

FTL e-NewsLetter

FOREIGN TESTING LABORATORIES

Ministry of Food and Drug Safety

Foreign Testing Laboratories e-NewsLetter 2016.10_Vol.6

Message from Director of Consumer Risk Prevention Bureau



Jangyul Robert Kim
Director General of Consumer Risk Prevention Bureau

I am Jangyul Robert Kim, and very pleased to introduce myself as the new Director of Consumer Risk Prevention Bureau. I have spent most of my career in communication before taking this position which, I believe, allows me to bring years of experience and expertise to help facilitate communication between MFDS and the public. Better communication and public engagement would lead to greater understanding of policy decision-making, thus build public trust and confidence in MFDS.

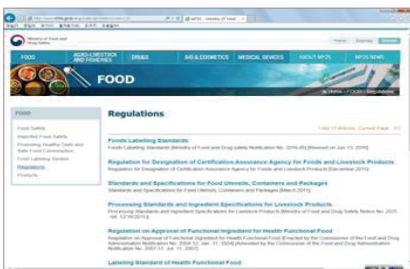
For food and drug safety, international cooperation is of great importance as well. As the new Director, I will strive to reinforce mutual communication and coordination between MFDS and MFDS-designated Foreign Testing Laboratories (FTLs) by taking various measures. The FTL e-Newsletter is one of the efforts made by Laboratory Audit and Policy Division of MFDS to establish better relationship with FTLs.

After several months of unprecedented hot weather, fall is officially in the air in Korea as trees sway in crisp and chill breeze with leaves starting to change their colors. I wish you beautiful weather and good luck.

Website Renewal



MFDS Website has been renewed.



www.mfds.go.kr/eng/index

Search

- Information on testing and inspection laboratories is available on the website at "MFDS NEWS" > "Management of Testing and Inspection Agencies". The content includes 1) Inspection procedures of testing and inspection agencies, 2) Foreign testing laboratories, and 3) Evaluation of testing competency.
- Information on food regulations, including 「Special Act on Imported Food Safety Control」 can be found at "FOOD" > "Regulations"

The Inspection Procedure on Imported food products, etc.

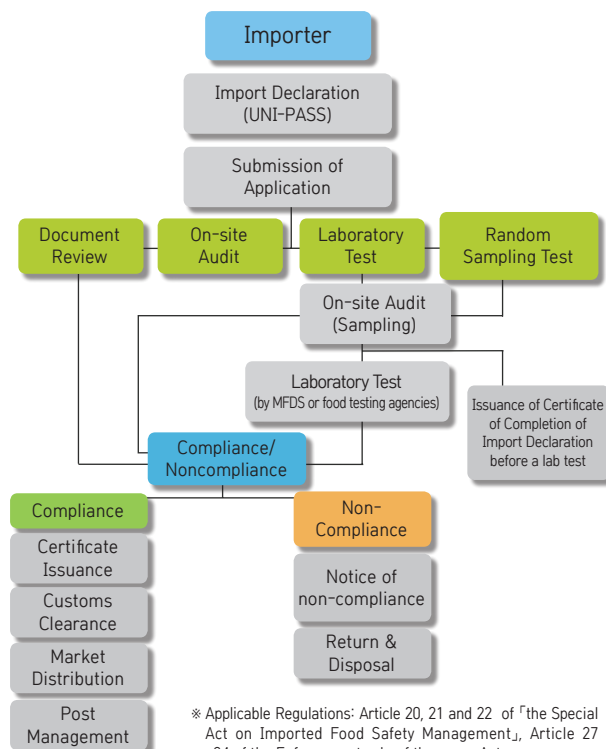


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Development of Integrated Standards & Specifications for Foods and Livestock Products

