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Voluntary - Public

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## Thailand

**Post:** Bangkok

### Thai FDA Revising Pesticide MRLs in Foods

**Report Categories:**

Sanitary/Phytosanitary/Food Safety

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**Report Highlights:**

TH9141: The Thai Food and Drug Administration notified WTO (G/SPS/N/THA/183), Ministry of Public Health (MOPH) Notification Regarding Food with Pesticide Residues. The notification establishes limits for in food.

## **Thai FDA Revising Pesticide MRLs in Foods**

On September 3, the Thai Food and Drug Administration notified WTO (G/SPS/N/THA/183), Ministry of Public Health (MOPH) Notification Regarding Food with Pesticide Residues. The notification establishes limits for in foods as follows:

1. The Ministry of Public Health Notification No. 288, B.E. 2548 (2005) Re: Food with Pesticide Residues is repealed and replaced by the draft MOPH notification below.
2. The pesticide residues in food must comply with MRLs and EMRLs set forth as per No. 4 (1), (2), and (3) of the draft MOPH notification as below.

(1) The pesticide residues, which MRLs are applied must be of those officially registered with the Ministry of Agriculture and Cooperatives and the established Maximum Residue Limit: MRLs are provided in the Annex 1 of the MOPH notification

(2) The pesticide residues, which are categorized under hazardous substance Type 4 of the Hazardous Substance Act B.E. 2535 (1992) and additional versions. The maximum residue limit shall not exceed the established Extraneous Maximum Residue Limit: EMRL as provided in the Annex 2 of this MOPH notification. As per the Hazardous Substance Act, B.E. 2535 (1992), the type 4 hazardous substance is the substance, which is prohibited for production, import, export, or having in possession. The Department of Agriculture has listed 96 agricultural substances to be hazardous substance Type 4 and the list is available in the appendix of this report.

(3) In cases other than (1) and (2), the pesticide residues shall be complied with the established MRLs set forth by Codex Alimentarius Commission, Joint FAO/WHO Food Standard Programme. However, the Maximum Residue Limit; MRL is not for the pesticide residues categorized as hazardous substance Type 4.

This notification will come into force on the day following date of its publication in the Royal Gazette and the final date for comments is November 2, 2009.

**(Draft)**

### **Notification of Ministry of Public Health RE: Food with Pesticide Residues**

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It deems appropriate to amend the Notification of Ministry of Public Health Re: Food with Pesticide Residues.

By the virtue of the provisions of Sections 5, 6(2), 6(3), and 6(9) of the Food Act B.E. 2522 (1979), in which contain provisions in relation to the restriction of Rights and Liberties of the Persons, in respect of which Section 29 and in conjunction with Section 33, 41, 43 and 45 of the Constitution of the Kingdom of Thailand so permit by virtue of provision of law; the Minister of Public Health hereby issues the notification as follows:

No. 1 The Notification of Ministry of Public Health No. 288 B.E. 2548 (2005) Re: Food with Pesticide Residues, dated January 17, 2005 shall be repealed.

No. 2 Food with pesticide residues is prescribed food to have standards.

No. 3 In this notification:

Pesticide residue means pesticides and their derivatives including conversion products, metabolites, reaction products or foreign matters in pesticides considered to be of toxicological significance, which contaminate or remain in food.

Pesticides means chemical substances aimed to be used to prevent, destroy, attract, repel or control vermins and pests or undesired plants and pests, whether they are used during cultivation, storage, transportation, distribution, or used during the process of the production of food, agricultural commodities, or animal feeds, or chemical substances that may be used with pests so as to control ectoparasites, and it shall mean to include substances used as a plant growth regulator, defoliation, desiccant, fruit thinning agent, or sprouting inhibitor, or substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transportation; but not including those substances applied as fertilizers, nutritious substance for plants and animals, food additives, feed additives, and veterinary drugs.

Maximum Residue Limit; MRL means the maximum level of pesticide residues that can be found in foods resulting from the use of pesticides. The concentration is expressed in milligram of pesticide residue per kilogram of food.

Extraneous Maximum Residue Limit; EMRL means the maximum level of pesticide residue that can be found in foods arising from environmental sources (including the pesticides that has been used in the past and their uses have been nationally banned).

No.4 Food with pesticide residues shall have the standard of free of pesticide residues except the following:

- The pesticide residues, which MRLs are applied must be of those officially registered with the Ministry of Agriculture and Cooperatives and the established Maximum Residue Limit: MRLs are provided in the Annex 1 of this MOPH notification
- The pesticide residues, which are categorized under hazardous substance Type 4 of the Hazardous Substance Act B.E. 2535 (1992) and additional versions. The maximum residue limit shall not exceed the established Extraneous Maximum Residue Limit: EMRL as provided in the Annex 2 of this MOPH notification;
- In cases other than (1) and (2), the pesticide residues shall be complied with the established MRLs set forth by Codex Alimentarius Commission, Joint FAO/WHO Food Standard Programme. However, the Maximum Residue Limit; MRL is not for the pesticide residues categorized as hazardous substance Type 4.

