8. Department of Science and Technology – IX
Regional Standards and Testing Laboratory

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Field of Testing	:	Chemical Testing and Microbiological Testing

Chemical Testing

Product	Specific Test	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 Ash Crude Fat	AOAC 930.15 AOAC 942.05 AOAC 948.16
.05 Fish and fish products, including molluscs, crustaceans, and echinoderms		
1. Fresh and frozen fish and cold-smoked 2. Pre-Cooked Breaded Fish 3. Frozen cooked crustaceans 4. Cooked, chilled & frozen crabmeat 5. Fish and shellfish products in hermitically sealed containers 6. Smoked, dried, fermented, and /or salted fish and fish products	Moisture Crude Protein Crude Fat Ash Carbohydrates Energy Salt as NaCl Sodium, Na Lead, Pb Cadmium	AOAC 930.15 AOAC 981.10 AOAC 948.16 AOAC 942.05 AOAC 986.25 E Atwater Factor (Philippine Food Composition Table, FNRI) AOAC 937.09 AOAC 985.35/ AOAC 999.10 AOAC 999.10 AOAC 999.10
.06 Sugar and sugar products		

1. Refined and raw sugars2. Brown sugar3. Sugar solutions and syrups4. Other sugars and syrups (e.g., xylose, maple syrup, sugar toppings)5. Honey6. Table-top sweeteners, including those containing high-intensity sweeteners	MoistureCrude ProteinTotal FatAshCarbohydratesEnergyTotal SugarsSodium, Na	AOAC 930.15AOAC 981.10AOAC 948.16AOAC 942.05AOAC 986.25 EAtwater Factor (Philippine Food Composition Table, FNRI)AOAC 968.28AOAC 985.35/ AOAC 999.10
.08 Fruits, jams and other fruit products		
1. Frozen fruits 2. Coconut (desiccated) 3. Sun dried fruit 4. Jams, jellies, marmalades 5. Fruit-based spreads 6. Candied fruit 7. Fruit preparations (pulp, purees, fruit toppings and coconut milk) 8. Fermented fruit products 9. Fruit fillings for pastries	Moisture Crude Protein Total Fat Ash Carbohydrates Energy Total Sugars Sodium, Na	AOAC 930.15 AOAC 981.10 AOAC 948.16 AOAC 942.05 AOAC 986.25 E Atwater Factor (Philippine Food Composition Table, FNRI) AOAC 968.28 AOAC 985.35/ AOAC 999.10
.12 Fruit juices, drinks and concentrates		
1. Fruit and vegetable juices 2. Fruit and vegetable nectars 3. Water-based flavoured drinks (Carbonated, Non-carbonated, Concentrates (liquid or solid)) 4. Coffee, coffee substitutes, tea, herbal infusions, and other hot cereal and grain beverages, excluding cocoa	Total Sugars	AOAC 968.28
.20 Other food products		
1. Tea Powder	Lead, Pb Cadmium, Cd	AOAC 999.10
2. Bread and Other bakery products	MoistureCrude ProteinTotal FatAshCarbohydratesEnergyTotal SugarsSodium, Na	AOAC 930.15AOAC 981.10AOAC 948.16AOAC 942.05AOAC 986.25 EAtwater Factor (Philippine Food Composition Table, FNRI)AOAC 968.28AOAC 985.35/ AOAC 999.10
.24 Sauce, spices and condiments		

1. Dry mixes for soup and sauces 2. Yeast 3. Spices and herbs 4. Salad dressing (e.g., Mayonaise, thousand island, Mustard) 5. Vinegars 6. Salt 7. Sauces and like products (e.g., fish sauce) 8. Soybean-based seasonings and condiments (e.g., soy sauce)	pH Salt as NaCl Nitrogen	AOAC 960.19 AOAC 941.18 AOAC 2001.11
IV. Water		
Bottled Water	pH	SMEWW 4500-H*
	Conductivity	SMEWW 2510-B.
	Total hardness	SMEWW 2340 C.
	Chlorides	SMEWW 4500-Cl^-
	Calcium hardness	SMEWW 3500 - Ca B.
	Magnesium hardness	SMEWW 3500 - Mg E.
	Calcium Magnesium Sodium Potassium Manganese Zinc Lead Cadmium Iron	SMEWW 3111B