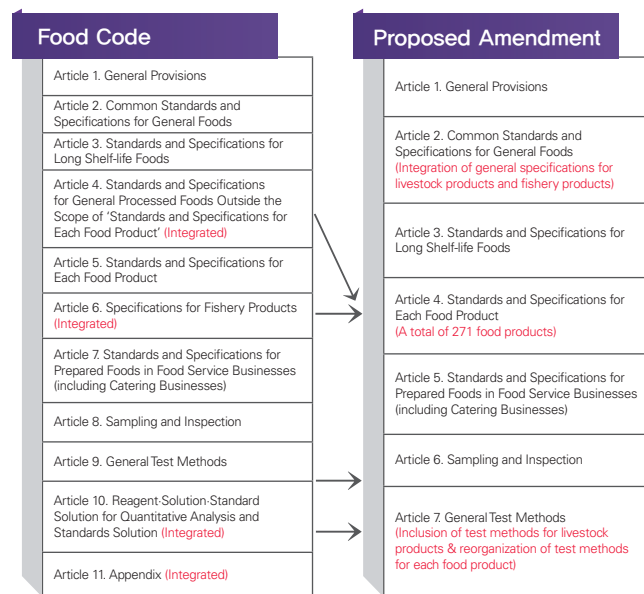
► Announcement of Partial Amendments to 「the Livestock Products Sanitary Control Act」 and 「the Food Sanitation Act」 (April 21, 2016)

- Integration of general standards & specifications for processed livestock products into 「the Food Sanitation Act」
- * Processed livestock products include dairy products, processed meat products and processed egg products.
- Application of the same monitoring standards both to processed foods & processed livestock products.



► Consolidation and Reorganization of Standards & Specifications for Foods and Livestock products

- Rearrangement of food types based on ingredient content
- Improvement of standards and specifications for food products that have attracted high levels of consumer complaints



► Revision of Food Type Classification

Before Amendment			After Amendment		
Food Group	Food Species	Food Type	Food Group	Food Species	Food Type
Foods for Special Dietary Use	Formulated foods for infants	Formulated foods for infants	Foods for Special Dietary Use	Formulated foods for infants	Formulated foods for infants
	Follow-up formulae	Follow-up formulae		Follow-up formulae	Follow-up formulae
	Cereal based foods for infants and young children	Cereal based foods for infants and young children		Cereal based foods for infants and young children	Cereal based foods for infants and young children
	Other foods for infants and young children	Other foods for infants and young children		Other foods for infants and young children	Other foods for infants and young children
Foods for special medical purposes		Balanced nutritious foods for patients	Foods for special medical purposes		Medical foods
		Foods for patients with diabetes			
		Foods for patients with renal disorders			
		Hydrolyzed foods for patients with bowel disease			
		Thickeners for patients with dysphagia			
		Medical foods for providing calories and nutrients			Medical foods for providing calories and nutrients
		Foods for patients with inborn error of metabolism			Foods for patients with inborn error of metabolism
		Specially formulated foods for infants and young children with milk allergy			Specially formulated foods for infants and young children with milk allergy
		Specially formulated foods for infants and young children			Specially formulated foods for infants and young children
		Dietary formulae for weight control			Dietary formulae for weight control
Processed Milk Products	Milk formulas	Foods for pregnant/lactating women	Milk formulas	Foods for pregnant/lactating women	Foods for pregnant/lactating women
		Fortified milk powders		Formula milk for infants and young children	
		Infant formula milk		Follow-up formula milk	
		Follow-up milk powders		Other milk powders	
		Other formula milk		Other formula milk	
Ice cream	Ice cream	Ice cream	Frozen desserts	Ice cream	Ice cream
		Ice milk			Ice milk
		Sherbet			Sherbet
		Low-fat ice cream			Low-fat ice cream
		Non-fat ice cream			Non-fat ice cream
					Frozen desserts
					Ice cream mix
Ice cream powders	Ice cream powders	Ice cream powders	Ice cream mix	Ice cream mix	Ice cream mix
		Ice milk powders			Sherbet mix
		Non-fat ice cream powders			Low-fat ice cream mix
Ice cream mix	Ice cream mix	Ice cream mix	Edible ice	Edible ice	Non-fat ice cream mix
		Ice milk mix			
		Sherbet mix			
		Low-fat ice cream mix			
Confectionary	Frozen desserts	Frozen desserts			
Other Foods	Ice	Edible ice			