No. 5 The method of analysis shall be prescribed by the Food and Drug Administration

No. 6 This notification shall come into force on the day following date of its publication in the Royal Gazette.

Notified on .....

### **Annex 1**

#### **List attached to Notification of Public Health Ministry Re: Food with Pesticide Residues Maximum Residue Level, MRL**

**1. Pesticide: Chlorpyrifos**

Type of Toxic Residue: Chlorpyrifos

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra 0.5

Banana 2

Rice 0.1

Spices, seeds 5

Spices, fruits or berries 1

Spices, roots or rhizome 1

Rambutan 0.5

Peanut 0.05

Soybean (dry) 0.05

Soybean (immature seeds) 0.1

Oil palm 0.05

Peppers, Chili 0.5

Peppers, Chili (dried) 5

Coconut 0.05

Sweet potato 0.05

Longan 1

Litchi 2

Shallot 0.2

Onion, Bulb 0.2

Cattle meat 1 (fat)

Meat of goats and sheep 1 (fat)

Edible offal of cattle 0.01

Edible offal of goat and sheep 0.01

Pork meat 0.02 (fat)

Pig, Edible offal of 0.01

Poultry meat 0.01 (fat)

Poultry, Edible offal of 0.01

Egg 0.01

Milk 0.02

**2. Pesticide: Chlorothalonil**

Type of Toxic Residue: Chlorothalonil

Type of food and Maximum Residue Limit; MRL (mg/kg)

Peanut 0.05

Soybean (dry) 0.2

Soybean (immature seeds) 2

Chinese cabbage 1  
Kale 1  
Cabbages 4  
Tomato 5  
Potato 0.2

### 3. Pesticide: Carbaryl

Type of Toxic Residue: Carbaryl

Type of food and Maximum Residue Limit; MRL (mg/kg)

Lead tree leaves 0.02

Sweet corn (corn-on-the-cob) 0.1

Baby corn 0.1

Maize 0.02

Sorghum 0.5

Rice 1

Rambutan 1

Cucumber and other Cucurbits except Watermelon 3

Watermelon 1

Peanut 2

Durian 1

Oil Palm 0.02

Brassica Vegetables 5

Peppers, Chili 0.5

Peppers, Chili (dried) 2

Peppers, Sweet 5

Coconut 0.02

Mango 1

Mangosteen 1

Potato 0.2

Cacao beans 0.02

Cashew nut 1

Longan 1

Litchi 1

Citrus fruits 15

Grape 5

Sugar cane 0.02

Meat (from mammals other than marine mammals) 0.05

Edible offal (Mammalian) 1

Poultry meat 0.05

Eggs 0.5

Milks 0.05

### 4. Pesticide: Carbendazim/Benomyl

Type of Toxic Residue: Sum of carbendazim, benomyl and thiophanate-methyl, expressed as carbendazim

Type of food and Maximum Residue Limit; MRL (mg/kg)

Chives	3
Rice	2
Rambutan	3
Spring onion	3
Mung bean (dry)	0.5
Peanut	0.1
Soybean (dry)	0.5
Soybean (immature seeds)	3
Mulberry leaves	0.1
Peppers, Chili	2
Peppers, Chili (dried)	15
Tomato	0.5
Mango	5
Cotton seed	0.1
Asparagus	0.2
Shallot	3
Onion, Bulb	3
Grapes	3
Sugar cane	0.1
Cattle meat	0.05
Edible offal (Mammalian)	0.05
Poultry meat	0.05
Poultry fats	0.05
Poultry, Edible offal of	0.1
Eggs	0.05
Milks	0.05

##### 5. Pesticide: Carbosulfan

Type of Toxic Residue: Carbosulfan:

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra	0.5
Lead tree leaves	0.2
Sweet corn (corn-on-the-cob)	0.05
Baby corn	0.05
Maize	0.05
Sorghum	0.05
Rice	0.2
Rambutan	0.2
Cucumber and other Cucurbits except Watermelon	0.5
Watermelon	0.2
Mung bean (dry)	0.05
Yard-long bean (pods)	0.1
Garden pea (young pods)	0.1
Peanut	0.05
Soybean (dry)	0.05
Soybean (immature seeds)	0.5

Durian	0.2	
Oil Palm	0.05	
Brassica Vegetables	0.5	
Peppers, Chili	0.5	
Peppers, Chili (dried)	5	
Tomato	0.5	
Thai egg plant	0.5	
Egg plant	0.5	
Coconut	0.2	
Sweet potato	0.05	
Potato	0.05	
Coffee beans	0.05	
Cacao beans	0.05	
Sesame seed	0.2	
Sunflower seed	0.05	
Cotton seed	0.05	
Linseed	0.05	
Citrus fruits	0.1	
Asparagus	0.5	
Grapes	0.1	
Meat (from mammals other than marine mammals)	0.05	
Edible offal (Mammalian)	0.05	
Poultry meat	0.05	
Poultry, Edible offal of	0.05	
Eggs	0.05	
Milks	0.03	