Microbiological Testing

Product	Specific Test	Method / Reference
01 Milk and Dairy Products		
01.1 Milk Powders (e.g., whole nonfat or filled milk, buttermilk, whey & whey protein concentrate) (intended for children more than 36 months of age and adults)	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
01.2 Sweetened Condensed Milk	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Mold and Yeast Count	Dilution Plating Technique / BAM
01.3 Liquid Milk (evaporated or ready to drink) & Cream (UHT/sterilized)	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
01.4 Pasteurized Milk	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
01.5 Pasteurized Cream	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
01.6 Yogurt and other fermented milk	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
01.7 Cheese and cheese products e.g., cottage cheese; soft and semi-soft cheese (moisture > 39%, pH >5)	*S. aureus*	Direct Plating Technique / BAM
	Coliform Count *E.coli Count*	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
01.8 Processed Cheese Spread	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	S. aureus	Direct Plating Technique / BAM

01.9 All Raw Milk Cheese; Raw Milk Un-ripened cheese with moisture > 50%, pH >5.0	*Salmonella*	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
02 Fats, Oils, and Fat Emulsions		
02.1 Butter (whipped, pasteurized)	Mold and Yeast Count	Dilution Plating Technique / BAM
	S. aureus	Direct Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
02.2 Butter made from unpasterurized milk or milk products	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
02.3 Margarine	*S. aureus*	Direct Plating Technique / BAM
	Feacal Coliform	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Mold and Yeast Count	Dilution Plating Technique / BAM
03 Edible Ices including Sherbet and Sorbet		
03.1 Ice Cream & Sherbet (plain and flavored)	*Salmonella*	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	S. aureus	Direct Plating Technique / BAM
03.2 Ice cream with added ingredients (nuts, fruits, cocoa etc)	*Salmonella*	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	S. aureus	Direct Plating Technique / BAM
03.3 Flavored Ice (e.g., ice candy)	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)

	Coliform Count	Conventional MPN Method / BAM
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
04 Confectionaries		
04.1 Cocoa Powder	Mold Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
04.2 Chocolate Products	Mold Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
04.3 Chocolate Confectionaries (chocolate bars, blocks, bonbons)	Mold Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
04.4 Sugar Confectionaries (hard & soft candies, caramel, fondants, creams, nougats and pastes)	Mold Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
05 Fruits and Vegetables, Nuts and Seeds		
05.1 Frozen vegetables & Fruits	*E. coli* Count	Conventional MPN Method / BAM
05.2 Fermented Vegetables, ready to eat (e.g., Kimchi)	Mold and Yeast Count	Dilution Plating Technique / BAM
	Coliform Count	Conventional MPN Method / BAM

	E. coli Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
05.3 Fruits and Vegetable products in Hermetically Sealed containers	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
05.4 Dried vegetables	*E. coli* Count	Conventional MPN Method / BAM
05.5 Dessicated Coconut	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	E. coli Count	Conventional MPN Method / BAM
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
05.6 Peanut Butter & other Nut Butters	*Salmonella*	Reveal 2.0 for Salmonella
05.7 Sun Dried Fruits	Mold Count	Dilution Plating Technique / BAM
	E. coli Count	Conventional MPN Method / BAM
06 Egg and Egg Products		
06.1 Pasteurized Egg Products (Liquid, frozen or dried)	*Salmonella*	Reveal 2.0 for Salmonella
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
07 Cereals and Cereal Products		
07.1 Breakfast Cereals	Mold Count Yeast & Yeast-like fungi	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
07.2 Cereals/Cereal Grains	Mold and Yeast Count	Dilution Plating Technique / BAM

	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	E. coli Count	Conventional MPN Method / BAM
07.3 Cultured seeds and grains (e.g., bean sprouts, alfalfa etc.)	*E. coli* Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
07.4 Soya Flours Concentrates and Isolates	Mold Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
07.5 Flour, Corn meal, Corn grits, Semolina	Mold Count Yeast & Yeastlike fungi	Dilution Plating Technique / BAM
07.7 Soy Protein	*E. coli* Count	Conventional MPN Method / BAM
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
07.8 Tofu	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM
07.9 Pasta Products and Noodles Uncooked (wet & dry)	Mold and Yeast Count	Dilution Plating Technique / BAM
	S. aureus	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
7.10 Starch	Mold and Yeast Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
08 Bakery Products		

