5. Department of Science and Technology – VI
   Regional Standards and Testing Laboratory

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Field of Testing	:	Chemical Testing
		Microbiological Testing

Chemical Testing

Products	Specific Tests	Method/Reference
I. Foods		
.01 Cereals and Cereal Products		
1. Breakfast cereals	Crude Protein	Kjeldahl Block Digestion Method (AOAC 2001.11, 20th ed.)
2. Cereal/cereal grains	Crude Fat	Soxhlet Method using petroleum ether with acid hydrolysis (In-house Method)
3. Cultured seeds and grains	Total Fat	
4. Soya flours concentrates and isolates	Moisture	AOAC 925.09, 925.10, 930.15 (AOAC 20th ed.)
5. Flour, corn meal, corn grits, semolina	Ash	AOAC 923.03 (AOAC 20th ed.)
6. Frozen entrees containing rice or corn flour	Carbohydrates and Energy	Calculation, AOAC 986.25E
7. Soy protein		
8. Tofu		
9. Pasta products and noodles (e.g. rice paper, rice vermicelli, soybean pastas and noodles)	Nutrifacts Evaluation	Calculation, FDA
10. Starch		

.03 Dairy Products		
1. All cheese made from pasteurized milk (cottage cheese, soft & semi-solid cheese)	Crude Protein	Kjeldahl Block Digestion Method (AOAC 991.20, 930.29, 20th ed.)
2. Processed cheese spread	Crude Fat	Soxhlet Method using petroleum ether with acid hydrolysis (In-house Method)
3. Ice cream and sherbet plain and flavoured	Total Fat	
4. Ice cream with added ingredients	Moisture	PT Procedure 930.15, 927.05
5. Flavored ice		
6. Milk powders (whole, nonfat or filled milk, buttermilk, whey & whey protein concentrate)	Ash	AOAC 945.46, AOAC 930.30 (AOAC 20th ed.)
7. Sweetened Condensed milk		
8. Liquid Milk (evaporated or Ready to Drink) and Cream (Ultra Heat Temperature/ sterilized)	Carbohydrates and Energy	Calculation, AOAC 986.25E
9. Pasteurized milk		
10. Pasteurized cream		
11. Yogurt and other fermented milk	Nutrifacts Evaluation	Calculation, FDA
.04 Meat and Meat Products		
1. Dried animal products	Crude Protein	Kjeldahl Block Digestion Method (AOAC 991.20, 20th ed.)
2. Meat paste and pate' (heat treated)	Crude Fat	Soxhlet Method using petroleum ether with acid hydrolysis (In-house Method)
3. Cold cuts, frozen and chilled hotdogs, corned beef, luncheon meat	Total Fat	
4. Packaged cooked cured/salted meat (ham, bacon)	Moisture	AOAC 925.45 (AOAC 20th ed.)
5. Fermented, comminuted meat, not cooked (dry and semi-dry fermented sausages)		
6. Cooked poultry meat, frozen to be re-heated before eating (e.g., prepared frozen meals)	Ash	AOAC 923.03, AOAC 920.153 (AOAC 20th ed.)

7. Cooked poultry meat, frozen, ready-to-eat (e.g., turkey rolls)	Carbohydrates and Energy	Calculation, AOAC 986.25E
8. Cured/smoked poultry meat		
9. Dehydrated poultry products		
10. Fresh/frozen raw chicken (during processing)	Nutrifacts Evaluation	Calculation, FDA
11. Meat products in hermetically sealed containers		

.06 Sugar and Sugar Products

1. Refined and raw sugars	Crude Protein	Kjeldahl Block Digestion Method (AOAC 991.20, 20th ed.)
2. Brown sugar	Crude Fat	Soxhlet Method using petroleum ether with acid hydrolysis (In-house Method)
	Total Fat	
3. Sugar solutions and syrups	Moisture	AOAC 925.45 (AOAC 20th ed.)
4. Other sugars and syrups (e.g. xylose, maple syrup, sugar toppings)	Ash	AOAC 900.02 (AOAC 20th ed.)
5. Honey	Carbohydrates and Energy	Calculation, AOAC 986.25E
6. Table-top sweeteners, including those containing high-intensity sweeteners	Nutrifacts Evaluation	Calculation, FDA

