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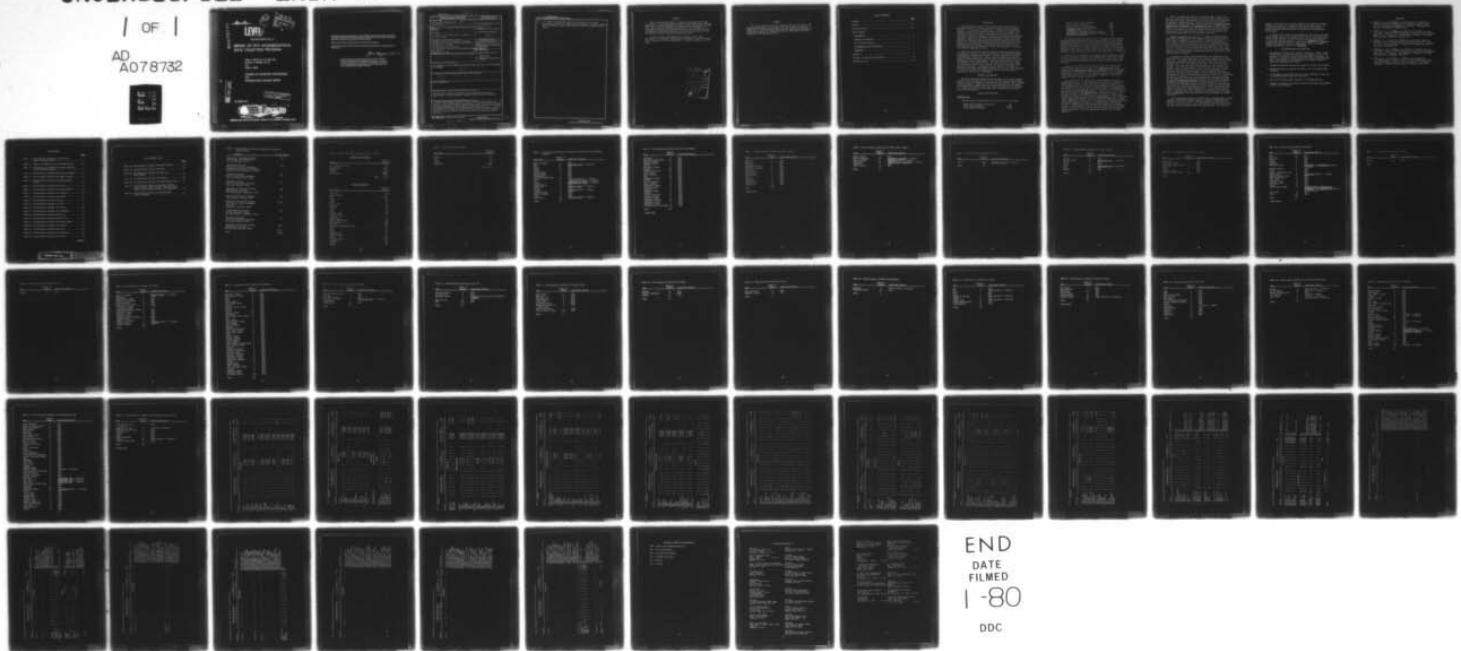
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REPORT OF 1977 MICROBIOLOGICAL DATA COLLECTION PROGRAM

JOHN T. FRUIN, LTC, VC, DVM, PhD
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and
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DIVISION OF NUTRITION TECHNOLOGY
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20. A total of nearly 6500 samples were analyzed. Only a small percentage of the samples yielded potential pathogens. The data reported will be invaluable in the establishment of microbial standards for food items.

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ABSTRACT

This is the sixth and final in a series of reports which present the results of food microbiological testing (except fresh dairy products) performed by official Department of Defense Medical Laboratories in 1972-1977. The program was designed and operated by the Department of Information Sciences, under the direction of the Food Hygiene Division, Letterman Army Institute of Research, utilizing in-house resources and the Lawrence Berkeley Laboratory computer facilities.

A total of nearly 6500 samples were analyzed. Only a small percentage of the samples yielded potential pathogens. The data reported will be invaluable in the establishment of microbial standards for food items.

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PREFACE

The authors wish to thank the laboratory officers and staff of the laboratories performing the analyses. We wish to thank COL James F. Fowler and Mr. James F. Foster, who worked for many years developing the collection system and SP4 Clayton Poon and Mr. Peter Taylor for their assistance in tabulating the data.

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INTRODUCTION

Man's knowledge of the role that certain food- and water-borne microorganisms play in disease processes has been obtained relatively recently. It was correct to reason that a reduction in the microbial content of food and water would reduce the incidence of disease. This was shown in the early 1900s by the dramatic reduction of milk- and water-borne disease following the implementation of milk pasteurization and water chlorination, concurrent with the establishment of microbial standards. Most food items do not lend themselves to procedures that provide the magnitude of reduction in microbial populations that fluid products do. Thus microbial standards that have been applied to solid food items must be relevant to the naturally existing normal flora. Extensive data must be generated to support the development of meaningful microbial standards for foods.

This is the sixth and final in a series of reports presenting the tabulation and analysis of food microbiological data generated annually by Department of Defense laboratories. Data are reported as received from performing laboratories. Thus, reason for submission, method of sample collection, delivery, analysis, and reporting results vary within and among performing laboratories. Therefore data are not and cannot be discussed to the extent desired. The data contained in this report and in previous reports help to provide the extensive data base needed to support standards. In addition, the information is valuable to military public health and regulatory medicine officials. Data generated in 1977 are presented in the form of tables and, when applicable, a discussion of the results is presented.

MATERIALS AND METHODS

The data collection system used was the same as the system reported in 1973 (1) and modified in 1975 (2), except that procedures were implemented to allow the entering of data directly onto magnetic tape utilizing a remote terminal. Graphs are not used to present data in this report. It is anticipated, however, that some graphic displays will be presented in a report, currently in preparation, that summarizes data collected over a five-year period.

RESULTS AND DISCUSSION

Technical Data

Selected statistics pertaining to the 1977 file are as follows:

Number of participating laboratories	10
Total sample headings	6,480
Total analyses performed	24,078

Aerobic plate counts performed	5,709
Coliform counts performed	6,042
Yeast and mold counts performed	1,834
<u>Escherichia coli</u> analyses performed	4,370
<u>Salmonella</u> analyses performed	977
<u>Clostridium perfringens</u> analyses performed	580
<u>Clostridia-not perfringens</u> analyses performed	11
Types of food analyzed	658

The participating laboratories, their locations, and the number of submissions from each during 1977 are listed in Table 1. The Central Food Preparation Facility (CFPF) Food Quality Control Laboratory was established to monitor the microbial quality of food items at critical control points and after final preparation in the CFPF. The bulk of the CFPF samples were of finished products. The total of 6480 samples analyzed in 1977 compares to 8048, 6120, 7639, 7409, and 7346 samples analyzed in 1972, 1973, 1974, 1975, and 1976, respectively. (1,2,3,4,5)

Table 2 lists the reasons for submission and the number of samples, listed by food item, submitted to the laboratories. The reason given for all food samples analyzed by the CFPF was for surveillance. Over-all fewer samples were analyzed for each reason, in 1977, except for research.

During 1977 a total of 79 food samples from 20 different food classifications were analyzed (Table 3). Escherichia coli, fecal streptococci, Staphylococcus aureus, and Bacillus species were the only microorganisms isolated from these samples that were of public health significance. No pathogens or abnormally high counts were reported from the 187 samples of baby food analyzed (Table 4) or from the 53 samples of bakery products (Table 5).

Two samples from the combat meals, canned (Table 6), were not commercially sterile. No information was available as to whether the contaminated cans were leakers, swellers, flippers, or normal, but it is suspected that the integrity of the containers had been violated. One sample of the chocolate candy, a product which is not expected to be sterile, contained Bacillus species. One sample of catsup (Table 7) was contaminated with Bacillus subtilis. Since catsup is a food with a high acid content and B. subtilis is not considered pathogenic, its presence in catsup has no public health significance. Table 8 shows that 16 of 90 cheese samples contained Escherichia coli. All 16 contaminated samples were from one type or another of diced cheese, because of the additional processing it is likely that the contamination occurred during post-production processing. An epidemiologic investigation revealed a contaminated slicing machine that could not be sanitized properly. Action included removing the slicer from service and submission of an unsatisfactory material report to remove the item from the federal stock list. No microorganisms were isolated from desserts (Table 9).

