Milk: Does It Measure Up?
--One Year Later--

A Report on the Accuracy of Net Content Labeling of Milk

A REPORT BY THE STAFF OF THE FEDERAL TRADE COMMISSION, FOOD AND NUTRITION SERVICE OF THE U.S. DEPARTMENT OF AGRICULTURE, AND OFFICE OF WEIGHTS AND MEASURES OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, IN COORDINATION WITH THE OFFICE OF FOOD LABELING OF THE U.S. FOOD AND DRUG ADMINISTRATION

BASED ON INSPECTIONS BY WEIGHTS AND MEASURES OFFICES IN ALABAMA, ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, CONNECTICUT, DELAWARE, FLORIDA, GEORGIA, HAWAII, IDAHO, INDIANA, IOWA, KANSAS, KENTUCKY, LOUISIANA, MAINE, MARYLAND, MASSACHUSETTS, MICHIGAN, MINNESOTA, MISSISSIPPI, MISSOURI, MONTANA, NEBRASKA, NEVADA, NEW HAMPSHIRE, NEW JERSEY, NEW MEXICO, NEW YORK, NORTH CAROLINA, OHIO, OKLAHOMA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, TEXAS, U.S. VIRGIN ISLANDS, UTAH, VERMONT, WASHINGTON, WEST VIRGINIA, AND WISCONSIN

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Executive Summary

This federal/state study follows up on a study conducted last year on the accuracy of net content labeling of milk and other products. The 1997 study found that compliance with net content labeling requirements was very mixed. Many dairies and packagers did very well, while compliance levels at other firms were poor. In an effort to improve compliance, federal, state and local officials have worked closely with industry members, providing assistance and training to those interested. The follow-up study suggests that this effort has resulted in increased accuracy in net content labeling. This study also shows, however, that further improvement is needed in compliance levels at some packers and dairies.

This follow-up study represents a continuing effort by federal, state and local officials to improve industry compliance with net content labeling requirements. Participants in this study included the staff of the Federal Trade Commission, Food and Nutrition Service at the U.S. Department of Agriculture, and the Office of Weights and Measures at the National Institute of Standards and Technology in the Department of Commerce, in coordination with the Office of Food Labeling at the U.S. Food and Drug Administration, and with state and local weights and measures offices in forty-four states, Puerto Rico and the U.S. Virgin Islands.

Using an inspection procedure adopted by the National Conference on Weights and Measures, forty-six jurisdictions conducted 3355 inspections of milk in schools, institutions, retail stores and dairies. Each inspection involved testing a random sample of packages drawn from a group of packages referred to as an "inspection lot," which consists of packages of the same product, in the same size, with the same label, from the same packer and with the same expiration date. These inspections took place at 1338 locations. At many of the inspection sites, multiple inspection lots were tested. For example, in a single school, inspection lots of whole milk, skim milk and chocolate milk may have been tested. For an inspection lot to be approved, the quantity of contents of packaged goods from the inspection sample must meet two requirements under the testing protocol used. First, the average quantity of contents of packages in the sample must not be a statistically significant amount below the quantity declared on the label. Second, no individual sample package may be under-filled by a pre-specified unreasonable amount, as defined in the test procedures.

Overall, the inspections revealed an increase in compliance with net content labeling requirements compared to last year. The increased compliance was evident across all of the participating jurisdictions, not just the states that had participated in the 1997 study. This year, 81% of the 3355 inspection lots of milk passed, whereas last year, just 55% of the 1331 inspection lots of milk passed. Of the 1775 lots of milk inspected at schools this year, 83% passed inspection. At hospitals, universities and other institutions, 72% of the inspected lots

passed. Of the 1309 lots of milk inspected in retail stores, wholesalers, packaging plants and dairies this year, 81% passed inspection. There was significant improvement in the half-pint containers that are typically served in schools. The approval rate for these 8-ounce packages increased from 48% in 1997 to 81% in 1998.

The reduction in inspection failures suggests that packaging practices at plants and dairies have improved. Such improvements help reduce economic losses to consumers and major purchasers, such as school districts, and help prevent injury to competition caused by short-filling of packages by some industry members. Although there has been an overall increase in the level of compliance with net content labeling requirements, the follow-up study also shows that the compliance level at some dairies and plants is low.

In conducting this survey, weights and measures officials took action against non-complying lots found in retail stores, wholesale firms, dairies and packers by issuing stop-sale orders. State and local officials have contacted manufacturers, dairies and packers regarding problems found, and may conduct additional inspections and take further enforcement actions as necessary. Follow-up action against firms selling non-complying milk to schools is also planned by USDA.

In addition, government agencies will continue to work with industry members to improve compliance levels. This can be accomplished, in part, through additional training of industry members in the areas of statistical process control and other quantity control techniques. In the future, federal, state and local officials will continue to coordinate their efforts to monitor the accuracy of net content disclosures, and may take enforcement actions if significant problems with short-filling are found.

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I. Introduction

In 1997, the staff of the Federal Trade Commission (FTC) coordinated a federal/state project to examine the accuracy of net content labeling of milk and other products. This project was, in part, a response to reports from state and local officials and several media sources of possible short-filling of milk sold in retail stores or served in schools. Inspectors in twenty states found that compliance with net content labeling requirements varied widely from product to product and among states and inspection sites. In particular, almost 46% of inspected lots of milk failed inspection.

A major goal of the 1997 study was to obtain a snapshot assessment of the possible scope of any short-fill problems, and to bring any problems to industry's attention for any necessary corrective action. In the past year, federal and state officials have worked closely with industry members and have provided information, assistance and training to those interested in becoming better informed on how to ensure compliance with net content labeling requirements. A follow-up study conducted this year shows a considerable increase in the overall rate of compliance compared to last year, although the compliance level at some packers and dairies remains low. Industry members that fail to comply with the law are subject to stop sale orders, fines and other legal sanctions.(1)

For the 1997 and 1998 studies, FTC staff worked jointly with the Office of Weights and Measures at the National Institute of Standards and Technology (NIST) in the Department of Commerce, Food and Nutrition Service (FNS) at the U.S. Department of Agriculture (USDA), the Office of Food Labeling at the U.S. Food and Drug Administration (FDA) and state and local weights and measures offices. For the 1998 follow-up study, weights and measures officials in 44 states, as well as Puerto Rico and the U.S. Virgin Islands, visited 1338 schools, universities, hospitals, retailers/wholesalers, dairies and packaging plants in March and April 1998, and examined a total of 3355 inspection lots of milk. (An "inspection lot" is the group of packages selected for inspection and consists of packages of the same product, with the same label and from the same packer.) Overall, more than 81% of inspection lots of milk passed this year, compared to just 55% of the lots of milk inspected last year.

Improvement in compliance with net content labeling requirements is important to help reduce injury to consumers and profit losses for business. For example, short-filling by some industry members may result in injury to competition because a company that complies with the law is at a competitive disadvantage if competing companies short-fill their packages and thereby reduce their production costs. The primary injury caused by short-filling of milk and other products, however, is economic losses to consumers and major purchasers, such as school districts, who are paying for product they do not receive. USDA reports that 6.41 billion gallons of fluid milk were sold in 1997.(2) Dairy producers' revenues from sales of fluid milk exceeded $8 billion. Although much of this milk is sold at retail stores to

consumers, substantial amounts of milk are purchased directly by federal and state agencies, and by other agencies using federal and state funds, for consumption at schools and other institutions such as universities and hospitals.

