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Field of Testing : Chemical Testing and
Microbiological Testing

Chemical testing

Products	Specific Tests	Method/Reference
I. Foods		
.01 Cereal and cereal products		
1. Breakfast cereals 2. Cereal/cereal grains 3. Cultured seeds and grains 4. Soya flours concentrates and isolates 5. Flour, corn meal, corn grits, semolina 6. Frozen entrees containing rice or corn flour 7. Soy protein 8. Tofu 9. Pasta products and noodles (e.g., rice paper, rice vermicelli, soybean pastas and noodles) 10. Starch	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	
		Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.02 Nuts and nut products		
1. Peanut butter and other nut butters	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	

	Sodium	AOAC Official Method 935.35
	Potassium	
.03 Dairy products		
1. All cheese made from pasteurized milk (cottage cheese, soft & semi-solid cheese) 2. Processed cheese spread 3. Ice cream and sherbet plain and flavoured 4. Ice cream with added ingredients 5. Flavored ice 6. Milk powders (whole, non-fat or filled milk, buttermilk, whey & whey protein concentrate) 7. Sweetened Condensed milk 8. Liquid Milk (evaporated or Ready to Drink) and Cream (Ultra Heat Temperature/sterilized) 9. Pasteurized milk 10. Pasteurized cream 11. Yogurt and other fermented milk	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.04 Meat and Meat Products		
1. Dried animal products 2. Meat pastes and pate' (heat treated) 3. Cold cuts, frozen and chilled hotdogs, corned beef, luncheon meat 4. Packaged cooked cured/salted meat (ham, bacon) 5. Fermented, comminuted meat, not cooked (dry and semi-dry fermented sausages) 6. Cooked poultry meat, frozen to be reheated before eating (e.g., prepared frozen meals) 7. Cooked poultry meat, frozen, ready-to-eat (e.g., turkey rolls) 8. Cured/smoked poultry meat 9. Dehydrated poultry products 10. Fresh/frozen raw chicken (during processing) 11. Meat products in hermetically sealed containers	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	

	Potassium	
.05 Fish and fish products, including mollusks, crustaceans, echinoderms		
1. Fresh and frozen fish and cold-smoke 2. Pre-cooked breaded fish 3. Smoked, dried, canned or fermented, and/or salted	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.06 Sugar and Sugar Products		
1. Refined and raw sugars 2. Brown sugar 3. Sugar solutions and syrups 4. Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings) 5. Honey 6. Table-top sweeteners, including those containing high-intensity sweeteners	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude Protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.08 Fruits, jams and other fruit products		
1. Frozen fruits	Moisture	Gravimetric/AOAC
2. Coconut (desiccated)		
3. Sun dried fruit	Ash	Gravimetric/AOAC
4. Jams, jellies, marmalades		
5. Fruit-based spreads	Crude Fat	Petroleum ether Extraction/AOAC
6. Candied fruit		
7. Fruit preparations (pulp, purees, fruit toppings and coconut milk)	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
8. Fermented fruit products	Sodium	

9. Fruit fillings for pastries	Potassium	
.09 Vegetables and vegetable products		
1. Frozen vegetables	Moisture	Gravimetric/AOAC
2. Dried vegetables		
3. Vegetables in vinegar, oil, brine, or soybean sauce	Ash	Gravimetric/AOAC
4. Canned or bottled (pasteurized) or retort pouch vegetables	Crude Fat	Petroleum ether Extraction/AOAC
5. Fermented vegetable	Crude protein	Kjeldahl/AOAC
6. Cooked or fried vegetables	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.10 Alcoholic Beverages		
1. Beer and malt beverages	Moisture	Gravimetric/AOAC
2. Cider and perry		
3. Grape wines	Ash	Gravimetric/AOAC
4. Wines other than grapes		
5. Mead	Crude Fat	Petroleum ether Extraction/AOAC
6. Distilled spirits containing more than 15% alcohol	Crude protein	Kjeldahl/AOAC
7. Aromatized alcoholic beverages (e.g., beer, wine and spirituous cooler-type beverages, low alcoholic refreshers)	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.11 Soft drinks and cordial	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.12 Fruit juices, drinks and concentrates		
1. Fruit and vegetable juices	Moisture	Gravimetric/AOAC