08.1 Frozen Bakery Products (ready eat) with low acid or high a_w fillings or toppings	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
08.2 Frozen Bakery Products (to be cooked) with low acid or high a_w fillings or toppings (e.g., meat pies, pizzas)	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
08.3 Frozen and Refrigerated Doughs (Chemically leavened)	Mold Count Yeast & Yeastlike fungi	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
	E. coli Count	Conventional MPN Method / BAM
08.4 Frozen and Refrigerated Doughs	Mold Count Yeast & Yeastlike fungi	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
08.5 Baked Goods (microbiologically sensitive types e.g., containing eggs & dairy products)	*S. aureus*	Direct Plating Technique / BAM
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
08.6 Coated and Filled, Dried Shelf-Stable Biscuits	Coliform Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
09 Ready to Eat Savouries		
09.1 Snack Foods	Mold Count Yeast & Yeastlike fungi	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
10.0 Meat and Meat Products		
10.1 Dried Animal Products	*S. aureus*	Direct Plating Technique / BAM

	Salmonella	Reveal 2.0 for Salmonella
10.2 Meat paste and Paté (heat treated)	*Salmonella*	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
10.3 Cold Cuts, Frozen & Chilled Hot Corn Beef, Lucheon Meat	*E. coli* Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
10.4 Packaged cooked cured/salted meat (ham, bacon)	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
10.5 Fermented, comminuted meat, not cooked (dry & semi-dry fermented sausages)	*E. coli* Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
	S. aureus	Direct Plating Technique / BAM
10.6 Cooked Poultry Meat, Frozen to be reheated before eating (e.g., prepared frozen meals)	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
10.7 Cured/Smoked Poultry Products	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
10.8 Dehydrated Poultry Products	*Salmonella*	Reveal 2.0 for Salmonella
10.9 Fresh/Frozen raw Chicken (during processing)	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
10.10 Meat products in hermetically sealed containers	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
11.0 Fish and Fish Products		
11.1 Fresh Forozen Fish and Cold-Smoked	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM

	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
11.2 Pre-Cooked Breaded Fish	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
11.3 Frozen Raw Crustaceans 11.4 Frozen Cooked Crustaceans	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
11.5 Cooked, Chilled & Frozen Crabmeat	*E. coli* Count	Conventional MPN Method / BAM
	S. aureus	Direct Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
11.6 Fresh and Frozen Bivalve Mollusks	*E. coli* Count	Conventional MPN Method / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
11.7 Fish and Shellfish products in hermetically sealed containers (thermally processed)	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
12.0 Spices, Soups, Sauces, Salad, and Protein Products		
12.1 Dry Mixes for Soup and Sauces	Mold and Yeast Count	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
12.2 Yeast	*Salmonella*	Reveal 2.0 for Salmonella

12.3 Spices	Molds Count	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
12.4 Spices (Ready to eat)	*S. aureus*	Direct Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
	Molds Count	Dilution Plating Technique / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
12.5 Salad Dressing, pH $\leq$ 4.6 (e.g., Mayonaise, Thousand Island, Ranch, French)	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Mold and Yeast Count	Dilution Plating Technique / BAM
	Salmonella	Reveal 2.0 for Salmonella
13.0 Beverages		
13.1 Non-Alcoholic Beverages (e.g., ready to drink, soft drinks, iced tea, energy drinks)	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Mold and Yeast Count	Dilution Plating Technique / BAM
13.2 Frozen Juice Concentrate	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Mold and Yeast Count	Dilution Plating Technique / BAM
13.3 Powdered beverages	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
14.0 Food for Infants and Young Children		
14.1 Powdered Infant Formula with or without added Lactic Acid producing cultures (intended for 0 to 6 month old)	*Salmonella*	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
	E. coli Count	Conventional MPN Method / BAM
14.2 Follow-up Formula/ Milk Supplement (intented for infants 6 months on and for	*Salmonella*	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM

young children 12-36 months age)	*E. coli* Count	Conventional MPN Method / BAM
14.3 Infant formula - liquid (UHT/sterilized)	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
14.4 Baby foods in hermetically sealed containers	Commercial Sterility	FDA BAM Online 2001 / Compendium of Methods for the Microbiological Examination of foods, 4th ed 2001
14.5 Dried and Instant Products requiring reconstitution	Coliform Count	Conventional MPN Method / BAM
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
14.5 Dried Products requiring reconstitution and boiling before consumption	*Salmonella*	Reveal 2.0 for Salmonella
	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
14.6 Cereal based foods for infants	Aerobic Plate Count	Conventional Plate Count Method/ BAM (Pour Plate)
	Salmonella	Reveal 2.0 for Salmonella
	Coliform Count	Conventional MPN Method / BAM
IV. Water		
Bottled water	Heterotrophic Bacteria	SMEWW 21st ed. 2005
	Total Coliform Count, Feacal Coliform	
	Enterococci / Fecal Streptococci	
	E. coli	Conventional MPN, FDA-BAM

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 **********