Part Two of this report provides an overview of federal and state regulation of net content labeling. The role of the organizations participating in the milk studies is discussed in Part Three. Part Four summarizes the results of the 1997 study and presents data from the 1998 follow-up inspections. Part Five describes additional follow-up actions to be taken by federal and state agencies, including business education and enforcement efforts.

II. Federal and State Regulation

Federal and state agencies share jurisdiction over labeling of foods, including milk. Relevant federal laws include the Fair Package and Labeling Act (FPLA) and the Federal Food, Drug and Cosmetic Act (FDCA). Under the FPLA, packages of food and certain other commodities must be labeled with the identity of the commodity; the name and place of business of the manufacturer, packer or distributor; and the net quantity of contents. FDA has enforcement responsibility under the FPLA with respect to food packages. 15 U.S.C. § 1456(a). In addition, food packages with incorrect content disclosures are considered "misbranded" pursuant to the FDCA, which is enforced by the FDA. 21 U.S.C. § 343(e). The FTC has concurrent jurisdiction over labeling of food packages under Section 5 of the FTC Act, which generally prohibits unfair or deceptive acts or practices. 15 U.S.C. § 45. Inaccurate labeling disclosures on food packages are deceptive acts or practices that violate Section 5.

Historically, state and local weights and measures offices have taken primary responsibility for ensuring compliance with net content labeling requirements. State and local officials conduct inspections of packages at all levels, from the packaging plant to the distributor to the retailer. State regulation of net content labeling is subject to two caveats. First, under the FPLA, state laws cannot be "less stringent than or require information different from" FPLA requirements. 15 U.S.C. § 1461. Second, since November 8, 1991, the Nutrition Labeling and Education Act (NLEA) of 1990(3) has preempted state and local laws that are not "identical" to certain corresponding FDA labeling requirements. 21 U.S.C. § 343-1(a)(2). In 1997, FDA published a proposed rule on net content labeling of foods that is modeled on the inspection procedure used in the 1997 study and this follow-up study. The FDA's proposed rule, discussed below, if made final, would codify labeling requirements and inspection practices that are currently in place in many states.

III. Organizations Participating in this Study

The roles and interests of each of the organizations participating in this study are described below.

A. Bureau of Consumer Protection and Bureau of Economics of the Federal Trade Commission

The FTC is a law enforcement agency charged by Congress with protecting the public from unfair or deceptive acts or practices and anticompetitive behavior. The FTC has authority under Section 5 of the FTC Act to ensure truth in advertising and labeling. The FTC can proceed against inaccurate labeling disclosures on all commodities as deceptive practices and can seek remedies ranging from a cease and desist order to redress for consumers injured by deceptive practices. Under the FPLA, the FTC has responsibility for labeling of consumer commodities, excluding food, drugs, devices, and cosmetics.

For both the 1997 study and the 1998 follow-up study, staff of the FTC's Bureaus of Consumer Protection and Economics worked closely with federal and state officials in coordinating inspections, and in collecting and compiling inspection results.

B. Food and Nutrition Service of the U.S. Department of Agriculture

Food and Nutrition Service of the USDA works in partnership with the states to provide needy persons with access to a more nutritious diet. With FNS oversight, the states determine most administrative details regarding distribution of food benefits and the eligibility of participants in the fifteen food assistance programs administered by the USDA. These food assistance programs include the National School Lunch Program and the School Breakfast Program.

In the past year, USDA subsidized approximately 5.6 billion school breakfasts and lunches. Each school day, the National School Lunch Program served over 26 million children in over 94,000 schools. More than half of these children received the meal free or at a reduced price. Over 7 million children participated daily in the School Breakfast Program. About 80% of school breakfasts were served free.(4)

USDA regulations require that eight ounces of milk be offered with every subsidized school breakfast or lunch. If milk supplied to schools is found to be short-filled, USDA can seek administrative remedies ranging from restitution and corrective actions by the dairy producer through suspension and debarment of the dairy producer from future federal non-procurement contracts.(5)

As a result of the 1997 study, USDA took several steps to correct short-filling problems found in the schools. First, USDA requested that its state administering agencies send letters to each of the 20,000 State Food Authorities (SFAs) who are responsible for contracting with dairies and distributors for purchases of milk, juice and other foods for school breakfasts and lunches. These letters provided information about the 1997 study and actions that should be taken if short-filling recurred. SFAs were encouraged to contact state and local weights and measures offices for assistance.

Second, USDA sent letters to each dairy producer and distributor that supplied products to schools that failed to contain the minimum required quantities. These letters expressed USDA's serious concerns with the short-filling events, required that companies promptly initiate corrective action and provide restitution to the schools for products that failed to meet net content requirements.

C. Office of Weights and Measures at the National Institute of Standards and Technology

NIST, in the Department of Commerce, was established by Congress to support industry, commerce, scientific institutions and all branches of government. The Office of Weights and Measures (OWM) at NIST seeks to facilitate trade and protect businesses and consumers by promoting uniformity in weights and measures standards, laws and practices among the states. OWM sponsors the National Conference on Weights and Measures (NCWM), a voluntary standards organization of state weights and measures officials and representatives of industry, consumers and federal agencies. NCWM's goal is to achieve uniformity in laws, regulations and other procedures through local adoption of its standards.

In 1981, NCWM adopted NIST Handbook 133, which was prepared by NCWM and NIST as a procedural guide for determining whether the stated net content on packages conforms to federal and state legal requirements for net content declarations.(6) The goal of compliance testing of packaged goods, as stated in the handbook, is to ensure that the consumer receives the labeled quantity of contents and to advise the manufacturer when improvements in the packaging process are necessary. Although the handbook was developed primarily for use by government officials, it can be useful to commercial and industrial establishments involved in the packaging, distribution and sale of commodities.(7) For example, the procedures set forth in the handbook can form the basis for systematic inspections of net content labeling by manufacturers, wholesalers, distributors and retailers.

Over the past year, OWM officials have met with industry representatives to discuss the findings of the 1997 study and to stress that there would be continued oversight by federal and state officials. OWM officials also stated that OWM and state and local weights and measures offices would provide technical assistance and training in inspection procedures to industry members interested in reviewing and, if necessary, revising their packaging practices.

As it did in the 1997 study, OWM worked closely with the participating jurisdictions in the implementation of this follow-up study and provided training and assistance throughout this project. In early March 1998, the participating jurisdictions sent weights and measures inspectors to a five-day OWM training session, which focused on inspections of milk using the procedures set forth in NIST Handbook 133. In addition, OWM lent measuring equipment to a number of states participating in the project.