.07 Confectioneries

1. Cocoa powder	Crude Protein	Kjeldahl Block Digestion Method (AOAC 991.20, 20th ed.)
2. Chocolate products	Crude Fat Total Fat	Soxhlet Method using petroleum ether with acid hydrolysis (In-house Method)
3. Chocolate confectioneries (chocolate bars, blocks, bonbons)	Moisture	AOAC 925.45 (AOAC 20th ed.)
	Ash	AOAC 900.02 (AOAC 20th ed.)
4. Sugar confectioneries (hard and soft candies, toffees,	Carbohydrates and Energy	Calculation, AOAC 986.25E

caramel, fondants, creams, nougats and pastes)	Nutrifacts Evaluation	Calculation, FDA
VI. Water		
.01 Bottled water	Calcium	3000 Ca SMEWW 23rd Ed., 2017
	Chloride	4500 Cl SMEWW 23rd Ed., 2017
	pH	4500 H SMEWW 23rd Ed., 2017
	Total Dissolved Solids	2540 C SMEWW 23rd Ed., 2017
	Total Hardness	2340 C SMEWW 23rd Ed., 2017
	Conductivity	2510 SMEWW 23rd Ed., 2017
	Mg by calculation	SMEWW 23rd Ed., 2017

Microbiological Testing

Products	Specific Tests	Method/Reference
I. Foods		
1.0 Milk and Dairy Products		
01.1 Milk Powder	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count S. aureus (coagulase positive) Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN BAM/Direct Plate Count
01.2 Sweetened condensed milk		
01.3 Liquid milk (evaporated or ready to drink) and cream (UHT/sterilized)		
01.4 Pasteurized milk		
01.5 Pasteurized cream		
01.6 Yogurt and other fermented milk		
01.7 Cheese and cheese products; e.g., Cottage cheese, soft and semi-soft cheese (moisture > 39%, pH > 5)		
01.8 Processed cheese spread		

Food Category	Microbiological Parameters	Method
01.9 All raw milk cheese; raw milk unripened cheese with moisture > 50%, pH > 5.0		
02.0 Fats and oils, and fat emulsions		
02.1 Butter (whipped, pasteurized)	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count S. aureus (coagulase positive) Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN BAM/Direct Plate Count
02.2 Butter made from unpasteurized milk or milk products		
02.3 Margarine		
10.0 Meat and meat products		
10.1 Dried animal products	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count S. aureus (coagulase positive) Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN BAM/Direct Plate Count
10.2 Meat paste and pate (heat treated)		
10.3 Cold cuts, frozen and chilled hotdogs, corned beef, luncheon meat		
10.4 Packaged cooked cured/salted meat (ham, bacon)		
10.5 Fermented, comminuted meat, not cooked (dry and semi-dry fermented sausages)		
10.6 Cooked poultry meat, frozen to be re-heated before eating (e.g., prepared frozen meals)		
10.7 Cured/smoked poultry meat		
10.8 Dehydrated poultry products	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count S. aureus (coagulase positive) Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN BAM/Direct Plate Count
10.9 Fresh/frozen raw chicken (during processing)		
10.10 Meat products in hermetically sealed containers		
11.0 Fish and fish products		
11.1 Fresh frozen fish and cold-smoked	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN
11.2 Pre-cooked breaded and fish		

11.3 Frozen raw crustaceans	S. aureus (coagulase positive) Count	BAM/Direct Plate Count
11.4 Frozen cooked crustaceans		
11.5 Cooked, chilled and frozen crabmeat		
11.6 Fresh and frozen bivalve molluscs		
11.7 Fish and shellfish in hermetically sealed containers		
13.0 Beverages		
13.1 Non-alcoholic beverages (e.g., Ready to drink softdrinks, iced tea, energy drinks)	Aerobic Plate Count Yeast and Mold Count Coliform Count E. coli Count S. aureus (coagulase positive) Count	BAM/Pour Plate Method BAM/Pour Plate Method BAM/MPN BAM/MPN BAM/Direct Plate Count
13.2 Frozen juice concentrate		
13.3 Powdered beverages (e.g., iced tea, powdered juices/mixes)		
IV. Water		
1.0 Bottled water	Heterotrophic Plate Count	SMEWW 22nd ed./ Pour Plate Method
	Total Coliform Count	SMEWW 22nd ed./ MPN
	Fecal Coliform Count	SMEWW 22nd ed./ MPN
	E. coli Count	SMEWW 22nd ed./ MPN

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 ***********