Table 10 presents the results of analyzing drinks. Due to the nature of carbonated drinks and as seen from the results reported this year and in the past, there appears to be little need for microbiological analyses of these products. The only results of public health significance reported from drinks were the isolation of Bacillus cereus, Staphylococcus epidermidis, and Corynebacterium species from canned tomato juice. Due to the high acid content of this thermally processed product, contamination by these microorganisms indicate either inadequate processing or container deterioration. No microorganisms were isolated from eggs (Table 11) or from pizza (Table 12).

Bacillus cereus was isolated in 3 of 6 apple pie filling samples (Table 13). The isolation of this organism is not significant from a public health standpoint, but the number of organisms per gram is. In these cases the number isolated per gram was low. Bacillus species were isolated, as would be expected, from each of the 5 raisin samples. No microorganisms were isolated from processed vegetables (Table 14). Five of 8 samples of chili con carne and beans (Table 15) were E. coli positive. An isolation rate of 62.5% is excessively high for this type product and an epidemiological investigation into the processing of this food item may be warranted.

No findings of public health significance were reported for pet food (Table 16), canned meats (Table 17), topping (Table 18), and syrup (Table 19). Yeasts and molds were isolated in low numbers and at varying frequencies from margarine (Table 20), sauces (Table 21), and salad dressing (Table 22). One sample of soup (Table 23) had a plate count of 220/g. The sample was taken from production at CFPS and was not intended to be a sterile product. The only sample from milk and milk products (Table 24) that may be of public health significance was ice cream mix which had a coliform count of greater than 600 per gram. (Data from fresh fluid dairy products are not included in this report). The analytical results from seafood are revealed in Table 25. Considering that many of these items were not subjected to any thermal processing and the normal habitat of the source species often contains coliforms, E. coli and Streptococcus faecium the results are as would be expected. The frequency of E. coli isolation from miscellaneous raw meat items (Table 26) was higher than expected, however, counts per gram were low. The isolation of viable organisms from canned lasagne and canned mushrooms is of potential public health concern. It is suspected that the coliform isolated from canned lasagne was the result of contamination due to a defective can, since coliforms are heat sensitive. The isolation of Clostridium from canned mushrooms indicates inadequate thermal processing.

The microbiological data for inflight meals, luncheon meats, poultry, precooked frozen meals, salads, sandwich spreads, and sandwiches are provided in detail in Table 27. The data presented in this table are the food item, aerobic plate count times 1000/g, coliform count/g, yeast and mold count/g, and the results of E. coli analyses. The number of

samples for each analysis is given immediately preceding the number in each count range. It is apparent that certain analyses were not performed on many samples; these are annotated as "not tested." Results reported in all tables are as received from the performing laboratories.

A special table (Table 28) was prepared for beef, pork, and fresh ground sausage, because these products often have a high natural flora. The multiplier used for the standard plate count in these analyses is $10^4/g$, unless otherwise stated. A total of 16 Salmonella species isolates were obtained from fresh ground pork sausage while undergoing analyses for research purposes. Approximately 3% of the research samples analyzed were positive for Salmonella.

RECOMMENDATIONS AND CONCLUSIONS

1. Accumulation of data on file should be continued. However, funds are currently not available to support the program. Thus, if the program is to continue, operational funding must be provided. In addition, consideration should be made for further program development. Data similar to that presented in this report could be tabulated via computer and printed.
2. Recommend funding and resources be sought to continue this program.
3. Maximum use should be made of the data on file in reviewing specifications.
4. Microbiological guidelines based on the data presented in this and in preceding reports should be formulated.
5. Data on file should remain available to interested parties.
6. Research in military food hygiene should be instituted when problem products are identified.

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TABLE 1: Participating Laboratories, Location and Number of Samples Tested

LOCATION	NO. OF SAMPLES
Central Food Preparation Facility Food Quality Control Laboratory Ft. Lee, Virginia 23801	737
Food Hygiene Division Division of Nutrition Technology Letterman Army Institute of Research Presidio of San Francisco, CA 94129	555
Veterinary Division Fifth US Army Medical Laboratory Fort Sam Houston, Texas 78234	304
Veterinary Division First US Army Medical Laboratory Fort Mead, Maryland 20755	597
Department of Veterinary Medicine 406th Medical Laboratory APO San Francisco, California 96343	296
Third US Army Medical Laboratory Fort McPherson, Georgia 30330	520
Department of Veterinary Medicine Sixth US Army Medical Laboratory Fort Baker Sausalito, California 94965	1,232
US Army Medical Laboratory Schofield Barracks, Hawaii APO San Francisco, California 96557	372
Veterinary Department Fifth US Army Medical Laboratory St. Louis, Missouri 63166	13
Department of Veterinary Medicine Tenth Medical Laboratory APO New York, New York 09180	1,854
TOTAL	6,480

TABLE 2: Reasons for Submission and Item Class Listing

REASONS FOR SUBMISSION

<u>REASONS</u>	<u>NUMBER OF SAMPLES</u>
Food Poisoning Suspect	79
Procurement	1,137
Research	553
Special	1,682
Surveillance	<u>3,029</u>
TOTAL	6,480

ITEM CLASS LISTING

<u>ITEM CLASS</u>	<u>NUMBER OF SAMPLES</u>
Baby Food	187
Bakery Products	53
Beef	1,487
Catsup	16
Cheese	90
Chili	15
Combat Meals	62
Desserts	7
Drinks	170
Eggs	2
Fruit	73
Inflight Meals	101
Luncheon Meats	7
Margarine	9
Meats, Canned	41
Milk & Milk Products	22
Miscellaneous	288
Pet Food	135
Precooked Frozen Meals (PFM)	273
Pizza	1
Pork	317
Poultry	35
Prepared Meals	2
Salad Dressing	42
Salads	1,181
Sandwich Spreads	78
Sandwiches	426
Sauces	36
Sausage	719

TABLE 2: ITEM CLASS LISTING (Cont)

<u>ITEM CLASS</u>	<u>NUMBER OF SAMPLES</u>
Seafood	135
Soup	35
Syrup	15
Topping	25
Vegetables	<u>395</u>
	TOTAL 6,480

TABLE 3: Microbiological Isolates from Samples Submitted as Food Poisoning Suspects

Item Class	Number of Samples	Significant Results
Bakery Products	1	None
Beef	10	<u>Escherichia coli</u> - 3 Isolates
Chili	2	None
Drinks	16	None
Fruits	2	None
Luncheon Meats	1	None
Meats, Canned	1	None
Miscellaneous	2	None
Precooked Frozen Meals	2	None
Pizza	1	Fecal streptococci - 1 Isolate
Pork	6	<u>Staphylococcus aureus</u> - 2 Isolates
Poultry	3	<u>Staphylococcus aureus</u> - 1 Isolate
Salad Dressing	2	None
Sandwiches	3	<u>Bacillus cereus</u> - 2 Isolates
Sauces	1	None
Sausage	7	<u>Bacillus species</u> - 1 Isolate
Seafood (fresh)	3	None
Seafood (canned)	3	None
Soup	9	None
Vegetables	4	<u>Bacillus cereus</u> - 3 Isolates
TOTAL	79	

TABLE 4: Microbiological Isolates from Baby Food Samples

Item	Number of Samples	Significant Results
Applesauce	4	None
Baby Food, Unidentified	14	None
Banana & Tapioca	2	None
Blueberry Buckle	2	None
Carrots	2	None
Egg Yolk, Strained	7	None
Enfamil*	28	None
Enfamil with Iron*	14	None
Fruit Dessert	2	None
Infant Formula	2	None
Lamb	30	None
Nutramigen Liquid*	8	None
Peaches	2	None
Pears & Pineapple	2	None
Peas, Creamed	2	None
Pineapple - Orange	2	None
Plums & Tapioca	2	None
Prosobec*	1	None
Raspberry Cobbler	2	None
Similac*	5	None
Similac with Iron*	17	None
Spinach, Creamed	6	None
Vegetable & Beef	4	None
Vegetable & Chicken	12	None
Vegetable & Liver	6	None
Vegetable & Turkey	6	None
Vegetables-Mixed, Strained	3	None
TOTAL	187	