D. Office of Food Labeling at the Food and Drug Administration

FDA enforces the FPLA and the FDCA with respect to labeling of food packages. Food products with incorrect content statements are considered "misbranded" pursuant to these Acts. 14 U.S.C. § 1456(a) and 21 U.S.C. § 343(e). Since November 8, 1991, the NLEA has preempted state and local laws that are not "identical" to certain corresponding FDA labeling requirements. 21 U.S.C. § 343-1(a)(2). On March 4, 1997, the FDA's Office of Food Labeling published proposed revisions to FDA's food labeling regulations that pertain to declaration of net quantity of contents on food packages. 62 Fed. Reg. 9826 (1997) (to be codified at 21 C.F.R. §§ 101, 161 and 501).(8)

The proposed FDA rule, which incorporates the procedures in NIST Handbook 133, would establish specific procedures for checking conformance to net content labeling requirements nationwide. Since almost all states currently use the procedures in NIST Handbook 133, FDA's adoption of the proposed rule would codify prevailing state practices pertaining to the net content labeling of foods.(9) Inspectors in both the 1997 study and the 1998 follow-up study used the NIST Handbook 133 procedure and thus conformed to the procedures in the proposed FDA rule.

E. State and Local Weights and Measures

State and local weights and measures offices seek to ensure that transactions based on weight, measure or count are accurate and that goods are sold in a manner that facilitates value comparison by consumers. For example, weights and measures officials check the accuracy of gasoline dispensers, food store scales, and store checkout scanners. They are also responsible for ensuring that the net content declarations on packages of food and other commodities are accurate. State and local offices may order short-filled products off-sale and take other enforcement actions, such as imposing fines.

In the 1997 study, weights and measures inspectors in twenty states conducted inspections of the accuracy of net content labeling of milk, other dairy products and juice. After the results of the 1997 study were released, many states worked closely with industry members to assist them in improving their packaging practices. In a number of states, including, for example, Iowa, Tennessee and Kansas, state weights and measures officials provided training to dairies in the NIST 133 procedure, including how to determine net contents and densities to improve fill controls.

For this follow-up study, weights and measures officials in forty-four states, Puerto Rico and the U.S. Virgin Islands focused on the accuracy of net content labeling of milk. In March and April 1998, weights and measures officials conducted inspections of milk in schools, state and federal facilities, retail stores, wholesalers, packaging plants and dairies. The participating jurisdictions were Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Tennessee, Texas, U.S. Virgin Islands, Utah, Vermont, Washington, West Virginia, and Wisconsin.

IV. Joint Federal/State Studies

The 1998 study is a follow-up to the 1997 study of net content labeling of packages of milk, other dairy products and juice. The results of the 1997 inspections were reported on July 17, 1997.(10) The two studies are discussed and compared below.

A. Study Methodology

Inspections in both studies were conducted in accordance with the NIST Handbook 133 procedures, which use statistical sampling techniques to examine individual lots of packages for conformance with legal requirements. The handbook provides for random sampling

of packages from an inspection lot. For example, all gallons of Brand X whole milk with the same expiration date could be considered an inspection lot. The random sample of packages is measured, using specific procedures and equipment, to determine whether the packages are under-filled.

For the lot to pass inspection, the random sample of packages must meet two requirements. First, the average contents of the random sample of packages must not fall below the stated amount by more than a statistically determined allowance.(11) Second, there cannot be any unreasonable variation in the contents of individual packages. This means, for example, that for an inspection lot of 400 gallons of milk, the lot would fail inspection if any one of the twelve randomly selected test packages were under-filled by more than 2½ fluid ounces.(12)

Weights and measures officials in the participating jurisdictions selected the sites where milk was inspected. Based on available resources, each state and territory attempted to visit as many different sites as possible. Many of the sites included in the 1997 study were revisited in the 1998 study. Although the results of this study cannot be statistically projected to the U.S. as a whole, the total number of inspections and participating jurisdictions is large and provides a good overall national view of industry's current compliance with net content labeling requirements.(13)

B. 1997 Study: Summary of Inspection Results

For the 1997 study, weights and measures inspectors in twenty states conducted 1638 inspections of dairy products and juice at 512 locations, including 296 schools and state and federal facilities and 216 retailers, packagers and dairies.(14) The inspections were conducted over a three-week period in March and April 1997. Of the 1638 inspections, 1331 involved milk. Overall, 45.4% (604 of 1331) of the inspection lots of milk failed due to short-filling. The amount of short-fill in these rejected lots was, on average, very small. Over one-half, 54.3%, of all lots of milk inspected at schools and state and federal facilities failed due to short-filling (369 of 680). Over one-third, 36.1%, of inspected lots of milk at retailers and packagers/dairies failed inspection (235 of 651).

C. 1998 Study: Inspection Results

In the 1998 study, inspectors from forty-four states, Puerto Rico and the U.S. Virgin Islands visited 1338 locations and inspected 3355 lots of milk. The results are reported by jurisdiction, establishment type and product type. The establishments visited were divided into four categories: schools, state/federal facilities (for example, universities and VA hospitals), retailers/wholesalers, and packagers/dairies. Inspectors examined lots of milk at 764 schools, 111 state/federal facilities, 337 retailers and wholesalers, and 126 dairies and packers. The inspected products were divided into three categories: regular white milk (skim, reduced fat and whole), chocolate milk (skim, reduced fat and whole) and other milk products (buttermilk, flavored milk, etc.).

The follow-up milk inspections in 1998 show an increase in the rate of compliance with net content labeling requirements compared to last year. Overall, 81.3% of the inspected lots of milk passed (2728 of 3355), versus 54.6% of the lots of milk inspected in the 1997 study (727 of 1331). In the 1998 rejected lots (627 of 3355), the amount of short-fill was, on average, very small.(15)

Chart 1:
1998 Inspection Results in
20 States that Participated in Both Studies
Versus 26 Jurisdications that Participated Only in 1998 Study

See Appendix A for Supporting Data Tables

The results of the 1998 follow-up study show virtually no difference in overall approval rates between the twenty states that participated in both the 1997 and 1998 studies and the twenty-six jurisdictions (24 states, Puerto Rico and the U.S. Virgin Islands) that participated only in the 1998 study. For the twenty states that participated in both the 1997 and 1998 studies, the overall percentage of lots that passed inspection was 81.7%. For the twenty-six jurisdictions that participated in the 1998 study, but not in the 1997 study, the overall percentage of lots that passed inspection was 81%. These almost identical results suggest that industry attention to the 1997 study, and the business education efforts that followed the publication of the study, had a wide impact and were not limited to just the states included in the 1997 study.

Chart 2:
Percent of Inspections Approved by Type of Establishment

See Appendix A for Supporting Data Tables

In the 1998 follow-up study, of the 1775 lots of milk inspected at schools, 82.9% (1471) passed inspection, compared to 45.8% of the lots of milk inspected in schools in 1997 (274 of 598). Similarly, 81.1% (1062 of 1309) of lots inspected at retailers, wholesalers, packagers and dairies passed inspection, compared to 63.9% of lots of milk inspected at these sites in 1997 (416 of 651). The lowest level of compliance was found in state and federal institutions. Of the 271 lots inspected at hospitals, universities and other institutions, 72% (195) passed inspection. This result, however, is significantly better than the 1997 approval rate of 45.1% for lots of milk inspected at such institutions (37 of 82).

