(Unofficial)

Announcement of the Food and Drug Administration
Re: Analysis of Foods

Due to the differences of test methods for technical analysis of foods and having an innovation of test methods as international trends, it is necessary to prescribe test methods for chemical, microbiological, physical, and bio-molecular analysis, the Food and Drug Administration issues announcements as follows:

Clause 1 Announcement of Thai Food and Drug Administration, Re: Analysis of Foods dated 18th October B.E. 2555 (2012) shall be repealed.

Clause 2 Chemical, microbiological, physical and bio-molecular analysis shall be followed as specified in an annex of this Announcement.

This is from now and onwards.

Announced on 10th October B.E. 2557 (2014)

(Signed) Boonchai Somboonsuk

(Mr. Boonchai Somboonsuk)
Secretary-General of Food and Drug Administration

Note: This English version of the notification is translated to meet the need of the non-Thai speaking people. In case of any discrepancy between the Thai original and the English translation, the former will take priority.

Annex

Announcement of the Food and Drug Administration Re: Analysis of Foods

1. Chemical food analysis

1.1 Cow's Milk

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Ready-to-consume milk (Raw milk has been pass through pasteurization or other processes)	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 99a1.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1211 / IDF 1: 2010 AOAC 989.05	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6731 / IDF 21:2010	Gravimetry, drying at 102°C	I
	Milk solid non fat	ISO 6731/IDF 21: 2010 and ISO 1211 / IDF 1:2010 AOAC 989.05	Calculation from total solids content and fat content	I
Milk powder	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1736 / IDF 9: 2008	Gravimetry (Roese-Gottlieb)	I
Unsweetened condensed milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1737 / IDF 13: 2008	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6731 / IDF 21:2010	Gravimetry, drying at 102°C	I
	Milk solid non fat	ISO 6731/IDF 21: 2010 and ISO 1737 / IDF 13:2008	Calculation from total solids content and fat content	I
Sweetened condensed milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Total solid	ISO 6734/ IDF 15:2010	Gravimetry, drying at 102°C	I
	Fat	ISO 1737 / IDF 13: 2008	Gravimetry (Roese-Gottlieb)	I
Filled milk powder	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1736 / IDF 9: 2008	Gravimetry (Roese-Gottlieb)	I
Filled milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1211 / IDF 1: 2010	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6731 / IDF 21:2010	Gravimetry, drying at 102°C	I

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
	Milk solid non fat	ISO 6731/IDF 21: 2010 and ISO 1211 / IDF 1:2010 AOAC 989.05	Calculation from total solids content and fat content	I
Unsweetened condensed filled milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	I
	Fat	ISO 1737 / IDF 13: 2008	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6731 / IDF 21:2010	Gravimetry, drying at 102°C	I
	Milk solid non fat	ISO 6731:1989 and ISO 1737 / IDF 13:2008	Calculation from total solids content and fat content	I
Sweetened condensed filled milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001 AOAC 991.20	Titrimetry (Kjeldahl)	IV
	Fat	ISO 1736 / IDF 9: 2008	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6734:2010 / IDF 15:2010	Gravimetry, drying at 102°C	I

1.2 Cheese

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Cheese	Fat	ISO 1735: 2004 / IDF 5: 2004	Gravimetry (Schmidt-Bondzynski-Ratzlaff)	I
	Total solid	ISO 5534: 2004 / IDF4: 2004	Gravimetry, drying at 102°C	I
	Fat (on dry basis)	ISO 1735: 2004 / IDF 5: 2004 ISO 5534: 2004 / IDF 4: 2004	Calculation from total solids content and fat content	I

1.3 Cream

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Cream	Fat	ISO 2450 / IDF 16: 2008	Gravimetry (Roese-Gottlieb)	I
	Total solid	ISO 6731 / IDF 21: 2010	Gravimetry, drying at 102°C	I

1.4 Fermented milk

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Fermented milk	Protein	ISO 8968-1/2 / IDF20-1/2:2001	Titrimetry (Kjeldahl)	I
	Fat	ISO 1211 / IDF 1: 2010 AOAC 989.05	Gravimetry (Roese-Gottlieb)	I

1.5 Tea

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Tea leaves	Moisture content	AOAC 925.19	Gravimetry	I
	Total ash	AOAC 920.100A	Gravimetry	I
	Water soluble ash	AOAC 920.100B	Gravimetry	I
	Hot water extract	AOAC 920.104	Gravimetry	I

1.6 Coffee

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Roasted coffee	Total ash	AOAC 920.93A	Gravimetry	I
	Water soluble ash	AOAC 920.93B	Gravimetry	I
Ground Roasted coffee and Instant coffee	Moisture content	AOAC 979.12	Gravimetry	I

1.7 Beverages in Sealed Container

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Cocoa powder	Moisture content	AOAC 931.04	Gravimetry	I
Ready-to-drink beverage made from vegetable and fruits	Ethanol	ISO 2448: 1998	Distillation and titration	II
Beverages in Sealed Container	Critic acid	AOAC 986.13	HPLC	II

1.8 Water

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Drinking water in sealed container, ice, natural mineral water, water used in food processing, and others	pH value	APHA 2012 (4500-H^+B)	Electrochemistry I	I
	Total solid	APHA 2012 (2540 B)	Gravimetry	I
	Total hardness	APHA 2012 (2340 C)	Titration	I
	Fluoride, Chloride, Nitrate, and Sulphate	APHA 2012 (4110 B)	Ion Chromatograph	II
	Lead	APHA 2012 (3113 B)	AAS (graphite)	II
	Iron, Cadmium, Chromium, Copper, Manganese, Zinc, Nickel, and Silver	APHA 2012 (3111 B)	AAS (flame)	II
	Arsenic	APHA 2012 (3114 C)	AAS (hydride)	II