*Trade Names

TABLE 5: Microbiological Isolates from Bakery Products

Item	Number of Samples	Significant Results
Apple Pie	4	None
Biscuits	2	None
Cherry Pie	2	None
Chocolate Cream Pie	2	None
Cookie Mix, Oatmeal	26	None
Crackers	1	None
Danish Pastry	6	None
Fig Newtons*	1	None
Hot Dog Buns	1	None
Pastry	1	None
Peach Pie	1	None
Pineapple Pie	1	None
Pumpkin Pie	2	None
Sweetie Pie	<u>3</u>	None
TOTAL	53	

*Trade Names

TABLE 6: Microbiological Isolates from Combat Meals, Canned

<u>Item</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Beans & Franks	3	None
Beans & Meatballs	19	<u>Citrobacter freundii</u> - 1 Isolate
Chocolate Candy	2	<u>Bacillus</u> species - 1 Isolate
Combat Meal	30	<u>Staphylococcus epidermidis</u> - 1 Isolate
Tuna Fish	4	None
Turkey, Boned	<u>4</u>	None
TOTAL	62	

TABLE 7: Microbiological Isolates from Catsup

<u>Item</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Catsup	<u>16</u>	<u>Bacillus subtilis</u> - 1 Isolate
TOTAL	16	

TABLE 8: Microbiological Isolates from Cheese Samples

Item	Number of Samples	Significant Results
Cheddar	9	None
Cheddar, Diced	32	<u>Escherichia coli</u> - 5 Isolates
Cheese	1	None
Cream	6	None
Diced	34	<u>Escherichia coli</u> - 11 Isolates
Feta	6	None
Ricotta	2	None
TOTAL	90	

TABLE 9: Microbiological Isolates from Desserts

Item	Number of Samples	Significant Results
Apple Pecan	1	None
Black Cherry Almond	1	None
California Orange Parfait	1	None
Cream Pie	1	None
Crepe	1	None
Pudding, Vanilla	1	None
Raspberry Marble Parfait	<u>1</u>	None
TOTAL	7	

TABLE 10: Microbiological Isolates from Drinks

Item	Number of Samples	Significant Results
Beer	41	None
Coca Cola*	6	None
Coffee	4	None
Fanta*	2	None
Gatorade*	5	None
Grapefruit Juice	6	<u>Penicillium</u> and <u>Aspergillus</u> species - 1 Isolate
Hawaiian Punch*	26	None
Lift*	1	None
Orange & Grapefruit Juice	6	None
Orange Juice	14	<u>Penicillium</u> species - 1 Isolate
Papaya Pineapple Juice	1	None
Pear Nectar Juice	2	None
Pepsi Cola*	2	None
Pineapple Juice	1	None
Seven-Up, Diet*	20	None
Sprite*	2	None
Tomato Juice, Canned	15	<u>Bacillus cereus</u> , <u>Staphylococcus epidermidis</u> , & <u>Corynebacterium</u> species - 6 isolates each
V-8 Juice*	12	None
Wine	4	None
TOTAL	170	

*Trade Names

TABLE 11: Microbiological Isolates from Eggs

Item	Number of Samples	Significant Results
Deviled	<u>2</u>	None
TOTAL	2	

TABLE 12: Microbiological Isolates from Pizza

<u>Iten</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Sausage	1	None

TABLE 13: Microbiological Isolates from Fruits

Item	Number of Samples	Significant Results
Apple Pie Filling	6	<u>Bacillus cereus</u> - 3 Isolates
Applesauce	2	None
Blackberries, Canned	3	None
Blueberry Pie Filling	6	None
Cherries, Canned	1	None
Fruit Cocktail, Canned	8	None
Grapefruit & Orange Sections, Canned	6	None
Grapefruit Sections, Canned	6	None
Maraschino Cherry	1	None
Mincemeat, Canned	3	None
Peaches, Canned	9	None
Pineapple, Crushed, Canned	2	None
Pumpkin, Canned	7	None
Pumpkin Pie Filling	6	None
Raisins, Canned	5	<u>Bacillus</u> species - 5 Isolates
Tangelos, Canned	<u>2</u>	None
TOTAL	73	

TABLE 14: Microbiological Isolates from Vegetables

Item	Number of Samples	Significant Results
Asparagus, Canned	4	None
Bean Sprouts, Canned	6	None
Beans	2	None
Beets	3	None
Beets, Canned	1	None
Boston Baked Beans	1	None
Broccoli	2	None
Broccoli Spears, Frozen	1	None
Cabbage	1	None
Carrots	2	None
Carrots, Canned	218	None
Cauliflower	4	None
Chile Green, Whole, Canned	12	None
Corn	1	None
Corn, Canned	2	None
Corn, Creamed, Canned	1	None
Corn Pudding	3	None
Corn, Scalloped	1	None
Eggplant	1	None
French Fried Potatoes	1	None
Green Beans, Canned	34	None
Green Peas, Canned	1	None
Mixed	3	None
Onions, Canned	2	None
Onions, Creamed	1	None
Onions, Spanish	1	None
Peas, Creamed	2	None
Pork & Beans in Tomato Sauce	3	None
Pork & Beans, Canned	2	None
Potatoes	5	None
Potatoes Au Gratin	4	None
Potatoes, Hash Brown	1	None
Potatoes, Mashed	3	None
Potatoes, Scalloped	3	None
Potatoes, Shredded	1	None
Sauerkraut, Canned	35	None
Sauerkraut, Shredded	5	None
Spinach	2	None
Summer Squash	2	None
Sweet Potatoes	1	None
Sweet Potatoes, Canned	2	None
Tomatoes	2	None
Tomatoes, Canned	6	None
Tomatoes, Stewed	1	None
Wax Beans, Canned	6	None
TOTAL	395	

TABLE 15: Microbiological Isolates from Chili

Item	Number of Samples	Significant Results
Chili and Beans, Canned	4	None
Con Carne	1	None
Con Carne and Beans	1	None
Con Carne and Beans, Dehydrated	3	<u>Escherichia coli</u> - 5 Positive
Without Beans	<u>1</u>	None
TOTAL	15	

TABLE 16: Microbiological Isolates from Pet Food

Item	Number of Samples	Significant Results
Cat Food, Canned	1	None
Cat Food, Dry	9	None
Dog Food, Canned	37	<u>Bacillus</u> species isolated, SPC>500/g - 6 samples
Dog Food, Dry	76	None
MSD	<u>12</u>	None
TOTAL	135	

TABLE 17: Microbiological Isolates from Meats, Canned

Item	Number of Samples	Significant Results
Beef & Gravy	2	None
Beef Stew	12	None
Brunswick Stew	9	None
Chili Macaroni	2	None
Corned Beef	1	None
Corned Beef Hash	9	None
Meatballs and Beans in Tomato Sauce	2	None
Sweet & Sour Pork	2	None
Veal and Broth, Canned	<u>2</u>	None
TOTAL	41	

TABLE 18: Microbiological Isolates from Topping

<u>Item</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Dessert	8	None
Dessert, Dehydrated	16	None
Vanilla	<u>1</u>	None
TOTAL	25	

TABLE 19: Microbiological Isolates from Syrup

<u>Item</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Maple Imitation	12	None
Molasses, Canned	<u>3</u>	None
TOTAL	15	

TABLE 20: Microbiological Isolates from Margarine

<u>Item</u>	<u>Number of Samples</u>	<u>Significant Results</u>
Margarine	8	Yeast and Mold - 3 positive
Margarine Patties	<u>1</u>	None
TOTAL	9	