#### 6. Pesticide: Carbosulfan

Type of Toxicological Residue: Sum of carbofuran, 3-hydroxy carbofuran and (conjugated 3-Hydroxycarbofuran), expressed as carbofuran

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra	0.5	
Lead tree leaves	0.2	
Rambutan	0.1	
Garden pea (young pods)	0.2	
Durian	0.1	
Oil Palm	0.1	
Brassica Vegetables	0.2	
Peppers, Chili	0.5	
Peppers, Chili (dried)	5	
Thai egg plant	0.5	
Egg plant	0.5	
Coconut	0.1	
Sweet potato	0.2	
Potato	0.1	
Cacao beans	0.05	

Sesame seed	0.1	
Sunflower seed		0.05
Linseed	0.1	
Citrus fruits	0.1	
Asparagus	0.5	
Grapes	0.1	

#### 7. Pesticide: Carbofuran

Type of Toxic Residue: Sum of carbofuran, 3-hydroxy carbofuran and conjugated 3-Hydroxycarbofuran expressed as carbofuran

Type of food and Maximum Residue Limit; MRL (mg/kg)

Banana	0.1	
Sweet corn (corn-on-the-cob)	0.1	
Baby corn	0.1	
Maize	0.05	
Sorghum	0.1	
Rice	0.1	
Cucumber and other Cucurbits except Watermelon		0.3
Watermelon	0.1	
Mung bean (dry)	0.2	
Yard-long bean (pods)	0.1	
Peanut	0.1	
Soybean (dry)	0.2	
Soybean (immature seeds)	0.5	
Pepper, Black and White	1	
Tomato	0.1	
Cassava	0.2	
Coffee beans	1	
Cotton seed	0.1	
Sugar cane	0.1	
Meat (from mammals other than marine mammals)		0.05
Edible offal (Mammalian)	0.05	
Poultry meat	0.08	
Poultry, Edible offal of	0.08	
Eggs	0.1	
Milks	0.05	

#### 8. Pesticide: Captan

Type of Toxic Residue: Captan

Type of food and Maximum Residue Limit; MRL (mg/kg)

Barley	0.1	
Peanut	5	
Soybean (dry)	5	
Soybean (immature seeds)		5
Oil Palm	5	
Mango	5	



Cotton seed	5
Grapes	10

#### 9. Pesticide: Quintozene

Type of Toxic Residue: Quintozene

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seeds	0.1
Spices, fruits or berries	0.02
Spices, roots or rhizomes	2

#### 10. Pesticide: Cypermethrin

Type of Toxic Residue: Cypermethrin

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra	0.5
Sweet corn (corn-on-the-cob)	0.05
Baby corn	0.05
Maize	0.05
Spices, fruits or berries	0.1
Spices, roots or rhizomes	0.2
Yard-long bean (pods)	0.05
Garden pea (young pods)	0.05
Soybean (dry)	0.05
Soybean (immature seeds)	5
Durian	1
Brassica Vegetables	1
Peppers, Chili	1
Peppers, Chili (dried)	5
Tomato	0.5
Eggplant, Thai eggplant and other eggplant-type commodities, except Tomato	0.2
Mango	0.5
Cotton seed	0.2
Longan	1
Litchi	0.5
Citrus fruits	2
Asparagus	0.5
Shallot	0.1
Onion, Bulb	0.1
Sugar cane	0.05
Meat (from mammals other than marine mammals)	0.2 (fat)
Edible offal (Mammalian)	0.05
Poultry meat	0.05
Poultry, Edible offal of	0.05
Eggs	0.05
Milks	0.05 F

#### 11. Pesticide: 2, 4-D

Type of Toxic Residue: Sum of 2,4-D and its salts and esters, expressed as 2,4-D

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob)	0.05
Baby corn	0.05
Maize	0.05
Sorghum	0.01
Rice	0.1
Spring onion	0.05
Pineapple	0.05
Meat (from mammals other than marine mammals)	0.2
Edible offal (Mammalian)	1
Poultry meat	0.05
Poultry, Edible offal of	0.05
Eggs	0.01
Milks	0.01

## 12. Pesticide: Deltamethrin

Type of Toxic Residue: Sum of deltamethrin alpha-R and trans- deltamethrin (fat soluble)

Type of food and Maximum Residue Limit; MRL (mg/kg)

Garlic	0.1
Sweet corn (corn-on-the-cob)	0.05
Maize	1
Baby corn	0.05
Spring onion	0.5
Yard-long bean (pods)	0.2
Oil Palm	0.05
Pak-choi	0.5
Chinese cabbage	0.5
Kale	0.5
Brassica Vegetables except Chinese Cabbages, Pak-choi and Kale	0.1
Peppers, Chili	0.5
Peppers, Chili (dried)	5
Tomato	0.3
Mango	0.5
Cotton seed	0.05
Cashew nut	0.02
Asparagus	0.5
Shallot	0.1
Onion, Bulb	0.05
Sugar cane	0.05
Cattle meat	0.5 (fat)
Meat of Goats and Sheep	0.5 (fat)
Cattle, Edible offal of	0.03
Edible offal of Goat and Sheep	0.03
Pig meat	0.5 (fat)
Pig, Edible offal of	0.03