2. Fruit and vegetable nectars	Ash	Gravimetric/AOAC
3. Water-based flavoured drinks (Carbonated, Non-carbonated, Concentrates (liquid or solid))	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
4. Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.13 Edible Fats and Oils		
1. Butter (whipped, pasteurized)	Moisture	Gravimetric/AOAC
2. Butter made from unpasteurized milk and milk products	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
3. Fats and oils essentially free from water (vegetable oils and fats, lard, tallow, fish oil, and other animal fats)	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
4. Fat spreads, dairy fat spreads and blended spreads	Potassium	
.14 Margarine	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
	Crude Fat	Petroleum ether Extraction/AOAC
	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
.15 Eggs and egg products		
1. Egg products (liquid, frozen, dried)	Moisture	Gravimetric/AOAC
	Ash	Gravimetric/AOAC
2. Preserved eggs, including alkaline, salted and canned eggs	Crude Fat	Petroleum ether Extraction/AOAC
3. Egg-based desserts (e.g., custard)	Crude protein	Kjeldahl/AOAC
	Calcium	AOAC Official Method 935.35
	Sodium	
	Potassium	
VI. Water		

.01 Bottled Water	Lead	3111B. Direct Air-Acetylene Flame Method, SMEWW
	Iron	
	Copper	

Microbiological testing

Products	Specific Tests	Method/Reference
Foods		
a. Milk powder and cream powder	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method – BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
01.2 Sweetened condensed milk	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
01.4 Pasteurized milk	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
01.5 Pasteurized cream	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
		Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>Salmonella</i>	
01.6 Yogurt and other fermented milk	<i>S. aureus</i>	

		Food Dilution Plating Technique/ Spreading Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
01.7 Cheese and cheese products; e.g., Cottage Cheese, soft and semi-soft cheese (moisture > 39%, pH > 5)	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method - BAM
	<i>E. coli</i> , MPN/g	MPN Method - BAM
	Coliforms, MPN/g	
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
01.8 Processed cheese spread	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method - BAM
01.9 All Raw Milk Cheese; Raw milk unripened, cheese with moisture >50%, pH 5.0	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
03.0 Edible Ices, Including Sherbet and Sorbet		
03.1 Ice cream and Sherbet (plain and flavored)	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method - BAM
03.2 Ice cream with added ingredients (nuts, fruits, cocoa etc.)		Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>Salmonella</i>	
	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM

	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method – BAM
03.3 Flavored Ice	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Coliforms, MPN/g	MPN Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
05.0 Fruits and vegetables, nuts and seeds		
05.1 Frozen Vegetables & Fruits (pH >4.5)	<i>E. coli</i> . MPN/g	MPN Method - BAM
05.4 Dried Vegetables		
	<i>E. coli</i> . MPN/g	MPN Method - BAM
05.5 Coconut (desiccated)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method – BAM
05. 6 Peanut Butter and other Nut Butters	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
- consumed w/o heating or other treatment to destroy microbes		
- used as ingredient in high moisture food		
05.7 Sun Dried Fruits	Molds Count	Food Dilution Plating Technique/ Pour Plate Method – BAM
	<i>E. coli</i> , MPN/g	MPN Method – BAM
07.0 Cereals and cereal products		
07.1 Breakfast cereals	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	Mold Count	Food Dilution Plating Technique/ Pour Plate Method - BAM

	Yeast and Yeast like fungi Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
07. 2 Cereals/Cereal Grains	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	Molds and Yeast Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
	<i>E. coli.</i> MPN/g	MPN Method – BAM
07.3 Cultured seeds and grains	<i>E. coli.</i> MPN/g	MPN Method – BAM
(e.g., bean sprouts, alfalfa etc.)	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
07.4 Soya flours, Concentrates and Isolates	Molds Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
07.5 Flour, corn meal, corn grits, semolina	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method US FDA BAM
07.7 Soy Protein	<i>E. coli.</i> MPN/g	MPN Method – BAM
		Food Dilution Plating Technique/ Pour Plate
	Yeast and Mold Count	Method US FDA BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
07.8 Tofu	<i>E. coli.</i> MPN/g	MPN Method – BAM