TABLE 21: Microbiological Isolates from Sauces

Item	Number of Samples	Significant Results
BBQ	5	None
Chili	1	Yeast and Mold - 1 Positive
Meat	1	None
Pizza	7	None
Spaghetti and Meat	1	Yeast and Mold - 1 Positive
Tomato	3	None
Tomato Paste	11	Yeast and Mold - 1 Positive
Tomato Spanish Style	6	None
Worcestershire	1	None
TOTAL	36	

TABLE 22: Microbiological Isolates from Salad Dressing

Item	Number of Samples	Significant Results
Blue Cheese	1	None
IMO Dressing*	2	None
Mayonnaise	12	None
Miracle Whip*	1	None
Salad Dressing	16	None
Thousand Island	<u>10</u>	Yeast and Mold - 10 Positive
TOTAL	42	

*Trade Names

TABLE 23: Microbiological Isolates from Soup

Item	Number of Samples	Significant Results
Bean	1	None
Beef	2	None
Beef and Egg Noodle	1	None
Beef and Rice	1	None
Beef Gravy	6	None
Chicken Noodle, Dehydrated	6	None
Cream of Mushroom, Canned	9	None
Creole	1	None
Green Pea	1	SPC 220/g - 1 sample
Knickerbocker	1	None
Minestrone	1	None
Spanish	1	None
Tomato Rice	3	None
Vegetable	1	None
TOTAL	35	

TABLE 24: Microbiological Isolates from Milk and Milk Products

Item	Number of Samples	Significant Results
Butter	6	Yeast and Mold - 5 Positive
Cottage Cheese	3	Coliform - 1 Positive
Cream, Pressurized Can	2	None
Ice Cream Mix	2	Coliform - 1 >600/g
Sour Cream	9	Coliform - 1 Positive, Yeast and Mold - 2 Positive
TOTAL	22	

TABLE 25: Microbiological Isolates from Seafood

Item	Number of Samples	Significant Results
Abalone, Canned	6	None
Clam Chowder	2	None
Clam, Smoked, Canned	6	None
Codfish	3	None
Crabmeat, Frozen	3	None
Fish	3	None
Fish, Baked	1	None
Fish, Baked in Cheese Sauce	1	None
Fish Cake	6	None
Fish, Raw, Frozen	1	None
Flounder Filets	3	None
Flounder Filets, Frozen	3	None
Halibut	6	None
Lobster Tail	3	Coliform - 1 Positive
Oysters, Frozen	15	Coliform - 1 Positive
Oysters, Raw, Frozen	11	None
Oysters, Smoked, Canned	1	None
Perch	3	Coliform - 3 Positive
Salmon	1	None
Salmon Patties	1	None
Sardines, Canned	7	None
Scallops	3	<u>Escherichia coli</u> - 1 Positive
Seafood Newburg	1	<u>Streptococcus faecium</u> - 1 Isolate
Shrimp	3	Coliform - 1 Positive
Shrimp, Canned	19	None
Shrimp, Creole	1	None
Shrimp, Deveined, Small	3	None
Sole Filets, Frozen	1	None
Tuna	2	None
Tuna, Canned	13	None
Turbot Filets	3	Coliform - 2 Positive
TOTAL	135	

TABLE 26: Microbiological Isolates from Miscellaneous Items

Item	Number of Samples	Significant Results
Beans and Franks	2	None
Beans and Franks, Canned	2	None
Beans and Meatballs	10	None
Beef-O-Getti*	3	None
Beefaroni*	2	None
Beer Nuts	2	None
Candy (Baby Ruth*)	16	None
Chili Powder	9	None
Chicken and Dumplings	2	None
Chop Suey Pork	2	None
Cloves, Ground	1	None
Corn Bread Dressing	1	None
Flour	2	None
Franks and Cheese	1	None
Gravy	4	None
Gravy Base	5	None
Gravy, Vegetable	3	None
Ground Beef and Dumplings	2	None
Ham and Lima Beans, Canned	4	None
Honey	1	None
Jalapenos	1	None
Jam, Peach	5	None
Jelly, Apple	7	None
Lasagne	1	None
Lasagne, Baked	1	None
Lasagne, Canned	3	Coliforms - 1 Positive
Lemon Pudding & Pie Filling	2	None
Liver and Onions	1	None
Macaroni and Cheese	5	None
Macaroni, Baked	1	None
Meat Loaf	3	<u>Escherichia coli</u> - 3 Positive
Meat Loaf, Raw	5	<u>Escherichia coli</u> - 2 Positive
Meat Balls	5	<u>Escherichia coli</u> - 1 Positive
Meat Balls in Tomato Sauce	2	None
Mezzo Mix*	1	None
Mushrooms	13	None
Mushrooms, Canned	54	<u>Clostridium</u> species - 3 Isolated
Mustard	12	None
Olive, Green	6	None
Olives, Ripe	3	None
Pancake Batter	1	None
Peppers, Hot	6	None
Peppers, Sweet	1	None
Peppers, Sweet, Red	3	None
Ribs and Sauerkraut	2	None
Rice Pilaf	1	None
Sloppy Joe Mix*	15	None
Snails	3	None

TABLE 26: Microbiological Isolates from Miscellaneous Items (Cont)

Item	Number of Samples	Significant Results
Soup and Gravy Base - Ham Flavor	6	None
Spaghetti and Beef	5	Coliform - 1 Positive
Spaghetti and Meat Sauce	1	None
Spanish Rice	1	None
Starch	5	None
Sugar	7	None
Sugar, Granulated	1	None
Vinegar	19	Yeast and Mold - 1 Positive
Vinegar - Apple Cider	6	None
TOTAL	288	

*Trade Names

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches

FOOD ITEM	Aerobic Plate Count, 1000/g							Coliforms/g							Yeast and Mold/g							E. coli
	N	<3	3-20	21-40	41-60	61-80	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100	>100	POS	NEG				
<u>INFLIGHT MEALS</u>																						
B37 Chicken	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
Teans	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Meat	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Potatoes	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Beef Burgundy	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Meat	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Noodles	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Beef Steak	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Green Beans	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Meat	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Noodles	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Beef Tenderloin	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Composite	2	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2				
Beef	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1				
Vegetable	4	0	0	1	2	0	0	1	0	0	0	0	0	1	0	0	0	1				
Cheese Omelet	4	0	2	1	1	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	4				
Eggs	4	4	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	4				
Ham	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	4				
Hash Browns	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	4				
Chicken Armagnac	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Carrots	2	1	0	0	0	0	0	1	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2				
Macaroni	2	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2				
Meat	2	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2				
Peas	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	1	1				
Chicken, Sliced	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1				
Chicken	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
Corn	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Meat	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Potatoes	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Coq Au Vin	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Green Beans	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1				
Meat	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1				
Rice	2	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	1				
Egg Omelet	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Eggs	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Ham	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Potatoes	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Egg	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Potatoes	1	0	0	1	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Sausage	1	0	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
French Toast	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1				
Apples	2	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2				
Sausage	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2				
Toast	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2				