Poultry meat 0.1 (fat)  
Poultry, Edible offal of 0.02  
Poultry fats 0.1 (fat)  
Eggs 0.02  
Milks 0.05 F

13. Pesticide: Dichlorvos

Type of Toxic Residue: Dichlorvos

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, entire group 0.1  
Citrus fruits 0.2  
Cereal grains 0.2  
Meat (from mammals other than marine mammals) 0.05  
Poultry meat 0.05  
Milks 0.02

14. Pesticide: Dicofof

Type of Toxic Residue:

- Plant commodities: dicofof (sum of o,p' & p,p'-isomers) (fat soluble)
- Animal commodities: sum of dicofof and 2,2-dichloro-1, 1-bis(4-chlorophenyl) ethanol (p,p' - FW 152), expressed as dicofof (fat soluble)

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seeds 0.05  
Spices, fruits or berries 0.1  
Spices, roots or rhizomes 0.1  
Cucumber 0.5  
Mung bean (dry) 0.1  
Soybean (dry) 0.05  
Tomato 1  
Cattle meat 3 (fat)  
Cattle, Edible offal of 1  
Poultry meat 0.1 (fat)  
Poultry, Edible offal of 0.05  
Eggs 0.05  
Milks 0.1F\*

15. Pesticide: Groups of dithiocarbamates: zineb, thiram, propineb, maneb, and mancozeb

Type of Toxic Residue: Total dithiocarbamates, determined and expressed as CS<sub>2</sub>

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra 0.2  
Garlic 0.5  
Rice 0.05  
Rambutan 4  
Spring onion 10  
Cucumber 2  
Melon except Watermelon 0.5

Watermelon	1	
Peanut	0.1	
Soybean (dry)	0.06	
Soybean (immature seeds)	0.2	
Durian	5	
Oil Palm	0.1	
Chinese cabbage	5	
Kale	15	
Fruiting Vegetables-Cucurbits, ex. Cucumber, Melons, Watermelon and Pumpkins		1
Water spinach	0.3	
Taro	0.1	
Peppers, Chili	2	
Peppers, Sweet	1	
Pumpkins	0.2	
Tomato	2	
Lime	2	
Mango	2	
Potato	0.2	
Citrus fruits	2	
Asparagus	0.1	
Shallot	0.5	
Onion, Bulb	0.5	
Grapes	2	
Meat (from mammals other than marine mammals)		0.05
Edible offal (Mammalian)	0.1	
Poultry meat	0.1	
Poultry, Edible offal of	0.1	
Eggs	0.05	
Milks	0.05	

#### 16. Pesticide: Dimethoate

Type of Toxic Residue: Dimethoate

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sorghum	0.01	
Spices, seeds	5	
Spices, fruits or berries	0.5	
Spices, roots or rhizomes	0.1	
Cucumber and other Cucurbits except Watermelon		1
Yard-long bean (pods)	1	
Beans (dry)	0.1	
Tomato	2	
Cotton seed	0.05	
Citrus fruits	5	
Shallot	0.05	
Onion, Bulb	0.05	
Meat (from mammals other than marine mammals)		0.05

Fat (Mammalian)	0.05
Edible offal (Mammalian)	0.05
Poultry meat	0.05
Poultry fats	0.05
Poultry, Edible offal of	0.05
Eggs	0.05
Milks	0.05

#### 17. Pesticide: Diazinon

Type of Toxic Residue: Diazinon

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob)	0.02
Baby corn	0.02
Maize	0.02
Sorghum	0.02
Spices, seeds	5
Spices, fruits or berries	0.1
Teas	0.1
Chinese cabbage	0.05
Kale	0.05
Brassica Vegetables, Chinese cabbage and Kale	0.5
Coffee beans	0.2
Cotton seed	0.1
Meat (from mammals other than marine mammals)	2 (fat)
Edible offal (Mammalian)	0.03
Poultry meat	0.02
Poultry, Edible offal of	0.02
Eggs	0.02
Milks	0.02 F

#### 18. Pesticide: Triazophos

Type of Toxic Residue: Triazophos

Type of food and Maximum Residue Limit; MRL (mg/kg)

Garlic	0.05
Sorghum	0.05
Mung bean (dry)	0.2
Peanut	0.05
Soybean (dry)	0.05
Soybean (immature seeds)	0.2
Jujube	0.2
Coffee beans	0.05
Cacao beans	0.05
Sesame seed	0.05
Sunflower seed	0.05
Shallot	0.05
Onion, Bulb	0.05

Grapes	0.02
Cattle meat	0.01
Poultry meat	0.01
Milks	0.01

19. Pesticide: Permethrin

Type of Toxic Residue: Permethrin

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices-entire group	0.05
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20. Pesticide: Paraquat

