

A SUGGESTED SANITARY STANDARD FOR FREEZER-DISPENSED ICE MILK, MALTED MILK, AND SHAKES

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The Executive Board of the Wisconsin Intrastate Milk Shippers Conference directed the appointment of a Committee to review standards and problems in the production and dispensing of soft-serve freezer-dispensed products, including beverages made with dairy products, such as soft-serve dispensed goods, malts, and shakes. The Committee was requested to propose standards for consideration for adoption by the Conference.

The Committee, in a survey of a number of state and city ordinances and regulations, was unable to locate sanitary standards for freezer-dispensed products suitable for Conference action. The survey indicated frequent use of a standard plate count standard of 50,000/ml, and a coliform count standard of 10/g of product. Unpublished data from Committee members, and others, indicated some 25% of samples tested exceeded these standards. Foltz and Mickelson (1) reported 81 of 100 samples of vanilla flavored malted milk shakes contained coliform organisms; 10 contained coagulase positive phage typable strains of staphylococci. Only 39% had 10 or fewer coliforms per gram. The Committee concluded there definitely was need of improved regulatory supervision of these types of freezer-dispensed products. It was deduced that about 60% of the cities within the State make some evaluation of these products, some regularly, others irregularly.

There are a number of conditions in freezer-dispensing operations that can affect adversely the sanitary quality of these products. There often exists inadequate training of personnel in essential sanitary procedures. There is a high turnover rate in personnel, and frequently, particularly in peak seasonal periods, young people are employed. Frequently, utensils are neither properly washed nor sanitized. The conditions of withdrawal of mix from hoppers and freezers, and accumulation of mix

drips and leaks is believed to be a major problem. Failure to maintain constantly low temperature of the mix (such as at time of delivery) is believed frequent. Delivery of mix in bulk quantity is a recent development and requires assessment.

The Committee on Ice Milk and Frozen Desserts submitted a proposed standard for supervision of freezer-dispensed desserts which was adopted by the Wisconsin Conference on Intrastate shipments (2). In the light of apparent need for such standards, it is suggested for application elsewhere.

SUGGESTED SANITARY STANDARDS FOR FREEZER-DISPENSED FROZEN DESSERTS

Freezer-dispensed frozen desserts, including soft-serve goods made with dairy products, ice milks, malts, and shakes.

Bacteriological Standards. Sanitary procedures in the processing, handling and storing of freezer-dispensed desserts, including soft-serve goods, ice milks, malts and shakes, and ices and other similar desserts shall be such that the finished product shall have a bacterial plate count not to exceed 50,000/g, and a coliform count not to exceed 10/g. Samples of such products used to determine compliance with bacteriological requirements shall be obtained from supplies owned by or in possession of the operator of the dispenser whether stationary or mobile.

Temperature Standards. Dairy product mix shall be delivered to the dispenser operation and therein held continuously at 45 F or less until the mix enters the freezer-dispenser. Bulk mix shall be delivered only to the operation properly equipped to handle such product. These standards shall also apply to open containers of fluid sterile mix and reconstituted dry mix.

Equipment Standards. New equipment used for preparation and dispensing of semi-frozen soft-serve goods, malts, shakes, ices or similar products shall conform to all applicable standards of construction for such equipment established by the National Sanitation Foundation and the 3-A Sanitary Standards Committees.

Sanitation Procedures. All equipment used in freezer-dispenser operations shall be dismantled, washed, rinsed, and properly left to air dry after each day's use. Related facilities such as malted milk mixers, cups, paddles, spatulas, etc., shall be similarly washed, rinsed, and properly set to drain and dry. All equipment shall be sanitized by solutions containing not less than 100 ppm available chlorine or its equivalent before subsequent use.

When in the opinion of the sanitarian the dispensing equipment, containers, or utensils are unclean, or insanitary, or their use is such that the resulting dispensed product is

¹The following members of the Committee participated in the survey and development of the Standard during 1964 and 1965: Dr. Robert Bradley, Roy Clary, Sylvester Danen, William Ebert, Ed Galloway, Stanley Goldschmidt, Howard Householder, William Hansen, John McClelland, Dr. R. M. Parker, Albert Paulson, A. E. Rost, Albert Schroeder, George Stewart, W. L. Schultz, A. Trinrud, Arnold Van Thullenar, Wesley Wise, Duane York and K. G. Weckel.

contaminated, the sanitarian may attach a quarantine tag to this equipment. Any equipment or container so tagged shall not be used until made acceptable and released from quarantine by the sanitarian.