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1,000/g						Coliforms/g						Yeast and Mold/g						E. coli
	N	<3	3-20	21-40	41-60	61-81	81-100	>100	N	<3	3-20	21-40	41-60	61-81	81-100	>100	POS	NEG	
<u>POULTRY (Cont.)</u>																			
Chicken Thighs	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested
Chicken Vega	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	0 1
Turkey	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	Not Tested	0 1
Turkey, Creamed	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested
Turkey, Sliced	3	0	2	0	0	0	0	1	3	1	0	1	0	0	0	1	0	Not Tested	1 2
<u>PRECOOKED FROZEN MEALS</u>																			
BBO Chicken	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Tested	0 1
Beans	5	3	2	0	0	0	0	0	3	3	0	0	0	0	0	0	0	Not Tested	0 4
Meat	4	1	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested	0 2
Potatoes	1	0	0	1	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Starch	4	0	1	2	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested	0 3
Vegetables	7	5	0	0	0	0	0	2	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 7
Beef Burgundy	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested	0 0
Carrots	9	6	1	1	0	0	1	3	3	0	0	0	0	0	0	0	0	Not Tested	0 6
Composite	8	6	1	0	0	1	0	2	2	0	0	0	0	0	0	0	0	Not Tested	0 6
Meat	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested
Noodles	2	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	Not Tested	Not Tested
Rice	2	2	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	Not Tested	Not Tested
Vegetable	2	2	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	Not Tested	0 2
Beef Pot Pie	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	1 0
Beef Pot Roast	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Meat	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Potatoes	1	0	0	0	0	0	0	1	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	1 0
Vegetables	5	1	0	1	0	1	2	0	5	5	0	0	0	0	0	0	0	Not Tested	3 1
Beef Roast	5	0	2	0	0	0	1	2	3	3	0	0	0	0	0	0	0	Not Tested	0 4
Gravy	4	1	0	0	0	0	0	3	3	3	0	0	0	0	0	0	0	Not Tested	0 3
Meat	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Noodles	5	0	2	0	1	0	0	2	4	4	0	0	0	0	0	0	0	Not Tested	0 4
Starch	2	2	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 2
Vegetables	2	2	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 2
Beef Sirloin	2	2	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 2
Carrots	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	0 1
Composite	14	6	5	2	0	1	0	0	3	3	0	0	0	0	0	0	0	Not Tested	0 12
Hash	2	0	2	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 2
Meat	9	9	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	0 9
Peas and Carrots	6	4	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	Not Tested	0 5
Potatoes	1	0	1	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Vegetable	3	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	Not Tested	0 3
Beef	4	1	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	Not Tested	0 2
Beans	3	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Composite	4	1	0	1	0	0	0	2	2	2	0	0	0	0	0	0	0	Not Tested	0 3
Meat	3	0	0	0	0	0	0	3	2	1	1	0	0	0	0	0	0	Not Tested	0 2
Noodles	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0 1
Pice	2	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	Not Tested	0 1
Vegetable	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	0 1

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					Yeast and Mold/g					E. coli		
	N	<3	3-20	21-40	41-80	61-80	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100		>100	POS
PRECOOKED FROZEN MEALS (Cont)																		
Boneless Chicken Dinner	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Butt Steak, Composite	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested
Chicken A la Supreme	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested
Chicken Armagnac																		
Meat	3	1	0	0	2	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	3
Noodles	3	0	1	0	0	1	1	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	3
Vegetables	2	0	0	0	0	0	1	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2
Chicken Breast																		
Composite	2	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested
Chicken Marengo																		
Composite	2	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested
Chicken																		
Composite	5	5	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	1
Green Beans	1	0	0	0	0	1	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Meat	2	1	1	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2
Rice	2	0	1	0	0	1	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2
Potatoes	1	0	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Vegetable	1	0	0	0	1	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Coq Au Vin																		
Meat	3	1	0	0	1	0	0	1	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	1	2
Rice	3	0	0	0	0	0	3	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	1	2
Vegetable	3	0	1	0	0	0	2	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	3
Egg Omelet																		
Apples	1	1	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Composite	8	5	1	0	1	0	1	0	7	7	0	0	0	0	0	0	0	1
Eggs	2	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1
Pancake	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested
Sausage	2	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	Not Tested
French Toast																		
Composite	3	3	0	0	0	0	0	3	3	3	0	0	0	0	0	0	0	1
Meat	2	2	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Toast	2	2	0	0	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Haddock, Composite	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Ham and Eggs																		
Apples	2	1	0	0	0	0	1	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	2
Ham	1	0	0	0	0	0	1	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	1
Italian Style Dinner																		
Vegetables	2	0	0	0	0	0	0	2	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	2	0
Mexican Style Dinner	1	0	0	1	0	0	0	0	2	2	0	0	0	0	0	0	0	1
Pancakes																		
Meat	4	3	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4
Pancakes	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Pork Loaf, Composite	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Pot Roast																		
Bread	1	0	0	0	1	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	0	Not Tested

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g							Coliforms/g							Yeast and Mold/g							E. coli						
	N	<3	3-20	21-40	41-60	61-80	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100	>100	N	<3	3-20	21-40	41-60		61-80	81-100	>100	POS	NEG	
PRECOOKED FROZEN MEALS (Cont)																												
Pot Roast (Cont)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Cornbread	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Gravy	2	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Meat	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Vegetable																												
Salisbury Steak	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Carrots	6	3	2	0	0	0	1	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Composite	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Gravy	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Meat	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Potatoes	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Scrambled Eggs																												
Eggs	9	3	0	1	1	0	1	3	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Meat	5	2	1	0	0	0	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Potatoes	7	6	0	0	0	0	1	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Starch	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Swiss Steak																												
Composite	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Meat	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Peas and Carrots	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Potatoes	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Tuna Noodle Casserole	2	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Turkey Dinner	8	0	4	0	0	0	4	8	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Veal Parmigiana																												
Composite	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Waffles and Sausage																												
Waffles, Composite	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Composite	3	2	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Meat	3	2	0	0	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Waffle	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Waffles, Composite																												
SALADS																												
Avocado	7	4	1	0	0	1	0	0	1	7	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Banana Jello	4	4	0	0	0	0	0	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
BBQ Chicken	4	2	2	0	0	0	0	4	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bean	4	3	1	0	0	0	0	4	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Carrot	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Carrot and Raisin	16	3	2	1	1	1	1	7	22	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	
Cherry Jello	11	11	0	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Chicken	69	36	15	1	2	2	11	69	53	7	3	1	1	3	1	3	1	3	1	3	1	3	1	3	1	3	5	
Chicken, Chunky	6	2	2	1	0	0	1	6	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Cole Slaw	128	35	48	10	6	4	2	23	127	112	7	2	1	0	2	3	109	60	21	11	2	2	1	12	3	87		
Cranberry & Pineapple	22	22	0	0	0	0	0	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					Yeast and Mold/g					E. coli	
	N	<3	3-20	21-40	41-80	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100	>100		POS
Cream Cheese	3	2	1	0	0	0	0	3	0	1	1	0	0	0	1	0	1
Cream Dessert	2	1	0	0	0	0	0	2	0	0	0	0	0	0	2	0	2
Egg	34	6	5	3	3	2	12	37	22	6	1	0	3	2	3	20	9
Fruit	3	2	0	0	0	0	1	3	3	0	0	0	0	0	0	0	2
Fruit Cocktail	13	13	0	0	0	0	0	13	13	0	0	0	0	0	0	0	2
Fruit Cocktail Jello	8	7	0	1	0	0	0	8	8	0	0	0	0	0	0	0	2
Fruit Gelatin	3	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3
Fruit Treat	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Golden Glow	26	24	2	0	0	0	0	26	26	0	0	0	0	0	0	0	7
Ham	53	28	15	2	2	1	2	53	47	3	1	1	0	0	1	14	1
Ham and Cheese	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	1
Hot Pimiento Cheese	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
Jello	7	6	0	0	0	0	1	7	7	0	0	0	0	0	0	0	3
Kidney Bean	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Lemon Marble Parfait	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Macaroni	180	75	44	12	4	3	5	37	176	164	1	0	0	0	6	159	75
Macaroni and Egg	8	2	1	0	0	1	3	8	8	0	0	0	0	0	0	0	2
Macaroni and Tuna	5	3	1	0	0	0	1	5	5	0	0	0	0	0	0	0	5
Mandarin	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Meiba Jello	18	17	1	0	0	0	0	18	18	0	0	0	0	0	0	0	1
Orange Pineapple	22	20	2	0	0	0	0	22	22	0	0	0	0	0	0	0	5
Parfait	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Peach Jello	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Pear Jello	20	20	0	0	0	0	0	20	18	0	2	0	0	0	0	0	5
Perfection	24	23	1	0	0	0	0	24	24	0	0	0	0	0	0	0	7
Pimiento	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
Pimiento Cheese	15	14	1	0	0	0	0	15	14	0	0	0	0	1	0	1	0
Pineapple Pear Jello	18	17	1	0	0	0	0	18	18	0	0	0	0	0	0	0	13
Pineapple Pear Banana	4	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	4
Potato	284	115	68	20	13	10	8	50	282	262	9	2	0	1	13	240	105
Potato Egg	7	2	0	0	2	1	0	2	7	6	1	0	0	0	0	1	0
Roast Beef	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0
Salad Mix	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0
Spiced Cherry Jello	25	25	0	0	0	0	0	25	24	1	0	0	0	0	0	0	7
Spiced Peach	19	17	1	0	0	0	1	19	19	0	0	0	0	0	0	4	3
Strawberry Parfait	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Strawberry Pineapple	10	10	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0
Strawberry Pineapple	7	6	0	1	0	0	0	7	7	0	0	0	0	0	0	0	1
Sweet and Sour Bean	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Three Bean	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	1
Tropical Delight	4	4	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0
Tropical Parfait	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Tuna	38	22	9	4	1	1	0	41	30	5	2	2	0	0	2	22	6