Chart 3:
Percent of Inspections Approved by Type of Milk

See Appendix A for Supporting Data Tables

There was some variation in the percentage of approvals and rejections among the different product categories. For white milk (including skim, reduced fat and whole), 82.7% of all inspection lots passed (1865 of 2254). For chocolate milk (including skim, reduced fat and whole), 79% of all inspection lots passed (785 of 994). The approval rate was slightly lower, 72.9%, for other milk products (including flavored milks, etc.) (78 of 107). These approval rates are all significantly higher than the approval rates for milk inspected in the 1997 study. In 1997, 57.8% of inspection lots of white milk (543 of 940), 44.9% of inspection lots of chocolate milk passed (158 of 352), and 66.7% of inspection lots of other milk products passed (26 of 39).

Chart 4:
Percent of Inspections Approved by Size of Container

See Appendix A for Supporting Data Tables

Inspectors examined milk packaged in quarter-pints, half-pints, pints, quarts, half-gallons and gallons.(16) The highest approval rates were found in 4 oz. (90.5%), half-gallon (84.5%) and gallon (86%) containers. The lowest approval rates were found in pint (72.6%) and quart (75.8%) containers. In comparison, in the 1997 study, the highest approval rates for milk packages were found in gallons (79.3%) and the lowest approval rates were found in half-pints (47.9%) and quarts (51.3%). From 1997 to 1998, the approval rate for half-pint containers increased from 47.9% to 81.4%. This increased approval rate is significant because it is the size container most often served with school meals, and most heavily tested in both years.

Table 5:
Percentage of Short-filling in
Rejected Inspection Lots by Type of Container*

Type of Container	1998 All Rejected Lots of Milk 627 lots	1997 All Rejected Lots of Milk 604 lots
4 oz./118 mL	-1.26% (-.05 oz)	-1.55% (-.06 oz.)
8 oz./235 mL/half-pint	-1.13% (-.09 oz.)	-2.36% (-.19 oz.)
10 oz./295 mL	-1.17% (-.11 oz.)	-----
16 oz./473 mL/pint	-1.10% (-.18 oz.)	-1.06% (-.17 oz.)
32 oz./946 mL/quart	-0.49% (-.16 oz.)	-0.31% (-.10 oz.)
64 oz./1.89 L/(half-gallon	-0.28% (-.18 oz.)	-0.39% (-.25 oz.)
128 oz./3.78 L/gallon	-0.32% (-.41 oz.)	-0.32% (-.41 oz)

*Short-fill percentage is shown as a (-).

Table 5 shows the average percentage of short-fill (and its equivalent in ounces) in rejected inspection lots of milk by the size of the container. In both the 1997 and 1998 studies, the smaller containers had the highest average short-fill percentages and the larger containers had the smallest average short-fill percentages. However, even the higher percentages of short-fill for the smaller containers translate into very small amounts of milk. For example, for the eight ounce containers in 1998, the short-fill percentage of -1.13% equals 9/100ths of an ounce of milk. In the larger containers inspected in 1998, the short-fill of -.32% in gallon containers equals 4/10ths of an ounce. These numbers, of course, are averages and the percentage of short-fill among rejected inspection lots varied substantially.

Table 6:
Distribution of Jurisdictions by Inspection Approvals

% of Inspections Lots Approved	Number of Jurisdictions	Jurisdictions (Total # of Inspection Lots)
less than 69%	7	DE(87), GA(29), KS(101), ME(51), NV(44), PR(23), WV(81)

70 - 79%	9	AL(9), CA(88), IN(66), MI(63), MS(14), NJ(139), PA(120), VT(22), WA(68)
80 - 89%	19	AK(27), AR(168), AZ(151), CO(30), HI(96), ID(30), LA(79), MA(21), MO(163), MT(64), NE(86), NH(27), NM(57), NY(246), OK(115), RI(16), TN(98), TX(114), VI(10)
90%+	11	CT(64), FL(52), IA(58), KY(32), MD(122), MN(51), NC(158), OH(57), SC(51), UT(73), WI(34)

See Appendix B for State by State Inspection Results

For the 1998 follow-up study, individual jurisdictions conducted from 9 to 246 inspections. The percentage of inspection lots approved in the individual jurisdictions ranged from 52% to 98%. Two-thirds (30 of 46) had approval rates of 80% or higher. This approval rate represents a significant improvement from 1997, when only one-fourth of the participating states (5 of 20) had approval rates of 80% or higher. It is important to note that, for some individual jurisdictions, a high number of rejected lots from one or two packers or dairies caused a significant decrease in the overall approval rate for those states.

V. Business Education

A major goal of the 1997 and 1998 federal/state studies is to inform industry of any short-filling problems and to provide information that will enable industry members to examine and, where necessary, improve their packaging practices. All dairies and packagers included in the 1997 study were notified of the study results. Similarly, the results of the 1998 inspections will be provided to all dairies and packagers included in the 1998 follow-up study. In the 1998 inspections, as in the 1997 inspections, inspectors who found short-filling in stores, bottling plants and dairies usually ordered the short-filled products off-sale. In addition, some states have imposed fines.

As it did following the 1997 study, USDA will contact dairies and packers that were identified through the 1998 study as having supplied schools with milk packages that failed to meet net content labeling requirements. Companies which provided short-filled product to schools will be required to provide restitution to schools and initiate corrective action to prevent recurrence of short-filling. If necessary, USDA will initiate additional administrative actions.

The 1998 inspection results show a considerable reduction in short-filling problems compared to last year. Nevertheless, compliance levels at some packers and dairies remain low. These companies, in particular, may be subject to additional inspections and possible enforcement actions if significant problems are found. Industry members interested in assessing the adequacy of their packaging practices can contact federal and state officials to receive information on federal and state requirements regarding the accuracy of net content labeling.(17) Federal, state and local agencies will work with these packers and dairies to correct any problems found. Information is also available in a "Facts for Business" pamphlet developed by participants in the 1997 study.(18)

VI. Conclusion

This 1998 study found that the overall rate of compliance with net content labeling requirements has increased considerably compared to last year. It is likely that the attention focused on this problem in the wake of last year's study led to improvements in packaging practices at some plants and dairies. Such improvements help reduce economic losses to consumers and major purchasers, such as school districts, and help prevent injury to competition caused by short-filling of packages by some industry members.

The government participants hope that continued public attention to the issue of short-filling will lead dairies and other packagers to maintain high levels of compliance with net content labeling requirements. Although the 1998 study shows an overall reduction in short-filling problems compared to last year, compliance levels at some packers and dairies remain low. Industry members that fail to pay sufficient attention to their packaging processes run the risk of government enforcement actions with the possibility of fines, exclusions from government contracts, and government mandates to change their practices. In the future, federal, state and local officials will continue to monitor the accuracy of net content disclosures, and to bring enforcement actions or take other corrective measures if significant problems with short-filling are found.

ENDNOTES

1. For example, inspectors who find short-filling in stores, bottling plants or dairies will usually order the short-filled products "off-sale," which means removing them from store shelves and prohibiting their sale. State laws and regulations require that each food package bear the name of the party responsible for the net content statements on the package. For example, Distributor X contracts with several dairies to package flavored milk and the packages bear the name of Distributor X as the party responsible for the net content statements on the packages. In other instances, the dairy may be the party responsible for the net content statements. Government fines and sanctions for short-filling are generally imposed against the named responsible party.

