A Northeastern States Code for Milk for Pasteurization*

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MUCH has been accomplished by health officials and others during the past thirty years in improving the safety and quality of milk. Some enforcement officials have reached the same goal as others but by different methods of approach. There has been a friendly spirit of rivalry between authorities in different areas each claiming the ideal milk supply. This competition was helpful in the early development of safe milk supplies as was the use of the grading system. However, in milk sanitation as in many other things as we approach the ideal we reach the zone of diminishing returns. That is the place where a great amount of effort will accomplish a very minor improvement. Furthermore, there is a tendency at this stage to demand improvements in appearance only and to consider them to be of equal importance with items that have an effect on the quality of the milk and even with items directly affecting safety.

Either in an honest effort to make the milk supply of one city or state better than that of a neighboring city or state, or with a view to establishing a difference on paper, the stringency of standards has been increased and new requirements have been added to milk codes. Less attention has been given in some instances to improving compliance with essential regulations than to multiplying the requirements or otherwise raising standards. Of course there have been some exceptions to this practice but it has been difficult to break down an archaic precedent.

It is quite generally acknowledged that the ultimate goal is to supply every consumer with safe milk of good flavor, appearance and keeping qualities. Experience has shown that the community with the most stringent regulations does not necessarily have the best milk. Is it not time to reevaluate our multifarious and sometimes divergent regulations and enforcement procedures with a view to simplifying them? Then more effort could be and should be devoted to improving the enforcement of these fundamental requirements designed to make all milk supplies safe and of good quality.

Beyond this point is the field of esthetics. If consumers want esthetically perfect or almost perfect milk it could be supplied at a price under super-regulations established and enforced by the industry. It is outside the field of public health. Health officials should make it clear to parents with low incomes that it is neither necessary nor advisable for them to deprive themselves of essentials in order to supply their children with a "De luxe" grade of milk while the standard grade is safe and nutritious.

The testing of milk on the receiving deck or platform of milk plants as well as the laboratory examination of samples collected there has made it quite evident that the results of farm inspections or farm scorings are not reflected in the quality of the milk delivered at the plant. Since the ultimate purpose of dairy farm control is to secure the

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delivery of safe milk of high quality at the receiving station, it would seem to be sound policy to stress farm requirements that have been shown to have a direct bearing on either the safety or quality of the milk and to eliminate those which have been demonstrated to have no such bearing. Also in enforcement it is advantageous to place more emphasis on examining the milk and somewhat less on inspecting the dairy farms. A dairyman generally is willing to cooperate in improving equipment or changing practices when it is shown that the old equipment or practice has resulted in the delivery of milk of poor quality. Otherwise he is inclined to take the attitude that the requested change is unnecessary and that the inspector is arbitrary and capricious.

It appears that in this time of war when it is important to conserve materials and man power it is especially important that we do everything possible to simplify dairy farm regulations and their enforcement. The value of such action becomes even more evident when we consider that this can be done without harming and with a strong possibility of improving the sanitary quality of the milk delivered.

With this objective in mind Lester T. Tompkins, Director of the Division of Dairying and Animal Husbandry of the Commonwealth of Massachusetts in 1942 instigated a series of meetings of [1] officials responsible for the work in milk sanitation in the six New England states and in New York and New Jersey. At the final meetings representatives [2] of the United States Public Health Service, the health department of the City of Boston and the New York City Health Department participated.

The group formulated the appended set of farm regulations relating to the production of raw milk for pasteurization. They are modifications of the United States Public Health Service ordinance which, without modification, was believed to be too stringent and not applicable in some respects to this area. It is understood that milk produced under these regulations when properly enforced in territory outside their jurisdiction is acceptable to the various states and cities represented in so far as local legal restrictions will permit.

The work done also included the preparation of a manual for the guidance of inspectors in enforcing these regulations which is based on the United States Public Health Service Code. It is too lengthy to publish here.

The Northeastern States regulations with the addition of some requirements such as the use of chlorine rinses on utensils, cows' udders and milkers' hands were adopted by the United States Public Health Service as [3] Emergency Sanitation Standards for Raw Milk for Pasteurization.

The drafting of the simplified Northeastern States code is a first step in a broad program to rationalize the sanitary control of dairy farms. Further steps might logically be the general adoption by the States concerned, of these or even more simple regulations as peace time standards; the general inspection of all dairy farms producing milk for human consumption in any form by the state authorities with emphasis on enforcement on an area basis regardless of the destination of the milk; and the inauguration of a system of surveying the results of inspections by each State so that such results may be freely accepted by other states without duplicating dairy farm control.

The adoption of such a system would overcome many inconsistencies in our present more or less complicated programs for sanitary control within this area. While it is recognized that this would break down artificial state barriers allowing the free flow of milk, this is an economic rather than a health consideration. Under this program arguments about conflicting farm requirements or procedures by adjacent health agencies would be eliminated. It would make it impossible for a slovenly

dairyman to find a market for his milk for any edible product. It would make it easier for the vast majority of dairymen in this area to meet essential health requirements and establish stable markets for quality milk. It would make it easier to prevent the transfer of diseased cattle from one dairy herd to another. In general it should lead to safer supplies of milk and milk products of high quality.