Proposed Revision of Standards & Specifications for Food additives



1. The standard of "Cross-linked Sodium Carboxymethyl Cellulose" will be established as a coating agent.
2. Test methods of a total of 17 items (Silicon resin, L-Monosodium Glutamate, Dammar Gum, Calcium oxide, Steviol glycosides, Rice bran wax, Oxystearin, Quilliaia extract, Magnesium carbonate, Calcium carbonate, Tert-Butylhydroquinone, Polysorbate 80, Polyisobutylene, Aluminium Potassium Sulfate, Enzymatically Modified Stevia Glucosyl Stevia, Alkali agents for noodles, Sodium saccharin formulation) will be revised.
3. Maximum Residue Limits (MRLs) for Sodium saccharin will be expanded. (Fruit wine: not more than 0.08g/kg, Dried seasoned fish: not more than 0.1g/kg)
4. The scope of usage for Calcium Stearyl Lactylate will be expanded to starch-processed foods.
5. Talaromyces emersonii will be added to a list of microorganisms that produce B-Glucanase.

Multi Class Pesticide Multi-Residue Methods

The method is applied to cereals, roots and tuber crops, pulses, nuts and seeds, fruits, vegetables and mushrooms.

1. Preparation of test solution

A. Extraction

(1) Method of acetonitrile extraction

- Prepare a test sample, accurately weighed, (For cereals and pulses, mix about 1kg of the sample and take 50g by grinding it to fine powder and passing it through the 420µm standard sieve. As for vegetables, fruits, roots and tuber crops, and nuts and seeds, grind about 1kg of the sample in a cutter mixer and take 50g of it. As for tea, take 10g.) and place it into an Omni mixer homogenizer (For cereals and pulses, mix the sample with 30mL of water and let it stand for 2 hours. As for tea, mix the sample with 40mL of water and let it stand for 2 hours).
- Add 100mL of acetonitrile and homogenize for 2 to 3 minutes. Filter the solution under vacuum using a Buchner funnel. Transfer it into a 500mL separating funnel containing 10-15g of sodium chloride, shake it vigorously, and allow it to separate.
- Remove water by passing anhydrous sodium sulphate through the acetonitrile layer and add additional acetonitrile to make 100mL. Take 20mL of the acetonitrile layer and evaporate it in a water-bath at below 40°C.
- In case of pesticide analysis by gas chromatography (GC), dissolve the residues in 4mL of hexane containing 20% acetone. As for pesticide analysis by liquid chromatography (LC), dissolve the residues in 4mL of dichloromethane containing 1% methanol.

(2) Method of acetone extraction

- Same as the above i) of "Method of acetonitrile extraction"
- Add 100mL of acetone and homogenize for 2 to 3 minutes. Filter the solution under vacuum using a Buchner funnel. Transfer the filtered solution into a 1L separating funnel and add 50mL of a saturated solution of sodium chloride and 100mL of water. Add 50mL of dichloromethane to the mixtures, shake it vigorously, and allow for separation. After transferring the dichloromethane layer to another separating funnel, add 50mL of dichloromethane to the aqueous layer again. Shake it vigorously before allowing it to separate and collect the bottom layer.
- Remove water by passing anhydrous sodium sulphate through the dichloromethane layer and add additional dichloromethane to make 100mL. Take 20mL of the dichloromethane layer and evaporate it in a water-bath at below 40°C.
- In case of pesticide analysis by gas chromatography (GC), dissolve the residues in 4mL of hexane containing 20% acetone. As for pesticide analysis by liquid chromatography (LC), dissolve the residues in 4mL of dichloromethane containing 1% methanol.

※ For extraction, either (1) or (2) can be used.

Note 1) Separation can be completed faster at a low temperature.

Note 2) As for fat-based test samples such as cereals, pulses, and nuts and seeds, After running a test i), ii) and iii) of (2), add 30 mL of hexane saturated with acetonitrile (or methanol) to the dried extract to be dissolved. Transfer it to a 250 mL separating funnel before extracting twice using 30 mL of acetonitrile (or methanol) saturated with hexane each time to remove fat. Collect the extracted acetonitrile (or methanol) layer and evaporate it at 40°C. For pesticides analyzed by GC, dissolve the residues completely in 4 mL of hexane containing 20% acetone. For pesticides analyzed by LC, dissolve it in 4 mL of dichloromethane containing 1% methanol.