2. This equals an annual per capita consumption of approximately 24 gallons of fluid milk.

3. The NLEA amended the Federal Food, Drug and Cosmetic Act to require, inter alia, nutrition labeling on foods. 21 U.S.C. § 343.

4. The federal child nutrition programs also include the Special Milk Program, Summer Food Service Program and Child Care Program. USDA estimates that, in fiscal 1997, approximately six billion cartons of milk were purchased for the federal child nutrition programs. FNS Program Information Report, March 1998.

5. In contrast to federal procurement contracts in which the federal government is the direct purchaser, federal non-procurement contracts are those in which another party receives federal funds to pay for purchases. Federal non-procurement contracts include school districts' purchases of milk for federally subsidized breakfasts and lunches.

6. NIST Handbook 133 replaced NBS Handbook 67, which was adopted in 1959 by NIST's predecessor, the National Bureau of Standards. Weights and measures and other public officials, manufacturers, packagers, retailers and trade associations participated in the development of both NBS Handbook 67 and NIST Handbook 133.

7. For copies of NIST Handbook 133, contact: Office of Weights and Measures, NIST North (Bldg. 820), Room 223, Gaithersburg, MD 20899; (301) 975-4004; Fax: (301) 926-0647.

8. In response to FDA's request for public comment on the proposed revisions, FTC staff submitted a comment advising the FDA that significant benefits are likely to result from adoption of the proposed rule. FTC staff stated, "The proposed revisions to FDA regulations would create a well-defined compliance standard that is readily understood by both enforcement officials and industry members" and "would enhance the ability of federal, state and local officials to maintain a level of enforcement that would provide greater incentives for all manufacturers to increase their compliance with net content labeling requirements." A copy of FTC staff's comment, filed November 26, 1997, is available from the FTC's web site at http://www.ftc.gov and also from the FTC's Public Reference Branch, Room 130, 6th Street and Pennsylvania Avenue, N.W., Washington, D.C. 20580; 202-326-2222; TDD for the hearing impaired 1-866-653-4261.

9. As of July 1997, 36 states have adopted NIST Handbook 133 as a law or regulation, and 11 states and the District of Columbia use the procedures in NIST Handbook 133 as a guideline. One state has adopted NBS Handbook 67. The two remaining states currently do not use the procedures in NIST Handbook 133. Because there have been some minor revisions to NIST Handbook 133 since 1981, NIST and NCWM have recommended that all states adopt the most recent version of NIST Handbook 133 (Third Edition, Supplement 4, adopted in 1994) to ensure uniformity across the country. In doing so, the states would also conform to proposed federal requirements on net content labeling as set forth in the proposed FDA rule, which is discussed above.

10. For copies of the 1997 report, contact the FTC's Public Reference Branch, Room 130, 6th Street and Pennsylvania Avenue, N.W., Washington, D.C. 20580; 202-326-2222; TDD for the hearing impaired 1-866-653-4261. The report can also be found at http://www.ftc.gov on the Internet.

11. The testing procedure uses a statistical sampling technique and allows for reasonable variations. Even when a packaging plant has good manufacturing practices in place, there will be some variation in fill from package to package. The NIST procedure is based on statistical methodology that accounts for this variation. In particular, the statistically based inspection procedure ensures that (approximately) 97 percent of all acceptable lots will pass inspection.

12. NIST Handbook 133 lists the "maximum allowable variation," or MAV, for different labeled contents. For example, for half-pints, the MAV is 0.38 fluid ounces; for half-gallons, the MAV is 1.5 fluid ounces. For lots consisting of 3200 packages or less, if a single package in the random sample exceeds the MAV, the lot fails inspection. For lots with more than 3200 items, the handbook permits one package in the random sample to exceed the MAV.

13. The results cannot be statistically projected because the inspection sites were not randomly selected. Inspection sites were selected by the individual jurisdiction.

14. Weights and measures offices in the following twenty states participated in the 1997 study: Alabama, California, Delaware, Florida, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Montana, New York, Oklahoma, Tennessee, Texas, Utah, Washington, West Virginia, and Wisconsin.

15. For the approved lots, the amount of over-fill was, on average, also very small. The amount of short-fill and overfill depends on a number of factors. Dairies and packers with accurate, well-maintained filling equipment and good quantity control practices can fill packages at the labeled content level with great precision. These dairies and packers can avoid significant short-filling, and do not need to overfill significantly to protect against the possibility of being found to have a rejected lot. In contrast, dairies and packers with less accurate filling equipment and procedures may, in the short-run, find it to be more cost-effective to overfill, rather than upgrade their equipment or adopt good quantity control practices, in order to avoid the possibility of being found to have a rejected lot.

16. In this table, the container sizes are listed by fluid ounces. On the packages, volume is given in metric measurements as well. Occasionally, the metric measurement is slightly greater than the fluid ounce measurement. For example, a container of milk may be labeled as containing 8 fluid ounces and 240 milliliters. Under the NIST 133 procedure, the contents of the package must equal the higher of the two stated volumes. Because 240 milliliters equals about 8.1 fluid ounces, an inspector uses the higher milliliter statement in determining the accuracy of the net content labeling of the package.

17. An NCWM working group, comprised of government and industry, has drafted a list of good quantity control practices. This set of quantity control practices is attached to this report as Appendix C and provides step-by-step guidance for dairies and packagers that want to assess and improve their manufacturing practices.

18. For copies of this "Facts for Business," contact: Consumer Response Center, Federal Trade Commission, Washington, D.C. 20580; (202) 326-2222 or TDD (202) 326-2502. The "Facts for Business" can also be found at http://www.ftc.gov on the Internet.

APPENDIX A:
Supporting Data Tables for Charts

Table 1:
Inspection Results in 20 Jurisdictions that Participated in Both Studies Versus 26 Jurisdictions that Participated Only in 1998 Study

1998 Participating Jurisdictions	Number of Participants	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
Participated in Both 1997 and 1998 Studies	20	Approved	1286	81.65%
		Rejected	289	18.35%
			1575	
Participated Only in 1998 Study	26	Approved	1442	81.01%
		Rejected	338	18.99%
			1780	
All 1998 Participants	46	Approved	2728	81.31%
		Rejected	627	18.69%
			3355	

Table 2A:
Disposition of 1998 Inspections of Milk by Type of Establishment

Type of Establishment	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
Schools	Approved	1471	82.87%
	Rejected	304	17.13%
		1775	
State/Federal Facilities	Approved	195	71.96%
	Rejected	76	28.04%
		271	
Retailers/Wholesalers	Approved	651	81.78%
	Rejected	145	18.22%
		796	
Packagers/Dairies	Approved	411	80.12%
	Rejected	102	19.88%
		513	
All Establishments	Approved	2728	81.31%
	Rejected	627	18.69%
		3355	

Table 2B:
Disposition of 1997 Inspections of Milk by Type of Establishment

Type of Establishment	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
Schools	Approved	274	45.82%
	Rejected	324	54.18%