Northeastern States Emergency Sanitation Standards for Raw Milk for Pasteurization

ITEM 1r. COWS, TUBERCULOSIS AND OTHER DISEASES

Except as provided hereinafter, a tuberculin test of all herds and additions thereto shall be made before any milk therefrom is sold, and at least once every 12 months thereafter, by a licensed veterinarian approved by the State livestock sanitary authority. Said tests shall be made and any reactors disposed of in accordance with the requirements approved by the United States Department of Agriculture, Bureau of Animal Industry, for accredited herds. A certificate signed by the veterinarian or attested to by the health officer and filed with the health officer shall be evidence of the above test: Provided, That in modified accredited counties in which the modified accredited area plan is applied to the dairy herds the modified accredited area system approved by the United States Bureau of Animal Industry shall be accepted in lieu of annual testing.

Cows which show an extensive or entire induration of one or more quarters of the udder upon physical examination shall be excluded from the milking herd. Cows giving bloody, stringy, or otherwise abnormal milk, but with only slight induration of the udder, shall be excluded from the herd until reexamination shows that the milk has become normal.

For other diseases such tests and examinations as the health officer may require shall be made at intervals and by methods prescribed by him, and any diseased animals or reactors shall be disposed of as he may require.

ITEM 2r. DAIRY BARN, LIGHTING

A dairy or milking barn shall be required and used, and in such sections thereof where cows are milked, windows shall be provided and kept clean and so arranged as to insure adequate light properly distributed, and when necessary shall be provided with adequate supplementary artificial light.

ITEM 3r. DAIRY BARN, AIR SPACE AND VENTILATION

Such sections of all dairy barns where cows are kept or milked shall be well ventilated and shall be so arranged as to avoid overcrowding.

ITEM 4r. DAIRY BARN, FLOORS

The floors and gutters of such parts of all dairy barns in which cows are milked shall be constructed of concrete, tight wood, or approved impervious and easily cleaned material. The floors shall be graded to drain properly. Floors and gutters shall be kept clean and in good repair. No pigs or fowl shall be permitted in the barn used for milking. Horses and calves shall be separated from the milking part of the barn by stalls or pens.

ITEM 5r. DAIRY BARN, WALLS AND CEILINGS

The walls and ceilings of all dairy barns shall be whitewashed once each year or painted once every 2 years, or oftener if necessary, or finished in an approved manner, and shall be kept clean and in good repair. In case there is a second story above the part of the barn in which cows are milked, the ceiling shall be tight.

ITEM 6r. DAIRY BARN, COW YARD

All cow yards shall be graded and drained as well as practicable and kept clean.

ITEM 7r. MANURE DISPOSAL

All manure shall be removed and stored or disposed of in such manner as to reduce the breeding of flies and prevent the access of cows to piles thereof.

ITEM 8r. MILK HOUSE OR ROOM, CONSTRUCTION

There shall be provided a milk house or milk room in which the cooling, handling, and storing of milk and milk products and the storing of milk containers and utensils shall be done. (a) The milk house or room shall be provided with a tight floor constructed of concrete or other impervious material, in good repair, and graded to provide proper drainage. (b) It shall have walls and ceilings of such construction as to permit easy cleaning, and shall be well painted or finished in an approved manner. (c) It shall be well lighted and ventilated. (d) It shall have self-closing doors which, in the case of screen doors, shall open outward, and all other openings shall be effectively screened unless other effective means are provided to prevent the entrance of flies. (e) It shall be used for no other purposes than those incident to the handling of milk, and shall not open directly into a stable or into any room used for domestic purposes.

ITEM 9r. MILK HOUSE OR ROOM, CLEANLINESS AND FLIES

The floors, walls, ceilings, and equipment of the milk house or room shall be kept clean at all times. All means necessary for the elimination of flies shall be used.

ITEM 10r. TOILET

Every dairy farm shall be provided with one or more sanitary toilets conveniently located and properly constructed, operated, and maintained, so that the waste is inaccessible to flies and does not pollute the surface soil or contaminate any water supply.

ITEM 11r. WATER SUPPLY

The water supply for the milk room and dairy barn shall be properly located, constructed, and operated, and shall be easily accessible, adequate, and of a safe, sanitary quality.

ITEM 12r. UTENSILS, CONSTRUCTION

All multi-use containers or other utensils used in the handling, storage, or transportation of milk or milk products must be made of smooth nonabsorbent material and of such construction as to be easily cleaned, and must be in good repair. Joints and seams shall be soldered flush. Woven wire cloth shall not be used for straining milk. Single service filters shall be used.

ITEM 13r. UTENSILS, CLEANING

All multi-use containers, equipment, and other utensils used in the handling, storage, or transportation of milk and milk products must be thoroughly cleaned after each usage.

ITEM 14r. UTENSILS, BACTERICIDAL TREATMENT

All multi-use containers, equipment, and other utensils used in the handling, storage, or transportation of milk or milk products shall between each usage be subjected to an approved bactericidal process with steam, hot water, chlorine, or hot air.

