other dealers supplied the rest of the market [3, p. 49].

While the developments of the twenties and thirties tended to promote farmers' specialization in dairying and to increase market concentration in the hands of a few distributors, they only reinforced trends already emerging before 1920. Government action and public awareness of what determines milk quality had a greater effect on the formation of the modern Baltimore dairy industry than either technology or transportation changes. By setting the standards by which dairies could do business, the authors of Baltimore's pure milk regulations also unwittingly defined the structure of the urban dairy industry. Early battles for pure milk raised consumer awareness and encouraged some dealers to emphasize the quality of their milk in order to distinguish themselves from hundreds of competitors. The ordinance of 1917 raised the costs of conducting the milk business for everyone and severely restricted the entry of new dealers. Forcing the low-cost dealers out of business, the law enabled more responsible dairies to obtain new customers, while the expenses

involved in pasteurizing, bottling, and distributing milk under the new laws encouraged them to increase efficiency. Larger, more efficient firms became the targets of national dairy companies interested in expanding into fluid milk distribution, thus increasing the concentration begun when Baltimore first became serious about the milk its children drank.

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## BANKING IN EARLY AMERICA