		598	
State/Federal Facilities	Approved	37	45.12%
	Rejected	45	54.88%
		82	
Retailers	Approved	213	61.92%
	Rejected	131	38.08%
		344	
Packagers/Dairies	Approved	203	66.12%
	Rejected	104	33.88%
		307	
All Establishments	Approved	727	54.62%
	Rejected	604	45.38%
		1331	

Table 3A:
Disposition of 1998 Inspections by Type of Milk

Type of Product	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
White Milk	Approved	1865	82.74%
	Rejected	389	17.26%
		2254	
Chocolate Milk	Approved	785	78.97%
	Rejected	209	21.03%
		994	
Other Milk	Approved	78	72.90%
	Rejected	29	27.10%
		107	
Total	Approved	2728	81.31%
	Rejected	627	18.69%
		3355	

Table 3B:
Disposition of 1997 Inspections by Type of Milk

Type of Product	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
White Milk	Approved	543	57.77%
	Rejected	397	42.23%
		940	
Chocolate Milk	Approved	158	44.89%
	Rejected	194	55.11%
		352	
Other Milk	Approved	26	66.67%
	Rejected	13	33.33%
		39	
Total	Approved	727	54.62%
	Rejected	604	45.38%
		1331	

Table 4A:
Disposition of 1998 Inspections of Milk by Size of Container

Size of Container	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
4 oz./118 mL	Approved	19	90.48%
	Rejected	2	9.52%
		21	
8 oz./235 mL (half-pint)	Approved	1755	81.44%
	Rejected	400	18.56%
		2155	
16 oz./473 mL (pint)	Approved	119	72.56%
	Rejected	45	27.44%
		164	
32 oz./946 mL (quart)	Approved	229	75.83%
	Rejected	73	24.17%
		302	
64 oz./1.89 L (half-gallon)	Approved	386	84.46%
	Rejected	71	15.54%
		457	
128 oz./3.78 L (gallon)	Approved	214	85.94%
	Rejected	35	14.06%
		249	
Other	Approved	6	85.71%
	Rejected	1	14.29%
		7	

Table 4B:
Disposition of 1997 Inspections of Milk by Size of Container

Size of Container	Disposition of Inspection	Number of Inspection Lots	Percentage of Inspection Lots
4 oz./118 mL	Approved	1	25.00%
	Rejected	3	75.00%
		4	
8 oz./235 mL (half-pint)	Approved	362	47.88%
	Rejected	394	52.12%
		756	
10 oz./295 mL	Approved	8	100.00%
	Rejected	0	00.00%
		8	
16 oz./473 mL (pint)	Approved	46	63.01%
	Rejected	27	36.99%
		73	
32 oz./946 mL (quart)	Approved	60	51.28%
	Rejected	57	48.72%
		117	
64 oz./1.89 L (half-gallon)	Approved	143	60.08%
	Rejected	95	39.92%
		238	
128 oz./3.78 L (gallon)	Approved	107	79.26%
	Rejected	28	20.74%
		135	

APPENDIX B:
Summary Report by State & Establishment Type

State	Type of Establishment	Disposition	Number of Inspections	%
AK	Schools	approved	13	100.00%
			13	
AK	Institutions	approved	1	20.00%
		rejected	4	80.00%
			5	
AK	Retailers	approved	7	100.00%
			7	
AK	Packagers/Dairies	approved	1	50.00%
		rejected	1	50.00%
			2	
AK	All Establishments	approved	22	81.48%
		rejected	5	18.52%
			27	
AL	Schools	approved	3	60.00%
		rejected	2	40.00%
			5	
AL	Institutions	approved	1	100.00%
			1	
AL	Retailers	approved	2	100.00%
			2	
AL	Packagers/Dairies	approved	1	100.00%
			1	
AL	All Establishments	approved	7	77.78%
		rejected	2	22.22%
			9	
AR	Schools	approved	84	77.06%
		rejected	25	22.94%
			109	
AR	Institutions	approved	3	100.00%
			3	
AR	Retailers	approved	44	91.67%
		rejected	4	8.33%
			48	
AR	Packagers/Dairies	approved	8	100.00%
			8	
AR	All Establishments	approved	139	82.74%
		rejected	29	17.26%
			168	
AZ	Schools	approved	95	85.59%
		rejected	16	14.41%
			111	
AZ	Institutions	approved	5	71.43%
		rejected	2	28.57%

			7	
AZ	Retailers	approved	26	83.87%
		rejected	5	16.13%
			31	
AZ	Packagers/Dairies	rejected	2	100.00%
			2	
AZ	All Establishments	approved	126	83.44%
		rejected	25	16.56%
			151	
CA	Schools	approved	9	81.82%
		rejected	2	18.18%
			11	
CA	Institutions	approved	5	27.78%
		rejected	13	72.22%
			18	
CA	Retailers	approved	20	76.92%
		rejected	6	23.08%
			26	
CA	Packagers/Dairies	approved	30	90.91%
		rejected	3	9.09%
			33	
CA	All Establishments	approved	64	72.73%
		rejected	24	27.27%
			88	
CO	Schools	approved	25	83.33%
		rejected	5	16.67%
			30	
CO	All Establishments	approved	25	83.33%
		rejected	5	16.67%
			30	
CT	Schools	approved	31	91.18%
		rejected	3	8.82%
			34	
CT	Institutions	approved	2	100.00%
			2	
CT	Retailers	approved	11	84.62%
		rejected	2	15.38%
			13	
CT	Packagers/Dairies	approved	14	93.33%
		rejected	1	6.67%
			15	
CT	All Establishments	approved	58	90.63%
		rejected	6	9.38%
			64	
DE	Schools	approved	29	50.88%
		rejected	28	49.12%
			57	
DE	Institutions	approved	9	69.23%
		rejected	4	30.77%
			13	
DE	Retailers	approved	6	60.00%

		rejected	4	40.00%
			10	
DE	Packagers/Dairies	approved	2	28.57%
		rejected	5	71.43%
			7	
DE	All Establishments	approved	46	52.87%
		rejected	41	47.13%
			87	
FL	Wholesalers	approved	1	100.00%
			1	
FL	Schools	approved	26	100.00%
			26	
FL	Retailers	approved	19	95.00%
		rejected	1	5.00%
			20	
FL	Packagers/Dairies	approved	5	100.00%
			5	
FL	All Establishments	approved	51	98.08%
		rejected	1	1.92%
			52	
GA	Wholesalers	approved	2	66.67%
		rejected	1	33.33%
			3	
GA	Schools	approved	4	50.00%
		rejected	4	50.00%
			8	
GA	Institutions	approved	1	100.00%
			1	
GA	Retailers	approved	4	80.00%
		rejected	1	20.00%
			5	
GA	Packagers/Dairies	approved	6	50.00%
		rejected	6	50.00%
			12	
GA	All Establishments	approved	17	58.62%
		rejected	12	41.38%
			29	
HI	Schools	approved	37	94.87%
		rejected	2	5.13%
			39	
HI	Institutions	approved	28	80.00%
		rejected	7	20.00%
			35	
HI	Packagers/Dairies	approved	19	86.36%
		rejected	3	13.64%
			22	
HI	All Establishments	approved	84	87.50%
		rejected	12	12.50%
			96	
IA	Retailers	approved	26	96.30%
		rejected	1	3.70%