B. Purification

(1) Pesticides analyzed by GC

Elute 5mL of hexane into a cartridge filled with florisil(1g), carbon(500mg) and aminopropyl(1g) at a flow rate of 2-3 drops per second. Pour 5mL of hexane containing 20% acetone into the cartridge and re-elute. Then pour 4mL of hexane containing 20% acetone into the top of the cartridge and elute at a speed of 1-2 drops per second. While the cartridge is still wet with the solvent, pour 5mL of hexane containing 20% acetone and collect the eluate. Pass it through a carbon cartridge activated with 5mL of hexane and 5mL of hexane containing 20% acetone, and elute at a rate of 1-2 drops per second. Pour 15mL of hexane containing 20% acetone into the carbon cartridge and collect the eluate. After evaporating the eluate under a gentle stream of nitrogen or air in a water bath at below 40°C, make a test solution by dissolving it in hexane containing 20% acetone and passing it through a membrane filter (PTFE 0.45µm). (A carbon cartridge is used only for removing impurities such as pigments)

Note 3) Make sure that all cartridges should not be dried during the purification.

Note 4) When carrying out pretreatment, add 2% diethylene glycol containing 0.2mL of acetone before vacuum concentration.

(2) Pesticides analyzed by LC

Elute 5mL dichloromethane into an aminopropyl-charged cartridge at a speed of 2-3 drops per second. Then pour 4mL of dichloromethane containing 1% methanol into the top of the cartridge and re-elute at a flow rate of 1-2 drops per second. While the cartridge is still wet with the solvent, elute with 7mL of dichloromethane containing 1% methanol and collect the eluate. After evaporating the eluate under a gentle stream of nitrogen or air in a water bath at below 40°C, make a test solution by dissolving it in acetonitrile and passing it through a membrane filter (PTFE 0.45µm). (A carbon cartridge is used only for removing impurities such as pigments.)

2. Control of test conduct

A. Measurement conditions for GC

(1) GC-ECD, GC-NPD

- Column: DB-5(30m × 0.25mm, 0.25µm), DB-17(30m × 0.25mm, 0.25µm) or its equivalent
- Carrier gas and flow rate: N₂, 1.0mL/min
- Oven temperature: Inject the test solution into the column at 80°C and leave it for 2 minutes. Raise the temperature by 7°C per minute until it reaches 250°C. Increase the temperature by 5°C each minute until it reaches 280°C and let it stand for more than 20 minutes.
- Injection mode: split mode (20:1)
- Detector temperature: 280°C

(2) GC-FPD

- Column: DB-5(30m × 0.25mm, 0.25µm), DB-17(30m × 0.25mm, 0.25µm) or its equivalent
- Carrier gas and flow rate: N₂, 1.0 mL/min
- Oven temperature: Inject the test solution into the column at 80°C and leave it for 2 minutes. Raise the temperature by 7°C per minute until it reaches 250°C. Increase the temperature by 5°C each minute until it reaches 280°C and let it stand for more than 20 minutes.
- Injection mode: splitless mode
- Detector temperature: 280°C

(3) GC-MS/MS(including GC-MS)

- Column: DB-5ms(30m × 0.25mm, 0.25µm) or its equivalent
- Carrier gas and flow rate: He, 0.8mL/min
- Oven temperature: Inject the test solution into the column at 70°C and leave it for 3 minutes. Raise the temperature by 20°C per minute until it reaches 180°C. Increase the temperature by 5°C each minute until it reaches 300°C and let it stand for more than 7 minutes.
- Injection mode: splitless mode
- Interface temperature: 300°C
- Solvent delay time: 4 min
- Collision gas: Ar

B. Measurement conditions for LC

(1) HPLC-FLD (including Post-derivatization)