The following instructions are recommended for guidance of sanitarians and dispenser operators:

1. *Each day*—disassemble all freezer-dispenser machine parts in contact with the mix or product, and properly wash them with detergent solution, rinse, and store to dry. Similarly wash related utensils such as malted mixers, cups, paddles, piping, and so forth.

2. *Each day*—thoroughly rinse the assembled machine, piping, mixer, and the utensils immediately before use with a solution containing not less than 100 ppm chlorine, or an equally effective sanitizer.

3. All mix shall be held at 45 F or less at all times.

4. Mix retained in the hopper, and mix retained in the freezer may be withdrawn at the end of the day into a clean, sanitized, and covered container of approved type and stored at 45 F or less for subsequent use. Mix separately collected from leaks or drips should be discarded.

5. A typed or printed description of the exact washing and sanitizing procedures to be used for the equipment, including

the method of preparing detergent solution and the sanitizing solution (strength and name of sanitizer) and the procedure to be used in salvaging mix and frozen product from the freezer shall be posted conveniently near the freezer.

Posting of Instructions for Personnel.

Typed or printed instructions for personnel shall be posted near the freezer. The instructions shall include:

1. Method of preparing detergent wash solution, (name and amount of detergent, and amount of water).
2. List of all items to be washed with detergent solution.
3. Procedure to be used in salvaging mix and frozen product from freezer hopper, and freezer barrel.
4. Procedure to be used in preparing sanitizing solution, (name and amount of sanitizer, and amount of water).
5. List of all items to be treated with sanitizing solution.

REFERENCES

1. Foltz, V. D. and Ross Mickelson. Sanitary studies on milk shakes. *J. Milk & Food Technol.* 27:139. 1964.
2. Wisconsin Conference on Intrastate Milk Shipments. Proceedings of Conference. October 7, 1965.

PUBLICATIONS OF INTEREST

Editorial Note: Listed below are books, pamphlets and reprints on a variety of subjects considered to be of interest. Request for material should be addressed to the source indicated. Note cost of books and certain items.

Information, Influence and Communication. A collection of 25 papers by social scientists and public relations practitioners. Edited by O. Lerbinger and A. J. Sullivan. Basic Books, Inc., New York, N. Y. \$8.50

Proceedings National Conference on Salmonellosis, March 1964, Atlanta, Ga. Supt. of Doc., Govt. Printing Office, Washington, D. C. 20402 \$1.50

Food Quality: Effects of Production Practices and Processing. G. W. Irving, Jr. and S. R. Hoover, American Soc. for Advancement of Science, Washington, D. C. \$8.50

Explorations in Future Food-Processing Techniques. Review of freeze dehydration and food irradiation. Edited by S. A. Goldblith. The M. I. T. Press, Cambridge, Mass. 02142 \$5.00

Publications of U. S. Dept. of Commerce Clearinghouse for Federal Scientific and Technical Information. (Order from Clearinghouse, Dept. of Commerce, Springfield, Va. 22151 Report No. IDO-10042. Suitability of Potato Products Prepared from Irradiated and Chemically Inhibited Potatoes. \$2.00

Report No. AD-613-950. Induced Radioactivity in Foods and Electron Sterilization. \$3.00

Report No. AD-621-921. Resistance of Microorganisms to Ionizing Radiation Applied to Foods. \$1.00

Milk and Milk Products Equipment. A Guideline for Evaluating Sanitary Construction. Supt. of Doc., Govt. Printing Office, Washington, D. C. 20402. 20c.

Screening Tests for the Detection of Abnormal Milk. Supt. of Doc., Govt. Printing Office, Washington D. C. 20402

Plastics Pipe Standards and Use in Water Systems. Edward H. Look, President, Plastics Pipe Institute. (Order from Portco Corp., Paper and Plastics Div., Vancouver, Wash.) Automation in Deep-Fat Frying. Gifford-Wood, Inc. Hudson, N. Y.

Measurement and Removal of Soil from the Surface of Canning Tomatoes. Agricultural Extension Service. Univ. of California, Davis

Selected U. S. Government Publications. (Order by Catalogue No. from Supt. of Documents, Govt. Printing Office, Washington D. C. 20402)

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Cat. No. D 212-6/3:F 73. Food Operations Reference Manual. (U. S. Navy on-the-job training manual to consist ultimately of 8 sections in looseleaf form. This first increment contains Sec. A, Introduction and Sec. D, Food Production.) 568 pp. \$4.50.

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