SALADS (Cont)

Commercial Sterility

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meals, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count/g						Coliforms/g						Yeast and Mold/g						E. coli
	N	<3	3-20	21-40	41-60	61-81	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100	>100	POS	NEG	
Tuna and Macaroni	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	Not Tested	
Turkey	4	3	1	0	0	0	0	0	4	4	0	0	0	0	0	0	2	0	3
Waldorf	3	3	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	2
<u>SALADS (Cont)</u>																			
<u>SANDWICH SPREADS</u>																			
Cheddar	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Cheese	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	Not Tested
Cheese and Pickle	2	1	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1
Chicken Salad	3	1	0	0	1	1	0	0	3	3	0	0	0	0	0	0	0	0	1
Chicken Salad	6	5	1	0	0	0	0	0	6	5	1	0	0	0	0	0	0	0	5
Chunky Pimiento	4	4	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	1
Ham	2	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Ham Salad	7	2	3	0	0	0	0	0	5	5	0	0	0	0	0	0	1	0	4
Japaneno	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Japaneno	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Pimiento	27	23	4	0	0	0	0	0	26	23	2	0	1	0	0	0	2	0	15
Pimiento and Jalapeno																			
Peppers	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	Not Tested
Pimiento Cheddar	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Pimiento Cheese	11	10	1	0	0	0	0	0	10	10	0	0	0	0	0	0	1	6	0
Pimiento, Hot	5	3	2	0	0	0	0	0	5	4	0	0	1	0	0	0	0	1	2
Sandwich Spread	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Tested
Tuna Salad	3	2	1	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	2
<u>SANDWICHES</u>																			
Amega	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
BLT	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Bacon and Egg	2	0	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1
BBQ	4	4	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	1
BBQ, Beef	8	4	2	1	0	0	0	1	12	7	2	0	1	0	1	1	0	0	6
Beef Taco	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
Beef Burger	8	4	3	0	0	0	1	0	7	4	1	0	1	0	0	1	7	0	1
Bologna	4	3	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
Bologna and Cheese	16	5	7	0	0	1	0	3	19	14	2	1	0	0	1	1	4	1	16
Bun	3	1	1	0	0	0	0	1	3	3	0	0	0	0	0	0	0	0	3
Canadian Bacon & Eggs	4	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	3
Char-Broil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cheese	4	2	2	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	1
Cheese & Bean Taco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cheeseburger	9	2	5	2	0	0	0	0	10	10	0	0	0	0	0	0	0	0	3
Chili Dog	6	2	2	1	0	0	0	0	7	4	1	0	0	0	0	0	1	0	4
Chili Meat Taco	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Chiliburger	2	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1000/p						Coliforms/g						Yeast and Mold/g						E. coli						
	N	<3	3-20	21-40	41-80	81-100	N	<3	3-20	21-40	41-60	61-80	81-100	>100	N	<3	3-20	21-40	41-60	61-80	81-100	>100	POS	NEC	
SANDWICHES (Cont.)																									
Chicken	4	4	0	0	0	0	4	4	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4
Chicken Fried Patty	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4
Chicken Fried Steak	4	4	0	0	0	0	3	3	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0	0	3
Chicken Salad	14	12	1	0	0	0	14	13	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	12
Chicken, Sliced	2	0	1	0	0	0	2	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	1	0
Chopped Chicken	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	Not Tested
Chuckwagon	5	2	2	0	0	0	1	3	2	0	1	0	0	0	0	4	0	2	1	0	0	0	1	0	3
Corn Dog	5	1	3	0	0	0	1	5	5	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	5
Early Bird Muffin	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Tested
Egg	5	3	0	0	1	0	5	3	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	5
Egg and Sausage	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Tested
Egg and Sausage Taco	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Egg Salad	2	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	1
Farm Boy	2	1	0	0	0	0	2	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0
Fish	3	1	1	0	0	0	3	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5
Fish and Cheese	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	Not Tested
Grilled Cheese	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	Not Tested
Ham	20	7	2	0	0	0	17	11	4	2	0	0	0	0	0	12	3	2	4	1	1	0	1	0	10
Ham and Cheese	24	10	5	1	0	1	17	11	4	2	0	0	0	0	0	10	2	7	0	0	0	1	0	6	27
Ham & Cheese on Rye	2	1	1	0	0	0	1	6	35	26	8	0	0	1	1	10	2	7	0	0	0	1	0	0	1
Ham and Egg	8	1	1	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Ham and Swiss Cheese	8	1	1	1	0	0	7	2	2	0	1	0	0	1	3	8	2	2	0	0	0	1	3	2	3
on Rye	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ham, Lettuce & Tomato	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Ham on Rye	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Ham Salad	10	7	2	0	0	0	10	9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	2
Ham, Sliced	4	0	1	0	0	0	4	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	9
Hamburger	10	4	4	0	0	0	7	7	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	4
Hoagie	8	1	3	0	0	0	7	7	0	0	0	0	0	0	0	10	4	4	2	0	0	0	0	0	6
Hot Dog	3	0	1	0	0	0	2	2	0	0	0	0	0	0	0	2	0	1	1	0	0	0	0	0	7
Meat Loaf	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
Muffin Egg Delight	3	0	0	0	0	0	3	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Pimiento Cheese	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Polish Sausage Taco	3	0	0	0	0	0	3	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1
Poor Boy	18	4	8	0	0	0	17	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Pork	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	1	2	0	0	0	1	1	14
Pancho	2	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Reuben	5	1	1	0	0	0	8	8	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	6
Roast Beef	14	5	5	0	0	0	15	15	1	1	1	0	0	1	1	5	3	0	1	0	0	0	1	2	3
Roast Beef and Ham	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	16
and Cheese	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Roast Beef and Smoked Ham and Cheese	2	0	0	1	0	0	1	2	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	2	0
Roast Pork	2	0	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2

TABLE 27: Microbiological Results of Analyzing Inflight Meals, Luncheon Meats, Poultry, Precooked Frozen Meals, Salads, Sandwich Spreads, and Sandwiches (Continued)

FOOD ITEM	Aerobic Plate Count 1000/F							Coliforms/F							Yeast and Mold/g							E. coli POS NEG			
	N	3-		21-		41-		N	3-		21-		41-		N	3-		21-		41-			POS	NEG	
		<3	20	40	60	80	100		>100	<3	20	40	60	80		100	>100	<3	20	40	60				80
SANDWICHES (Cont)																									
Salami	2	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Salami and Cheese	10	1	2	1	1	1	0	4	14	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Sausage and Biscuit	8	5	3	0	0	0	0	4	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	13
Sausage and Egg	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Sausage and Egg Taco	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sausage Dog	2	1	1	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Servoburger	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Tested
Servoburger and Cheese	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Sloppy Joe	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Spiced Ham and Cheese	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Stacked Beef and Cheese	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BBO Sauce	2	0	0	0	0	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Steak	2	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Steak and Onion	3	1	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Submarine	6	2	2	1	0	0	0	1	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Super Cheeseburger	3	0	3	0	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Super Dagwood	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Super Dog	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Super Gizmo	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Super Hoagie	5	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Super Submarine	7	2	1	0	0	0	0	1	3	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Torpedo	3	2	1	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Tuna	2	0	2	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Tuna Salad	10	4	2	1	1	1	0	1	10	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Turkey	5	3	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Turkey and Dressing	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Twin Cheeseburger	5	2	2	1	0	0	0	2	5	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	7
Veal Burgers	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Veal Streak	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
																									2