ITEM 15r. UTENSILS, STORAGE

All containers and other utensils used in the handling, storage, or transportation of milk or milk products shall be stored so as not ot become contaminated before being used.

ITEM 16r. UTENSILS, HANDLING

After bactericidal treatment no container or other milk or milk product utensil shall be handled in such manner as to permit any part of any person or

his clothing to come in contact with any surface with which milk or milk products come in contact.

ITEM 17r. MILKING, ABNORMAL MILK

Abnormal milk shall be kept out of the milk supply and shall be so handled and disposed of as to preclude the infection of the cows and the contamination of milk utensils.

ITEM 18r. MILKING, FLANKS

The udders, teats, flanks, bellies, and tails of all milking cows shall be clean and free from visible dirt at the time of milking.

ITEM 19r. MILKERS' HANDS

Milkers' hands shall be washed clean immediately before milking and kept clean and dry during the process of milking. Wet-hand milking is prohibited.

ITEM 20r. CLEAN CLOTHING

Milkers and milk handlers shall wear clean outer garments while milking or handling milk, milk products, containers, utensils, or equipment.

ITEM 21r. MILK STOOLS

Milk stools shall be kept clean.

ITEM 22r. REMOVAL OF MILK

Each pail or can of milk shall be removed immediately to the milk house or straining room. No milk shall be strained in the dairy barn.

ITEM 23r. COOLING

Milk must be cooled immediately after milking to 60° F. or less, and maintained at that temperature until delivered and dumped, except morning's milk delivered before 9 A. M. Standard Time and night's milk delivered before 8 P. M.

ITEM 24r. TANK TRUCKS AND TANK CARS

Milk tank trucks and tank cars shall be of approved sanitary construction. They shall be thoroughly cleaned after each usage and subjected to an approved bactericidal process before being used. After bactericidal treatment they shall be so stored and handled as not to become contaminated. While containing milk or cream they shall be marked and sealed in an approved manner. For each tank shipment a bill of lading containing all necessary information shall be prepared in triplicate and shall be kept on file by the shipper, the consignee, and the carrier for a period of 6 months for the information of the health officer.

ITEM 25r. MISCELLANEOUS

All vehicles used for the transportation of milk or milk products shall be so constructed and operated as to protect their contents from the sun and from contamination. All vehicles shall be kept clean, and no substance capable of contaminating milk or milk products shall be transported with milk or milk products in such manner as to permit contamination.

The immediate surroundings of the dairy shall be kept clean and free of health nuisances.

BACTERIAL STANDARDS

The plate count or the direct microscopic count of clumps of raw milk for pasteurization as delivered from the farm shall not exceed 200,000 per milliliter, in more than one sample out of the last four samples taken on separate days. The corresponding limits for milk received at a pasteurization plant from a receiving station shall be 400,000 per milliliter. The count of raw cream for pasteurization shall not exceed 400,000 per milliliter at the place of separation, nor 600,000 per milliliter at the pasteurization plant if shipped from the place of separation.

Counts shall be determined in accordance with the current edition of Standard Methods for the Examination of Dairy Products of the American Public Health Association.

RECEIVING STATIONS

Receiving stations shall comply with the standards of the Milk Ordinance and Code recommended by the United States Public Health Service.

FREQUENCY OF INSPECTION AND SAMPLING

Each receiving station shall be inspected at least monthly. Each producing farm shall be inspected at least annually and samples for bacteriological determination shall be taken from each producer and examined at least monthly.

REFERENCES

1. Participants included H. E. Bremer of Vermont, H. C. Gòslee of Connecticut, C. P. Osgood of Maine, A. B. Pike of New Hampshire, W. W. Scofield of New Jersey, A. Simonini of Rhode Island, L. T. Tompkins of Massachusetts and W. D. Tiedeman of New York.
2. A. W. Fuchs of the United States Public Health Service, F. E. Mott of Boston and Sol Pincus of New York City.
3. *Journal of Milk Technology,* 101, March–April 1943.

KEENAN WITH STANDARD CAP AND SEAL

Dr. John A. Keenan, national authority on milk and dairy products, has been named executive vice president of Standard Cap and Seal Corporation.

Dr. Keenan comes to Standard Cap and Seal from The Carnation Company, where he created and for three years occupied the post of Director of Nutritional Research. Prior to this connection he was for six years production manager of the Whiting Milk Company, in Boston, where he headed up cost, processing, and distribution.

A chemistry graduate of the University of Wisconsin, he took his doctorate there in Biochemistry and Nutrition, specializing in Vitamin B complex and Vitamin D. For two years thereafter he was associated with Drs. Steenbock and Elvhjem at the Wisconsin Alumni Research Foundation, going from there to the Whiting Company.

Dr. Keenan is a member of the INTERNATIONAL ASSOCIATION OF MILK SANITARIANS and the Institute of Food Technologists. For the past three years he has served as associate editor of the *Journal of Milk Technology,* and as chairman of the committee on milk and dairy products of the American Public Health Association.

He will make his headquarters in the Chicago offices of Standard Cap and Seal Corporation.