Type of Toxic Residue: Paraquat cation

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob)	0.05
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Baby corn	0.05
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Maize	0.1
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Sorghum	0.03
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Rice	0.1
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Cucumber and other cucurbits	0.02
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Beans (dry)	0.5
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Soybean (dry)	0.1
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Fruits (inedible peel), except Citrus fruits	0.01
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Leafy vegetables	0.07
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Root and tuber vegetables	0.05
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Tomato	0.05
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Potato	0.2
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Cotton seed	0.2
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Strawberry	0.01
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Citrus fruits	0.02
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Grapes	0.01
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Meat (from mammals other than marine mammals)	0.005
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Edible offal (Mammalian)	0.05
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Poultry meat	0.005
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Poultry, Edible offal of	0.005
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Eggs	0.005
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Milks	0.005
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21. Pesticide: Pirimiphos-methyl

Type of Toxic Residue: Pirimiphos-methyl

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob)	1
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Baby corn	1
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Maize	1
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Rice	7
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Spices, seeds	3
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Spices, fruits or berries	0.5
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Oil Palm	0.1	
Cacao beans	0.05	
Kapok seed	0.1	
Cashew nut	0.1	
Meat (from mammals other than marine mammals)		0.01
Edible offal (Mammalian)	0.01	
Poultry meat	0.01	
Poultry, Edible offal of	0.01	
Eggs	0.01	
Milks	0.01	

## 22. Pesticide: Prothiofos

Type of Toxic Residue: Prothiofos

Type of food and Maximum Residue Limit; MRL (mg/kg)

Mung bean (dry)	0.05
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Peanut	0.05
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Peppers, Chili	3
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Potato	0.05
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## 23. Pesticide: Profenofos

Type of Toxic Residue: Profenofos

Type of food and Maximum Residue Limit; MRL (mg/kg)

Cabbages, Head	1
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Rose apple	0.05
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Spring onion	0.05
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Soybean (dry)	0.05
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Durian	0.05
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Cotton seed oil	0.05
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Brassica Vegetables, except Cabbages, Head	0.5
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Peppers, Chili	5
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Peppers, Chili (dried)	35
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Peppers, Sweet	0.5
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Tomato	2
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Lime	0.05
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Mango	0.2
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Mangosteen	5
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Cotton seed	2
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Citrus fruits	0.1
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Shallot	0.05
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Onion, Bulb	0.05
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Grapes	0.05
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Meat (from mammals other than marine mammals)		0.05
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Edible offal (Mammalian)	0.05	
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Poultry meat	0.05	
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Poultry, Edible offal of	0.05	
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Eggs	0.02	
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Milks 0.01

24. Pesticide: Fenvalerate

Type of Toxic Residue: Fenvalerate

Type of food and Maximum Residue Limit; MRL (mg/kg)

Cabbages, Head 3

Sweet corn (corn-on-the-cob) 0.1

Baby corn 0.1

Yard-long bean (pods) 1

Peanut 0.1

Soybean (dry) 0.1

Oil Palm 0.5

Chinese cabbage 1

Kale 10

Brassica Vegetables, except Chinese cabbage and Kale 2

Tomato 1

Mango 1

Potato 0.05

Cotton seed 0.2

Longan 1

Litchi 1

Meat (from mammals other than marine mammals) 1 (fat)

Edible offal (Mammalian) 0.02

Milks 0.1F\*

25. Pesticide: Fenitrothion

Type of Toxic Residue: Fenitrothion

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob) 1

Baby corn 1

Maize 1

Rice 1

Spices, seeds 7

Spices, fruits or berries 1

Spices, roots or rhizomes 0.1

Teas 0.5

Soybean (dry) 0.5

Soybean (immature seeds) 0.5

Coffee beans 0.05

Meat (from mammals other than marine mammals) 0.05

Poultry meat 0.05

Eggs 0.05

Milks 0.01

26. Pesticide: Phosalone

Type of Toxic Residue: Phosalone



Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seeds	2
Spices, fruits or berries	2
Spices, roots or rhizomes	3
Spring onion	1
Yard-long bean (pods)	1
Garden pea (young pods)	1
Soybean (dry)	0.05
Soybean (immature seeds)	0.5
Durian	1
Mulberry leaves	0.1
Brassica Vegetables	1
Peppers, Chili	1
Peppers, Chili (dried)	7
Peppers, Sweet	1
Tomato	1
Thai egg plant	1
Egg plant	0.5
Mangosteen	1
Cotton seed	1
Citrus fruits	1
Asparagus	0.5
Shallot	1
Onion, Bulb	1

27. Pesticide: Folpet

Type of Toxic Residue: Folpet

Type of food and Maximum Residue Limit; MRL (mg/kg)

Rambutan	0.1
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28. Pesticide: Phenthoate

Type of Toxic Residue: Phenthoate

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seed	7
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29. Pesticide: Malathion

Type of Toxic Residue: Malathion

Type of food and Maximum Residue Limit; MRL (mg/kg)

Cabbages, Head	8
Sweet corn (corn-on-the-cob)	0.02
Baby corn	0.02
Maize	0.05
Sorghum	3
Spices, seeds	2
Spices, fruits or berries	1
Spices, roots or rhizomes	0.5