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g						Coliforms/g						F. coli		SIGNIFICANT RESULTS			
	N	<3	3-20	21-40	41-60	61-81	81-100	>100	N	<3	3-20	21-40	41-60	61-80		81-100	>100	POS
BEEF (Cont)																		
Steak and Onions	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Not Tested	None
Stew Meat	19	0	5	2	2	1	1	8	20	4	2	1	1	2	0	10	Not Tested	<i>Pseudomonas fluorescens</i> - 1 isolate
Stew Meat, Frozen	17	0	3	5	1	1	0	7	17	6	2	0	2	1	0	6	Not Tested	None
Swiss Steak	13	3	2	1	0	1	1	5	14	4	3	1	1	0	0	5	Not Tested	None
Swiss Steak, Frozen	3	0	0	1	0	0	0	2	3	1	1	0	0	0	1	1	Not Tested	None
Veal	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	Not Tested	None
Veal Burger	4	1	0	0	0	0	0	3	3	0	0	0	0	0	1	2	Not Tested	None
Veal Loaf	2	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2	Not Tested	None
Veal Loaf and Gravy	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	Not Tested	None
Veal Loaf, Fresh	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	Yeast and Mold - 1 isolate
APC 100,000/g																		
Chili Meat	16	2	6	1	1	0	0	6	16	9	2	0	0	0	1	4	Not Tested	None
Chili Meat, Frozen	22	7	6	2	0	0	0	7	21	5	7	2	1	1	1	4	1	0
Cube Steak	46	28	11	1	0	0	0	6	46	34	6	1	2	0	1	2	Not Tested	None
Cube Steak, Frozen	74	41	22	2	1	2	1	5	71	54	9	2	0	1	0	5	Not Tested	None
Extra Lean, Ground	10	5	3	1	0	0	0	1	10	10	0	0	0	0	0	0	Not Tested	None
Ground	224	30	84	39	14	9	7	41	180	84	43	10	4	3	0	36	15	9
Ground Chuck	25	6	5	5	0	0	2	7	22	8	6	2	1	1	0	4	2	2
Ground Chuck, Frozen	24	5	7	2	2	0	0	8	23	9	6	1	2	0	0	5	Not Tested	None
Ground, Frozen	244	67	90	15	11	12	3	46	235	113	39	14	12	7	5	45	1	6
Ground Patties	10	2	2	0	0	3	0	3	4	0	0	0	0	0	0	4	0	2
Ground Patties, Frozen	11	2	5	1	0	1	0	2	10	3	4	0	0	0	0	3	2	2
Ground Round	29	8	12	2	0	0	0	7	28	14	6	2	2	1	0	3	2	1
Ground Round, Frozen	42	19	15	1	0	1	2	4	40	26	7	2	0	0	0	5	Not Tested	None
PORK																		
Bacon	2	2	0	0	0	0	0	1	2	2	0	0	0	0	0	0	Not Tested	None
Chops	3	2	0	0	0	0	0	1	3	3	0	0	0	0	0	0	Not Tested	Pathogens - 1 Negative

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g						Coliforms/g				E. coli	POS MFG	SIGNIFICANT RESULTS					
	N	<3	3-20	21-40	41-60	61-81	81-100	>100	<3	3-20				21-40	41-60	61-81	>100	
Ground	23	0	0	0	0	0	0	23	22	0	2	0	1	1	17	19	13	<i>Aerobacter calcoaceticus</i> -1 isolate <i>Aeromonas hydrophila</i> - 2 isolates <i>Clostridium perfringens</i> - 9 isolates <i>Citrobacter freundii</i> - 3 isolates Diphtheroids - 1 isolate <i>Enterobacter aerogenes</i> - 2 isolates <i>Enterobacter cloacae</i> - 8 isolates <i>Enterobacter hafniae</i> - 9 isolates Fecal streptococci - 21 isolates Micrococci species - 4 isolates <i>Proteus mirabilis</i> - 2 isolates <i>Proteus vulgaris</i> - 4 isolates <i>Salmonella enteritidis</i> - 1 isolate <i>Salmonella</i> species - 2 isolates <i>Salmonella enteritidis</i> ser. Subtypus - 1 isolate <i>Serratia liquefaciens</i> - 2 isolates <i>Serratia marcescens</i> - 1 isolate <i>Staphylococcus aureus</i> - 5 isolates <i>Staphylococcus epidermidis</i> -8 isolates <i>Streptococcus bovis</i> - 1 isolate <i>Streptococcus durus</i> - 1 isolate <i>Streptococcus faecalis</i> - 4 isolates <i>Streptococcus faecalis</i> var. <i>liquefaciens</i> - 5 isolates <i>Streptococcus faecalis</i> var. <i>zymogenes</i> - 1 isolate <i>Streptococcus lactis</i> - 2 isolates <i>Streptococcus mitis</i> - 1 isolate <i>Streptococcus sanguis</i> - 2 isolates <i>Yersinia enterocolitica</i> - 1 isolate <i>Clostridium perfringens</i> - 2 isolates <i>Enterobacter cloacae</i> - 1 isolate Fecal streptococci - 2 isolates Micrococci species - 1 isolate <i>Proteus mirabilis</i> - 1 isolate <i>Staphylococcus aureus</i> - 1 isolate <i>Staphylococcus epidermidis</i> - 1 isolate <i>Streptococcus faecalis</i> - 1 isolate <i>Streptococcus faecalis</i> var. <i>zymogenes</i> - 1 isolate None
	2	0	1	0	0	0	0	1	2	1	0	0	0	0	1	1	2	
Ground, Frozen	2	0	1	0	0	0	0	1	2	1	0	0	0	0	1	1	2	
Ham	3	1	2	0	0	0	0	0	3	3	0	0	0	0	0	0	1	

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					F. coli	POS	NEG	SIGNIFICANT RESULTS					
	N <3	3-20	21-40	41-60	61-81	81-100	>100	N <3	3-20	21-40					41-60	61-80	81-100	>100	
Ham, Canned	11	11	0	0	0	0	0	48	46	0	0	0	0	2	1	0	Aerobes - 15 isolates Alpha streptococcus - 1 isolate Anaerobes - 5 isolates Microcococcus species - 1 isolate Mycob species - 1 isolate Proteus - 1 isolate Bacillus species - 4 isolates Facal streptococci - 4 isolates Proteus vulgaris - 6 isolates Pseudomonas putrefaciens - 4 isolates Serratia liocheiformis - 4 isolates Serratia marcescens - 4 isolates Staphylococcus epidermidis - 4 isolates None		
Ham, Cooked	4	0	0	0	0	0	4	4	0	0	0	0	0	4	0	4	Proteus - 1 isolate Bacillus species - 4 isolates Facal streptococci - 4 isolates Proteus vulgaris - 6 isolates Pseudomonas putrefaciens - 4 isolates Serratia liocheiformis - 4 isolates Serratia marcescens - 4 isolates Staphylococcus epidermidis - 4 isolates None		
Ham, Diced	83	51	22	2	0	1	2	88	11	9	8	11	4	2	43	1	6	Staphylococcus aureus - 1 isolate Staphylococcus epidermidis - 1 isolate None	
Ham, Sliced	104	62	25	4	3	3	2	106	32	24	7	7	4	9	23	1	10	Staphylococcus aureus - 1 isolate Staphylococcus epidermidis - 1 isolate None	
Ham, Sliced, Frozen	15	0	7	0	0	1	2	5	17	9	4	2	0	1	1	Not Tested	None		
Ham, Smoked	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	Not Tested	None		
Loin Roast	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	Not Tested	None		
Pork Hinds, Fried	3	2	1	0	0	0	0	3	3	0	0	0	0	0	0	Not Tested	None		
Roast	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	Not Tested	None		
Spare Ribs	2	0	0	1	0	0	0	2	0	0	0	1	0	0	1	Not Tested	Staphylococcus aureus - 2 isolates		
<u>SAUSAGE</u>																			
Beef Franks	1	1	0	0	0	0	0	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	None		
Bockwurst	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	Not Tested	None		
Bologna	7	4	2	0	0	0	0	1	7	6	1	0	0	0	0	2	Bacillus species - 1 isolate Yeast and Mold - 1 isolate Bacillus species - 1 isolate Yeast and Mold - 8 isolates SPC - 3 spreaders		
Bologna, Sliced	77	46	11	3	2	1	4	7	82	52	15	7	0	0	1	7	2	6	Yeast and Mold - 8 isolates SPC - 3 spreaders None
Brammschweiger	1	0	0	0	0	0	0	1	0	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	None		
Chorizos	5	0	0	0	0	0	0	5	5	2	0	0	0	0	0	5	5	Facal streptococci - 5 isolates Lactobacillus - 5 isolates	
Frankfurters	3	0	1	0	1	0	0	1	3	3	0	0	0	0	0	0	1	3	Facal streptococci - 3 isolates Klebsiella pneumoniae - 1 isolate Proteus mirabilis - 1 isolate Staphylococcus aureus - 1 isolate
Hot	6	4	0	1	0	0	0	1	6	6	0	0	0	0	0	0	Not Tested	Not Tested	Staphylococcus epidermidis - 1 isolate Streptococcus faecalis - 1 isolate Bacillus species - 1 isolate