- Column: C18 (3.9mm × 150mm, 5µm) or its equivalent
- Detector: Excitation 340nm, Emission 455nm
- Mobile phase: water/ methanol - After changing the concentration ratio from methanol : water (3 : 7) to methanol : water (7 : 3) for 23minutes, let it flow for more than 5minutes.
- Flow rate: 0.8 mL/min
- Post reaction pump flow rate: 0.5mL/min (NaOH 0.25mL/min, OPA 0.25mL/min) or other optimum conditions

(2) HPLC-UV

- Column: C18(4.6mm × 250mm, 5µm) or its equivalent
- Detector: UV photometric detector (254nm)
- Mobile phase: water/ acetonitrile
- acetonitrile/water (20/80, v/v, 0min) to (80/20, v/v, 40-50min)
- methanol/water (35/65, v/v, 0min) to (90/10, v/v, 40-50min)
※ For the mobile phase condition, either can be used.
- Mobile phase flow rate: 1.0 mL/min

(3) LC-MS/MS (including LC-MS)

- Column: C18 (2.0mm × 100mm, 3µm) or its equivalent
- Mobile phase: A(Water containing 0.1% formic acid + 10mM ammonium acetate), B(Acetonitrile containing 0.1% formic acid + 2mM ammonium acetate) or its equivalent
- A/B(95/5, v/v, 0 min) to (5/95, v/v, 20-30min)
- Flow rate: 0.2mL/min
- Column temperature: 40°C
- Injection volume: 2µL
- Ionization: ESI positive-ion or negative-ion mode

3. Qualitative test

The test results under the above condition shall be identical to the results obtained in a standard solution, regardless of measurement conditions.

Note 5) Using a GC-MS (including MS/MS) and/or LC-MS (including MS/MS) detector, components of each pesticide can be identified by retention time and mass spectrum.

4. Quantitative test

Evaluations are made based on the peak heights and peak areas obtained under the same conditions as in the qualitative test.



The 3rd International Symposium on Food and Drug Safety Emergency Response

Theme : Responses to food and drug safety incidents, and future response strategies

Date : 09:30~17:10, September 1, 2016

Location : Emerald Hall (3F), Convention Center, Grand Hilton Seoul

Host : The Ministry of Food and Drug Safety

Official Language: Korean - English (Simultaneous Interpretation)

Attendees : domestic and foreign government agencies, industries, academia

Time	Program	Speakers
9:30-10:00	30' · Registration	MC
10:00-10:10	10' · Opening Ceremony	Minister of Ministry of Food and Drug Safety
10:10-11:00	40' · Keynote Lecture I Trend of policy about risk management : Field of Food and Drug	Dohyeong Kim (Professor, The University of Texas at Dallas)
10:50-11:30	40' · Keynote Lecture II Change of National Emergency Management System	Jaeun Lee (Professor, Chungbuk national University)
11:30-13:00	90' Lunch	
Session I Accident Incident and Lesson from Response Case: Field of Food and Drug (Moderator: Jibeom Jung)		
13:00-13:40	40' · Lesson and implication of Food safety management crisis response in Japan	Keiko Kitagawa (Professor, Seitoku University)
13:40-14:20	40' · Case and implication of food and drug safety crisis response	Sunggho Kim (Director, Ministry of Food and Drug Safety)
14:20-15:00	40' · Crisis response case and crisis response plan in corporation of domestic and foreign	Bohyeong Lee (CEO, Macoll in Korean branch)
15:00-15:30	30' Coffee Break	
Session II Crisis management strengthening and future response for preparing new crisis type: Field of Food and Drug (Moderator: Sangdo Ha)		
15:30-16:10	40' · Implication and response activities of food terror in US	Jennifer van de Ligt (Associate Director, Food Protection and Defense Institute)
16:10-16:50	40' · Risk communication strategy of government and corporation	Cha Huiwon (Professor, Ewha Womans University)



Notice

» Please submit the following documents to MFDS by email.

- A list of test reports issued in the year of 2015
- Copies of performance evaluation documents issued by the pertinent government in 2015 or obtained through participation in international proficiency testing programs in 2015

» Contact

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mfdsalabaudit.blogspot.com