Cauliflower	0.5
Spring onion	5
Broccoli	5
Chinese cabbage	8
Kale	3
Peppers, Chili	0.1
Peppers, Chili (dried)	1
Tomato	0.5
Cassava	0.5
Citrus fruits	7
Shallot	1
Onion, Bulb	1
Sugar cane	0.01

### 30. Pesticide: Metalaxyl

Type of Toxic Residue: Metalaxyl

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob)	0.05
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Baby corn	0.05
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Maize	0.05
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Spices, seeds	5
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Cucumber	0.5
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Melon except Watermelon	0.2
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Watermelon	0.2
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Durian	1
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Angled loofah	0.2
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Kale	2
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Water spinach (Kangkuag)	2
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Taro	0.5
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Pepper, Black; White	0.05
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Betel leaves	0.05
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Pumpkins	2
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Wax gourd	0.2
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Potato	0.05
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Citrus fruits	5
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Pineapple	1
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Onion, Bulb	2
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Grapes	1
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### 31. Pesticide: Methidathion

Type of Toxic Residue: Methidathion

Type of food and Maximum Residue Limit; MRL (mg/kg)

Rambutan	0.5
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Durian	0.5
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Custard apple	0.5
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Pear	0.2
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Citrus fruits	0.5	
Grapes	0.2	
Meat (from mammals other than marine mammals)		0.02
Edible offal (Mammalian)	0.02	
Poultry meat	0.02	
Poultry, Edible offal of	0.02	
Eggs	0.02	
Milks	0.001	

### 32. Pesticide: Methomyl

Type of Toxic Residue: Sum of methomyl and thiodicarb, expressed as methomyl

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra	2	
Sweet corn (corn-on-the-cob)	0.1	
Baby corn	0.1	
Maize	0.02	
Sorghum	0.2	
Cucumber and other Cucurbits except Watermelon		0.2
Watermelon	0.2	
Mung bean (dry)	0.05	
Yard-long bean (pods)	1	
Peanut	0.1	
Soybean (dry)	0.2	
Soybean (immature seeds)	0.1	
Soybean oil	0.2	
Cotton seed oil	0.04	
Pear	0.2	
Peppers, Chili	0.7	
Peppers, Chili (dried)	5	
Tomato	0.5	
Eggplant, Thai eggplant and other eggplant-type commodities, except Tomato		0.2
Lime	1	
Potato	0.02	
Sesame seed	0.2	
Cotton seed	0.2	
Citrus fruits	1	
Asparagus	2	
Shallot	0.2	
Onion, Bulb	0.2	
Grapes	1	
Apple	0.2	
Meat (from mammals other than marine mammals)		0.02
Edible offal (Mammalian)	0.02	
Poultry meat	0.02	
Poultry, Edible offal of	0.02	
Eggs	0.02	

Milks 0.02

33. Pesticide: Lambda-cyhalothrin

Type of Toxic Residue: Lambda-cyhalothrin

Type of food and Maximum Residue Limit; MRL (mg/kg)

Okra 0.2

Sorghum 0.2

Rambutan 0.5

Mung bean (dry) 0.2

Soybean (dry) 0.2

Soybean (immature seeds) 0.2

Durian 0.5

Oil Palm 0.02

Brassica Vegetables 0.2

Mango 0.1

Cacao beans 0.02

Sesame seed 0.2

Kapok seed 0.02

Cotton seed 0.02

Longan 0.5

Litchi 0.5

Asparagus 0.02

34. Pesticide: Acephate

Type of Toxic Residue: Acephate

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, entire group 0.2

Mung bean (dry) 0.02

Peanut 0.02

Coffee beans 0.02

Cacao beans 0.02

Cotton seed 2

Meat (from mammals other than marine mammals) 0.05

Edible offal (Mammalian) 0.05

Poultry meat 0.01

Poultry, Edible offal of 0.01

Eggs 0.01

Milks 0.02

35. Pesticide: Atrazine

Type of Toxic Residue: Atrazine

Type of food and Maximum Residue Limit; MRL (mg/kg)

Sweet corn (corn-on-the-cob) 0.1

Baby corn 0.1

Maize 0.1

Pineapple 0.1

Sugar cane 0.1

36. Pesticide: Abamectin

Type of Toxic Residue: Abamectin

Type of food and Maximum Residue Limit; MRL (mg/kg)

Watermelon 0.01

Yard-long bean (pods) 0.01

Garden pea (young pods) 0.01

Pak-choi 0.01

Kale 0.01

Brassica Vegetables 0.01

Peppers, Chili 0.02

Peppers, Chili (dried) 0.2

Peppers, Sweet 0.02

Thai egg plant 0.02

Lime 0.01

Cotton seed 0.01

Citrus fruits 0.01

Grapes 0.01

Meat (from mammals other than marine mammals) 0.01

Fat (Mammalian) 0.1

Edible offal (Mammalian) 0.1

Poultry meat 0.01

Poultry, Edible offal of 0.02

Eggs 0.01

Milks 0.005

37. Pesticide: Ametryn

Type of Toxic Residue: Ametryn

Type of food and Maximum Residue Limit; MRL (mg/kg)