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					E. coli		SIGNIFICANT RESULTS						
	N	<3	3-20	21-40	41-60	61-80	81-100	>100	N	<3	3-20	21-40		41-60	61-80	81-100	>100	POS	NEG
Hot Italian Pork	30	0	0	0	0	0	0	0	30	3	1	3	0	2	1	20	22	16	Acetobacter calcoaceticus var. anitratum - 2 isolates Aeromonas hydrophila - 1 isolate Bacillus species - 4 isolates Citrobacter freundii - 6 isolates Clostridium perfringens - 10 isolates Enterobacter cloacae - 10 isolates Fecal streptococci - 26 isolates Klebsiella pneumoniae - 2 isolates Micrococcus species - 4 isolates Proteus mirabilis - 3 isolates Proteus vulgaris - 4 isolates Pseudomonas fluorescens group - 2 isolates Pseudomonas species - 1 isolate Salmonella - 3 isolates Salmonella enteritidis - 2 isolates Salmonella enteritidis ser. Infantis - 1 isolate Serratia liquefaciens - 4 isolates Staphylococcus aureus - 3 isolates Staphylococcus epidermidis - 6 isolates Streptococcus faecalis - 3 isolates Streptococcus faecalis var. liquefaciens - 4 isolates Streptococcus pneumoniae - 1 isolate
Hot Italian Pork, Frozen	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	Clostridium perfringens - 1 isolate Fecal streptococci - 1 isolate Acetobacter calcoaceticus var. anitratum - 1 isolate Citrobacter freundii - 1 isolate Fecal streptococci - 5 isolates Klebsiella pneumoniae - 1 isolate Proteus mirabilis - 1 isolate Proteus vulgaris - 1 isolate Staphylococcus aureus - 1 isolate Streptococcus faecalis var. liquefaciens - 1 isolate
Italian Sausage	5	0	0	0	0	0	0	5	5	0	1	0	0	1	0	3	2	4	Acetobacter calcoaceticus var. anitratum - 1 isolate Citrobacter freundii - 1 isolate Fecal streptococci - 5 isolates Klebsiella pneumoniae - 1 isolate Proteus mirabilis - 1 isolate Proteus vulgaris - 1 isolate Staphylococcus aureus - 1 isolate Streptococcus faecalis var. liquefaciens - 1 isolate

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					F. coli		SIGNIFICANT RESULTS						
	N	<3	20	40	60	80	100	>100	N	<3	20	40		60	80	100	>100	POS	NEG
Pork	242	22	32	13	11	5	3	156	241	73	26	11	3	2	3	123	89	173	Actinobacter gallopectone var. antitratum - 5 isolates Aeromonas hydrophila - 2 isolates Arizona kirkhamii - 1 isolate Bacillus species - 15 isolates Citrobacter freundii - 17 isolates Clostridium perfringens - 22 isolates Diptheroids - 3 isolates Enterobacter agglomerans - 1 isolate Enterobacter cloacae - 24 isolates Enterobacter hafniae - 11 isolates Faecal streptococci - 237 isolates Klebsiella pneumoniae - 11 isolates Micrococcus species - 15 isolates Proteus mirabilis - 15 isolates Proteus vulgaris - 10 isolates Pseudomonas fluorescens group - 5 isolates Pseudomonas maltophilia - 2 isolates Salmonella (sero-group C2) - 1 isolate Serratia liquefaciens - 8 isolates Staphylococcus aureus - 23 isolates Staphylococcus epidermidis - 30 isolates Streptococcus equi - 1 isolate Streptococcus cremoris - 1 isolate Streptococcus faecalis - 14 isolates Streptococcus faecalis var. liquefaciens - 22 isolates Streptococcus faecalis var. zymogenes - 1 isolate Streptococcus faecium - 3 isolates Streptococcus lactis - 4 isolates Streptococcus pneumoniae - 1 isolate Streptococcus salivarius - 1 isolate Streptococcus saginis - 3 isolates Enterobacter cloacae - 1 isolate Klebsiella pneumoniae - 1 isolate Streptococcus epidermidis - 1 isolate Streptococcus faecalis - 1 isolate
Pork and Sage	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	

SAUSAGE (Cont.)

TABLE 28: Microbiological Results of Analyzing Beef, Pork, and Sausage (Continued)

FOOD ITEM	Aerobic Plate Count 1000/g					Coliforms/g					F. coli	POS NEG	SIGNIFICANT RESULTS						
	N <3	3-20	21-40	41-60	61-80	81-100	>100	N <3	3-20	21-40				41-60	61-80	81-100	>100		
Pork, Hot	153	11	19	4	3	3	2	111	109	0	13	6	6	3	0	81	39	127	<p>Actinobacteriaceae var. nitratum - 3 isolates</p> <p>Bacillus species - 8 isolates</p> <p>Citrobacter diversus - 1 isolate</p> <p>Citrobacter freundii - 6 isolates</p> <p>Clostridium perfringens - 12 isolates</p> <p>Enterobacter agglomerans - 1 isolate</p> <p>Enterobacter cloacae - 9 isolates</p> <p>Enterobacter hafniae - 1 isolate</p> <p>Fecal streptococci - 137 isolates</p> <p>Klebsiella pneumoniae - 7 isolates</p> <p>Micrococcus species - 7 isolates</p> <p>Proteus mirabilis - 9 isolates</p> <p>Proteus vulgaris - 4 isolates</p> <p>Providencia stuartii - 1 isolate</p> <p>Pseudomonas fluorescens group - 1 isolate</p> <p>Salmonella enteritidis ser. Anatum - 1 isolate</p> <p>Salmonella enteritidis ser. Derby - 1 isolate</p> <p>Salmonella enteritidis - 2 isolates</p> <p>Serratia liquefaciens - 2 isolates</p> <p>Serratia marcescens - 1 isolate</p> <p>Serratia species - 1 isolate</p> <p>Staphylococcus aureus - 9 isolates</p> <p>Staphylococcus epidermidis - 13 isolates</p> <p>Streptococcus agalactiae - 1 isolate</p> <p>Streptococcus durans - 1 isolate</p> <p>Streptococcus equi - 1 isolate</p> <p>Streptococcus faecalis - 9 isolates</p> <p>Streptococcus faecalis var. liquefaciens - 2 isolates</p> <p>Streptococcus faecalis var. zymogenes - 2 isolates</p> <p>Streptococcus lactis - 2 isolates</p> <p>Streptococcus pyogenes - 1 isolate</p> <p>Streptococcus saprofitus - 5 isolates</p> <p>Yersinia enterocolitica - 1 isolate</p>

SAUSAGE (Cont)

GLOSSARY OF TERMS AND ABBREVIATIONS

CFPF - Central Food Preparation Facility

TSG - The Surgeon General

PFM - Precooked Frozen Meals

SPC - Standard Plate Count

var. - variety

ser. - serotype

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