	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method – BAM
07.9 Pasta Products and Noodles Uncooked	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method US FDA BAM
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spreading Method – BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
07.10 Starch	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method US FDA BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
08.0 Bakery Products		
08.1 Frozen bakery products (ready to eat) with low acid or high a_w fillings or toppings	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method - BAM
08.2 Frozen bakery products (to be cooked) with low acid or high a_w fillings or toppings (e.g., meat pies and pizzas)	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
08.3 Frozen and refrigerated dough (Chemically leavened)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Mold Count	

	Yeast and Yeast like fungi Count	Food Dilution Plating Technique/ Pour Plate Method -BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method - BAM
	<i>E. coli</i>	MPN Method – BAM
08.4 Frozen and refrigerated dough	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Mold Count	Food Dilution Plating Technique/ Pour Plate Method – BAM
	Yeast and Yeast like fungi Count	
08.5 Baked Goods (microbiologically sensitive types e.g. containing eggs and dairy products)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method – BAM
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
08.6 Coated or Filled, Dried Shelf-Stable Biscuits	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Coliform Count	MPN Method – BA
9.0 Ready to Eat Savouries		
9.1 Snack Foods	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Mold Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
	Yeast and Yeast like fungi Count	
10. Meat and Meat Products		
10.1 Dried Animal Products	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method

	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
10.2 Meat paste and Pate (heat treated)	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
10.3 Cold Cuts, Frozen and Chilled Hotdogs, Corned Beef, Luncheon Meat	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
10.4 Packaged Cooked, cured/salted meat (ham, bacon)	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
10.5 Fermented, comminuted meat, not cooked (dry and semi-dry fermented sausages)	<i>E. coli</i>	MPN – BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	<i>Salmonella</i>	

10.6 Cooked Poultry meat, Frozen to be reheated before eating (e.g prepared frozen meals)		Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
10.7 Cured/Smoked Poultry Meat	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
10.8 Dehydrated poultry products	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
10.9 Fresh/Frozen Raw Chicken (during processing)	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method – BAM
11.0 Fish and fish products		
11.1 Fresh Frozen Fish and Cold-Smoked	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
11.2 Pre-cooked Breaded Fish	Aerobic Plate Count	Conventional Plate Count-Pour Plate Method - BAM
	<i>E. coli</i>	MPN- BAM
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM

11. 3 Frozen Raw Crustaceans	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
11. 4 Frozen Cooked Crustaceans	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
11. 5 Cooked, Chilled and Frozen Crabmeat	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
11. 6 Fresh and Frozen Bivalve Molluscs	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	<i>E. coli</i>	MPN – BAM
12.0 Spices, soups, sauces, salads and protein products		
12. 1 Dry Mixes for Soup and Sauces	Yeast and Mold Count	

		Food Dilution Plating Technique/ Pour Plate Method- BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
12.2 Yeast	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
12.3 Spices	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Mold Count	Food Dilution Plating Technique/ Pour Plate Method – BAM
12.4 Spices (ready to eat)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method – BAM
	Mold Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
	<i>Salmonella</i>	Enrichment Serology and Selective Plating Method/ Merck Microbiological Method
	<i>S. aureus</i>	Food Dilution Plating Technique/ Spread Plate Method – BAM
13.0 Beverages		
13.1 Non-alcoholic (e.g. Ready to drink soft drinks, iced tea, energy drinks)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method - BAM
13.2 Frozen juice concentrate	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
	Yeast and Mold Count	Food Dilution Plating Technique/ Pour Plate Method – BAM

13.3 Powdered beverages (Juices)	Aerobic Plate Count	Conventional Plate Count- Pour Plate Method - BAM
IV. Water		
1.0 Bottled Water	Heterotrophic	Conventional Plate Count/Pour Plate Method, SMEWW Method 9215
	Plate count	
	Total Coliform Count	Multiple Tube Fermentation Technique/ MPN Method, SMEWW
	Fecal Coliform Count	
	<i>E. coli</i> Count	

Legend to Reference Methods

AOAC – Association of Official Analytical Chemists

BAM - Bacteriological Analytical Manual

SMEWW - Standard Methods for Examination of Water and Wastewater

***** Nothing Follows *****