1.9 Oil and Fat

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Edible oil and fat	Acid value	AOCS Cd 3d-63	Titration	I
Reused cooking oil	Polar compounds	AOCS Cd 20-91	Column chromatography	I

1.10 Meat and meat products

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Meat and meat products	Nitrates and/or Nitrites	EN 12014-4: 2005	HPLC	III

1.11 Ice-cream

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Ice-cream	Fat	AOAC 952.06	Gravimetry (Röese Gottlieb)	I
	Protein	AOAC 930.33	Kjeldahl method	I
	Total solid	AOAC 941.08	Gravimetry	I
	Moisture content			

1.12 Sweetener

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
All types of food	Acesulfame K Aspartame	EN 12856: 1999-04	HPLC	II
All types of food	Cyclamate	EN 12857: 1999-04	HPLC	II
All types of food	Saccharine	EN 12856: 1999-04	HPLC	III

1.13 Nutrients

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
All types of food	Total dietary fiber	AOAC 985.29	Enzymatic - Gravimetry	I

1.14 Prescribing standards of Contaminated Substances

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
All types of food	Lead, Cadmium, Copper, Zinc, and Iron	NMKL 139 (1991) AOAC 999.11	AAS after dry ashing	II
	Tin	AOAC 985.16 (Codex-Adopted-AOAC method)	Flame AAS	II
	Arsenic (calculated as total arsenic content)	AOAC 986.15 (Codex-Adopted-AOAC method)	AAS after generation of metal hydride	II
	Mercury	AOAC 977.15	AAS (cold vapor)	III
Maize, peanut	Aflatoxins (B_1, B_2, G_1, G_2)	AOAC 991.31	Immunoaffinity column (Aflatest)	II

Remark

* Type of method

(1) Type I (Defining methods) means a method which determines a value that can only be arrived at in terms of the method per se and serves by definition as the only method for establishing the accepted value of the item measured.

(2) Type II (Reference methods) means a method designated Reference Method where Type I methods do not apply. It should be selected from Type III methods (as defined below). It should be recommended for use in cases of dispute and for calibration purposes.

(3) Type III (Alternative methods) means a method which meets the criteria required by the Department of Medical Science, Ministry of Public Health

(4) Type IV (Tentative method) means a method which has been used traditionally or else has been recently introduced but for which the criteria required for have not yet been determined.

2. Microbiological food analysis

Type of food	Items of analysis	Method of analysis	Principle
All types of food	Total viable count	BAM 2001, chapter 3	Pour plate
	Coliform	BAM 2002, chapter 4	MPN
	Fecal coliform		Pour plate
	E.coli		Detection
	Vibrio parahaemolyticus	BAM 2004, chapter 9	MPN
	Vibrio parahaemolyticus	ISO/TS 21872-1: 2007	Detection
	Vibrio cholerae and *Vibrio parahaemolyticus*		
	Yeast and Mold	BAM 2001, chapter 18	Pour plate
		AOAC 2005: 997.02	Spread plate
			Petri film
	Clostridium botulinum	BAM 2001, chapter 17	Detection
	Shigella spp.	ISO 21567: 2004	Detection
		APHA (Water and waste water) 2005	
	Lactic acid bacteria	ISO 15214: 1998	Pour plate
	Water activity (Aw)	AOAC 2005: 978.18B (a)	Conductivity
		AOAC 2005: 978.18B (c)	Dew point
Beverages	Total viable count	BAM 2001, chapter 3	Pour plate
	Yeast and Mold	BAM 2001, chapter 18	Pour plate
Water and ice	Total viable count	APHA (Water and waste water) 2005	
	Coliform	APHA (Water and waste water) 2005	MPN
	E.coli		
	Vibrio cholerae	APHA (Water and waste water) 2005	Detection
	Shigella spp.	ISO 21567: 2004	Detection
		APHA (Water and waste water) 2005	
Law acid canned food	Microorganisms can grow at 35°C	BAM 2001, chapter 21A	Detection
	Microorganisms can grow at 55°C		

Type of food	Items of analysis	Method of analysis	Principle
Acid canned food	Acidophilic or acid-tolerant bacteria can grow at 30°C	BAM 2001, chapter 21A	Detection
	Acidophilic or acid-tolerant bacteria can grow at 55°C		

3. Physical food analysis

Type of food	Items of analysis	Method of analysis	Principle	Type of method*
Vegetable canned food	Net weight and drained weight	AOAC 968.30	Gravimetry	I

Remark

* Type of method

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(2) Type II (Reference methods) means a method designated Reference Method where Type I methods do not apply. It should be selected from Type III methods (as defined below). It should be recommended for use in cases of dispute and for calibration purposes.

(3) Type III (Alternative methods) means a method which meets the criteria required by the Department of Medical Science, Ministry of Public Health

(4) Type IV (Tentative method) means a method which has been used traditionally or else has been recently introduced but for which the criteria required for have not yet been determined.

4. Bimolecular food analysis

Type of food	Items of analysis	Method of analysis	Principle
All types of food consisting of GMO crops, except edible oil passed through any process and Food Seasonings derived from the Hydrolysis or Fermentation of Soy Bean Protein	Qualitative GMOs Screening test - CaMV35S promoter - NOS-terminator - ntp II - lectin - Chloroplast tRNA - Invertase - hmg	ISO 21569: 2005 and ISO 21571: 2005	PCR