Teas 0.05

Coffee beans 0.05

Pineapple 0.05

Sugar cane 0.2

38. Pesticide: Ethephon

Type of Toxic Residue: Ethephon

Type of food and Maximum Residue Limit; MRL (mg/kg)

Banana 2

Cherries 3

Durian 2

Mango 2

Pineapple 2

Grapes 1

Apple 1

Meat (from mammals other than marine mammals) 0.1

Edible offal (Mammalian)	0.2
Poultry meat	0.1
Poultry, Edible offal of	0.2
Eggs	0.2
Milks	0.05

#### 39. Pesticide: Ethion

Type of Toxic Residue: Ethion

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seeds	3
Spices, fruits or berries	5
Spices, roots or rhizomes	0.3
Cucumber and other cucurbits, except Watermelon	0.3
Beans (dry)	1
Bean and Peas (green pods and immature seeds)	1
Peppers, Chili	3
Peppers, Chili (dried)	20
Tomato	0.3
Eggplant, Thai eggplant and other eggplant-type commodities, except Tomato	0.3
Lime	1
Citrus fruits	1

#### 40. Pesticide: Iprodion

Type of Toxic Residue: Iprodion

Type of food and Maximum Residue Limit; MRL (mg/kg)

Spices, seeds	0.05
Spices, roots or rhizomes	0.1

#### 41. Pesticide: Omethoate

Type of Toxic Residue: Omethoate

Type of food and Maximum Residue Limit; MRL (mg/kg)

Lead tree leaves	0.01
Mung bean (dry)	0.05
Soya bean (dry)	0.05
Cassava	0.05
Coffee beans	0.01
Cotton seed	0.05

### Annex 2

#### List attached to Notification of Public Health Ministry Re: Food with Pesticide Residues Extraneous Maximum Residue Limit, EMRL

##### 1. Pesticide: Aldrin and Dieldrin

Type of Toxic Residue: Sum of HHDN and HEOD (fat soluble)

Type of food and Extraneous Maximum Residue Limits (EMRL) (mg/kg)

Cereal grains	0.02
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Fruits	0.05	
Vegetables, Herbs, and spices ex. Cucurbits, roots and tuber vegetables		0.05
Cucurbits	0.1	
Tubers and Root Vegetables	0.1	
Plants for sugar	0.05	
Plants for beverages	0.2	
Nuts and Seeds	0.05	
Pulses and Oil seeds	0.05	
Vegetable fat and oils	0.2	
Animal fat and oils	0.2	
Mamalian meat and edible offal	0.2 (fat)	
Poultry meat and edible offal	0.2 (fat)	
Meat of aquatic animals, molluscs, and invertebrate animals		0.2 (fat)
Meat of amphibians and reptiles	0.2 (fat)	
Eggs	0.1	
Milk	0.006F*	

## 2. Pesticide: Chlordane

Type of Toxic Residue:

- Plant commodities: sum of cis- and trans- chlordane (fat soluble)
- Animal commodities: sum of cis- and trans- chlordane, and oxychlordane (fat soluble)

Type of food and Extraneous Maximum Residue Limits (EMRL) (mg/kg)

Cereal grains	0.02	
Fruits	0.02	
Vegetable, Herbs, and Spices	0.02	
Vegetables, Herbs, and spices ex. Cucurbits, roots and tuber vegetables		-
Plants for sugar	0.02	
Plants for beverages	0.02	
Nuts and Seeds	0.02	
Pulses and Oil seeds	0.02	
Vegetable fat and oils	0.02	
Animal fat and oils	0.05	
Mamalian meat and edible offal	0.05 (fat)	
Poultry meat and edible offal	0.05 (fat)	
Meat of aquatic animals, molluscs, and invertebrate animals		0.05 (fat)
Meat of amphibians and reptiles	0.05 (fat)	
Eggs	0.02	
Milk	0.002F*	

## 3. Pesticide: DDT

Type of Toxic Residue: Sum of p, p/-DDT, o, p/-DDT, p,p/-DDE, and p,p/TDE(DDD) (fat soluble)

Type of food and Extraneous Maximum Residue Limits (EMRL) (mg/kg)

Cereal grains	0.1
Fruits	0.01
Vegetable, Herbs, and Spices except carrot	0.01

Carrot 0.2  
 Plants for sugar 0.01  
 Plants for beverages 0.01  
 Nuts and Seeds 0.01  
 Pulses and Oil seeds 0.01  
 Vegetable fat and oils 0.05  
 Animal fat and oils 1  
 Mamalian meat and edible offal 5 (fat)  
 Poultry meat and edible offal 0.3 (fat)  
 Meat of aquatic animals, molluscs, and invertebrate animals 1 (fat)  
 Meat of amphibians and reptiles 1 (fat)  
 Eggs 0.1  
 Milk 0.02F\*

#### 4. Pesticide: Endrin

Type of Toxic Residue: Sum of endrin and delta-keto-endrin (fat soluble)