			27	
IA	Packagers/Dairies	approved	28	90.32%
		rejected	3	9.68%
			31	
IA	All Establishments	approved	54	93.10%
		rejected	4	6.90%
			58	
ID	Schools	approved	15	100.00%
			15	
ID	Institutions	approved	1	50.00%
		rejected	1	50.00%
			2	
ID	Retailers	approved	8	80.00%
		rejected	2	20.00%
			10	
ID	Packagers/Dairies	approved	2	66.67%
		rejected	1	33.33%
			3	
ID	All Establishments	approved	26	86.67%
		rejected	4	13.33%
			30	
IN	Schools	approved	16	80.00%
		rejected	4	20.00%
			20	
IN	Institutions	approved	2	100.00%
			2	
IN	Retailers	approved	29	65.91%
		rejected	15	34.09%
			44	
IN	All Establishments	approved	47	71.21%
		rejected	19	28.79%
			66	
KS	Schools	approved	31	57.41%
		rejected	23	42.59%
			54	
KS	Institutions	approved	16	88.89%
		rejected	2	11.11%
			18	
KS	Retailers	approved	16	55.17%
		rejected	13	44.83%
			29	
KS	All Establishments	approved	63	62.38%
		rejected	38	37.62%
			101	
KY	Schools	approved	30	93.75%
		rejected	2	6.25%
			32	
KY	All Establishments	approved	30	93.75%
		rejected	2	6.25%
			32	
LA	Schools	approved	47	85.45%

		rejected	8	14.55%
			55	
LA	Retailers	approved	4	100.00%
			4	
LA	Packagers/Dairies	approved	16	80.00%
		rejected	4	20.00%
			20	
LA	All Establishments	approved	67	84.81%
		rejected	12	15.19%
			79	
MA	Schools	approved	9	81.82%
		rejected	2	18.18%
			11	
MA	Institutions	approved	3	75.00%
		rejected	1	25.00%
			4	
MA	Retailers	approved	3	75.00%
		rejected	1	25.00%
			4	
MA	Packagers/Dairies	approved	2	100.00%
			2	
MA	All Establishments	approved	17	80.95%
		rejected	4	19.05%
			21	
MD	Schools	approved	56	91.80%
		rejected	5	8.20%
			61	
MD	Retailers	approved	32	88.89%
		rejected	4	11.11%
			36	
MD	Packagers/Dairies	approved	22	88.00%
		rejected	3	12.00%
			25	
MD	All Establishments	approved	110	90.16%
		rejected	12	9.84%
			122	
ME	Wholesalers	approved	3	75.00%
		rejected	1	25.00%
			4	
ME	Schools	approved	16	69.57%
		rejected	7	30.43%
			23	
ME	Institutions	approved	5	71.43%
		rejected	2	28.57%
			7	
ME	Retailers	approved	4	40.00%
		rejected	6	60.00%
			10	
ME	Packagers/Dairies	approved	2	28.57%
		rejected	5	71.43%
			7	

ME	All Establishments	approved	30	58.82%
		rejected	21	41.18%
			51	
MI	Wholesalers	approved	1	100.00%
			1	
MI	Schools	approved	20	76.92%
		rejected	6	23.08%
			26	
MI	Institutions	approved	4	100.00%
			4	
MI	Retailers	approved	16	84.21%
			3	15.79%
		rejected	19	
MI	Packagers/Dairies	approved	6	46.15%
		rejected	7	53.85%
			13	
MI	All Establishments	approved	47	74.60%
		rejected	16	25.40%
			63	
MN	Schools	approved	19	100.00%
			19	
MN	Institutions	approved	6	100.00%
			6	
MN	Retailers	approved	4	80.00%
		rejected	1	20.00%
			5	
MN	Packagers/Dairies	approved	19	90.48%
		rejected	2	9.52%
			21	
MN	All Establishments	approved	48	94.12%
		rejected	3	5.88%
			51	
MO	Schools	approved	41	77.36%
		rejected	12	22.64%
			53	
MO	Institutions	approved	17	85.00%
		rejected	3	15.00%
			20	
MO	Retailers	approved	42	79.25%
		rejected	11	20.75%
			53	
MO	Packagers/Dairies	approved	32	86.49%
		rejected	5	13.51%
			37	
MO	All Establishments	approved	132	80.98%
		rejected	31	19.02%
			163	
MS	Schools	approved	8	72.73%
		rejected	3	27.27%
			11	

MS	Packagers/Dairies	approved	2	66.67%
		rejected	1	33.33%
			3	
MS	All Establishments	approved	10	71.43%
		rejected	4	28.57%
			14	
MT	Schools	approved	17	94.44%
		rejected	1	5.56%
			18	
MT	Institutions	approved	10	100.00%
			10	
MT	Retailers	approved	8	88.89%
		rejected	1	11.11%
			9	
MT	Packagers/Dairies	approved	21	77.78%
		rejected	6	22.22%
			27	
MT	All Establishments	approved	56	87.50%
		rejected	8	12.50%
			64	
NC	Wholesalers	approved	2	66.67%
		rejected	1	33.33%
			3	
NC	Schools	approved	117	94.35%
		rejected	7	5.65%
			124	
NC	Institutions	approved	3	100.00%
			3	
NC	Packagers/Dairies	approved	24	85.71%
		rejected	4	14.29%
			28	
NC	All Establishments	approved	146	92.41%
		rejected	12	7.59%
			158	
NE	Schools	approved	24	82.76%
		rejected	5	17.24%
			29	
NE	Institutions	approved	6	100.00%
			6	
NE	Retailers	approved	33	82.50%
		rejected	7	17.50%
			40	
NE	Packagers/Dairies	approved	9	81.82%
		rejected	2	18.18%
			11	
NE	All Establishments	approved	72	83.72%
		rejected	14	16.28%
			86	
NH	Schools	approved	23	85.19%
		rejected	4	14.81%
			27	

NH	All Establishments	approved	23	85.19%
		rejected	4	14.81%
			27	
NJ	Schools	approved	72	85.71%
		rejected	12	14.29%
			84	
NJ	Retailers	approved	26	66.67%
		rejected	13	33.33%
			39	
NJ	Packagers/Dairies	approved	8	50.00%
		rejected	8	50.00%
			16	
NJ	All Establishments	approved	106	76.26%
		rejected	33	23.74%
			139	
NM	Schools	approved	5	83.33%
		rejected	1	16.67%
			6	
NM	Retailers	approved	42	84.00%
		rejected	8	16.00%
			50	
NM	Packagers/Dairies	approved	1	100.00%
			1	
NM	All Establishments	approved	48	84.21%
		rejected	9	15.79%
			57	
NV	Schools	approved	17	53.13%
		rejected	15	46.88%
			32	
NV	Institutions	Rejected	2	100.00%
			2	
NV	Retailers	approved	5	71.43%
		rejected	2	28.57%
			7	
NV	Packagers/Dairies	approved	1	33.33%
		rejected	2	66.67%
			3	
NV	All Establishments	approved	23	52.27%
		rejected	21	47.73%
			44	
NY	Wholesalers	approved	1	100.00%
			1	
NY	Schools	approved	141	85.98%
		rejected	23	14.02%
			164	
NY	Institutions	approved	22	75.86%
		rejected	7	24.14%
			29	
NY	Retailers	approved	41	78.85%
		rejected	11	21.15%
			52	

NY	All Establishments	approved	205	83.33%
		rejected	41	16.67%
			246	
OH	Schools	approved	31	100.00%
			31	
OH	Retailers	approved	21	91.30%
		rejected	2	8.70%
			23	
OH	Packagers/Dairies	approved	3	100.00%
			3	
OH	All Establishments	approved	55	96.49%
		rejected	2	3.51%
			57	
OK	Schools	approved	28	80.00%
		rejected	7	20.00%
			35	
OK	Institutions	approved	10	62.50%
		rejected	6	37.50%
			16	
OK	Retailers	approved	35	100.00%
			35	
OK	Packagers/Dairies	approved	29	100.00%
			29	
OK	All Establishments	approved	102	88.70%
		rejected	13	11.30%
			115	
PA	Wholesalers	approved	12	100.00%
			12	
PA	Schools	approved	44	67.69%
		rejected	21	32.31%
			65	
PA	Institutions	approved	11	57.89%
		rejected	8	42.11%
			19	
PA	Retailers	approved	8	100.00%
			8	
PA	Packagers/Dairies	approved	12	75.00%
		rejected	4	25.00%
			16	
PA	All Establishments	approved	87	72.50%
		rejected	33	27.50%
			120	
PR	Schools	approved	14	70.00%
		rejected	6	30.00%
			20	
PR	Retailers	approved	1	33.33%
		rejected	2	66.67%
			3	
PR	All Establishments	approved	15	65.22%
		rejected	8	34.78%
			23	

RI	Schools	approved	6	85.71%
		rejected	1	14.29%
			7	
RI	Institutions	approved	3	100.00%
			3	
RI	Retailers	approved	5	100.00%
			5	
RI	Packagers/Dairies	rejected	1	100.00%
			1	
RI	All Establishments	approved	14	87.50%
		rejected	2	12.50%
			16	
SC	Schools	approved	29	96.67%
		rejected	1	3.33%
			30	
SC	Packagers/Dairies	approved	17	80.95%
		rejected	4	19.05%
			21	
SC	All Establishments	approved	46	90.20%
		rejected	5	9.80%
			51	
TN	Wholesalers	approved	4	80.00%
		rejected	1	20.00%
			5	
TN	Schools	approved	44	97.78%
		rejected	1	2.22%
			45	
TN	Retailers	approved	11	91.67%
		rejected	1	8.33%
			12	
TN	Packagers/Dairies	approved	29	80.56%
		rejected	7	19.44%
			36	
TN	All Establishments	approved	88	89.80%
		rejected	10	10.20%
			98	
TX	Schools	approved	33	78.57%
		rejected	9	21.43%
			42	
TX	Institutions	approved	1	33.33%
		rejected	2	66.67%
			3	
TX	Retailers	approved	38	95.00%
		rejected	2	5.00%
			40	
TX	Packagers/Dairies	approved	23	79.31%
		rejected	6	20.69%
			29	
TX	All Establishments	approved	95	83.33%
		rejected	19	16.67%
			114	

UT	Schools	approved	46	97.87%
		rejected	1	2.13%
			47	
UT	Institutions	approved	3	100.00%
			3	
UT	Retailers	approved	6	66.67%
		rejected	3	33.33%
			9	
UT	Packagers/Dairies	approved	11	78.57%
		rejected	3	21.43%
			14	
UT	All Establishments	approved	66	90.41%
		rejected	7	9.59%
			73	
VI	Schools	approved	6	100.00%
			6	
VI	Retailers	approved	2	66.67%
		rejected	1	33.33%
			3	
VI	Packagers/Dairies	rejected	1	100.00%
			1	
VI	All Establishments	approved	8	80.00%
		rejected	2	20.00%
			10	
VT	Schools	approved	14	77.78%
		rejected	4	22.22%
			18	
VT	Institutions	approved	2	66.67%
		rejected	1	33.33%
			3	
VT	Retailers	rejected	1	100.00%
			1	
VT	All Establishments	approved	16	72.73%
		rejected	6	27.27%
			22	
WA	Wholesalers	approved	1	100.00%
			1	
WA	Schools	approved	45	84.91%
		rejected	8	15.09%
			53	
WA	Retailers	approved	5	50.00%
		rejected	5	50.00%
			10	
WA	Packagers/Dairies	approved	2	50.00%
		rejected	2	50.00%
			4	
WA	All Establishments	approved	53	77.94%
		rejected	15	22.06%
			68	
WI	Schools	approved	21	100.00%
			21	

WI	Retailers	approved	11	84.62%
		rejected	2	15.38%
			13	
WI	All Establishments	approved	32	94.12%
		rejected	2	5.88%
			34	
WV	Wholesalers	approved	3	100.00%
			3	
WV	Schools	approved	30	62.50%
		rejected	18	37.50%
			48	
WV	Institutions	approved	15	57.69%
		rejected	11	42.31%
			26	
WV	Packagers/Dairies	approved	4	100.00%
			4	
WV	All Establishments	approved	52	64.20%
		rejected	29	35.80%
			81	

Appendix C:
Good Quantity Control Practices

Good Quantity Control Practices means that the plant managers should take all reasonable precautions to ensure the following quantity control standards or their equivalent are met:

1. A formal quantity control function is in place with authority to review production processes and records, investigate possible errors, and approve, control, or reject lots.
2. Adequate facilities (e.g., equipment standards and work areas) for conducting quantity control functions are provided and maintained.
3. A quantity control program (e.g., a system of statistical process control) is in place and maintained.
4. Sampling is conducted at a frequency appropriate to the production process to ensure that the data obtained is representative of the production lot.
5. Production records are maintained to provide a history of the filling and net content labeling of the product.
6. Each "production lot" contains on the average the labeled quantity, and the number of packages exceeding the specified maximum allowable variation (MAV) value in the inspection sample shall be no more than permitted in Tables 2-1 and 2-2 in NIST Handbook 133.
7. Packaging practices are appropriate for specific products, and measurement procedures (e.g., quantity sampling, density and tare determinations) and guidelines for recording and maintaining test results are documented.
8. Personnel responsible for quantity control follow written work instructions and are competent to perform their duties (e.g., background, education, experience and training). Training is conducted at sufficient intervals to ensure good practices.
9. Recognized procedures are used for the selection, maintenance, adjustment, and testing of filling equipment to ensure proper fill control.
10. Weighing and measuring devices are suitable for their intended purpose, and measurement standards are suitable and traceable to national standards. This includes a system of equipment maintenance and calibration to include recordkeeping procedures.
11. Controls over automated data systems and software used in quantity control ensures that information is accessible, but changeable only by authorized personnel.
12. Tare materials are monitored for variation. Label changes are controlled to ensure net quantity matches labeled declaration.