Type of food and Extraneous Maximum Residue Limits (EMRL) (mg/kg)

Cereal grains 0.01  
 Fruits 0.01  
 Vegetables, Herbs, and Spices except Cucurbits 0.01  
 Cucurbits 0.05  
 Plants for sugar 0.01  
 Plants for beverages 0.01  
 Nuts and Seeds 0.01  
 Pulses and Oil seeds 0.01  
 Vegetable fat and oils 0.05  
 Animal fat and oils 0.05  
 Mamalian meat and edible offal 0.05 (fat)  
 Poultry meat and edible offal 0.1 (fat)  
 Meat of aquatic animals, molluscs, and invertebrate animals 0.05 (fat)  
 Meat of amphibians and reptiles 0.05 (fat)  
 Eggs 0.005  
 Milk 0.0008F\*

#### 5. Pesticide: Heptachlor

Type of Toxic Residue: Sum of heptachlor and heptachlor epoxide (fat soluble)

Type of food and Extraneous Maximum Residue Limits (EMRL) (mg/kg)

Cereal grains 0.02  
 Fruits 0.01  
 Vegetable, Herbs, and Spices 0.05  
 Plants for sugar 0.01  
 Plants for beverages 0.05  
 Nuts and Seeds 0.02  
 Pulses and Oil seeds 0.02  
 Vegetable fat and oils 0.02  
 Animal fat and oils 0.2



Mamalian meat and edible offal	0.2 (fat)
Poultry meat and edible offal	0.2 (fat)
Meat of aquatic animals, molluscs, and invertebrate animals	0.2 (fat)
Meat of amphibians and reptiles	0.2 (fat)
Eggs	0.05
Milk	0.006F*

Remark:

\* "F" indicated after the MRLs of milks for fat-soluble pesticide residues means the MRLs for fat-soluble pesticide residues in milk or milk products expressed on a whole product based. In addition, criteria for using the MRL with "F" are as follows:

(1) For a "milk product" with a fat content less than 2 %, the MRL applied should be as half of those specified for milk.  
 (2) For a "milk product" with a fat content of 2 % or more, the MRL applied should be 25 times of the established MRL for milk, expressed on a fat basis.

## APPENDIX

List of Agricultural Pesticides, which are considered as Type 4 hazardous substances under the Hazardous Substance Act B.E. 2535 (1992)

1. aldrin
2. aminocarb
3. 4-aminodiphenyl
4. amitrole
5. aramite
6. asbestos - amosite
7. azinphos - ethyl
8. azinphos - methyl
9. benzdine
10. beta - HCH 1,3,5/2,4,6 - hexachloro- cyclohexane
11. BHC or HCH (1,2,3,4,5,6 - hexachloro-cyclohexane)
12. binapacryl
13. bis chloromethyl ether
14. bromophos
15. bromophos-ethyl
16. cadmium and cadmium compounds
17. calcium arsenate
18. captafol
19. carbon tetrachloride
20. chlordane
21. chlordecone
22. chlordimeform
23. chlorobenzilate
24. chlorophenols
25. chlorthiophos
26. copper arsenate hydroxide
27. cycloheximide

28. cyhexatin
29. daminozide
30. DBCP (1,2-dibromo-3-chloropropane)
31. DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl ethane))
32. demephion
33. demeton
34. o-dichlorobenzene
35. dieldrin
36. dimefox
37. dinoseb
38. dinoterb
39. disulfoton
40. DNOC (4,6-dinitro-o-cresol)
41. EDB (1,2-dibromoethane)
42. endrin
43. ethyl hexyleneglycol (ethyl hexane diol)
44. ethylene dichloride
45. ethylene oxide (1,2-epoxyethane )
46. fensulfothion
47. fentin
48. fluoroacetamide
49. fluoroacetate sodium
50. fonofos
51. heptachlor
52. hexachlorobenzene
53. lead arsenate
54. leptophos
55. lindane (>99% gamma-HCH หรือ gamma- BHC)
56. MCPB [4-(4-chhloro-o-tolyloxy) butyric acid]
57. mecoprop
58. mephosfolan
59. mercury compounds
60. mevinphos
61. MGK repellent - 11
62. mirex
63. monocrotophos
64. naphthylamine
65. 4-nitrodiphenyl
66. nitrofen
67. parathion
68. Paris green
69. pentachlorophenate sodium หรือ pentachlorophenoxide sodium
70. pentachlorophenol
71. phenothiol
72. phorate
73. phosphamidon

74. phosphorus
75. polybrominated biphenyls, PBBs
76. polychlorinated triphenyls, PCTs
77. prothoate
78. pyrinuron (piriminil)
79. safrole
80. schradan
81. sodium arsenite
82. sodium chlorate
83. strobane (polychloroterpenes)
84. sulfotep
85. 2,4,5-T ([2,4,5-trichlorophenoxy] acetic acid)
86. 2,4,5-TCP (2,4,5-trichlorophenol)
87. TDE or DDD [1,1-dichloro-2,2-bis (4-chlorophenyl) ethane]
88. TEPP (tetraethyl pyrophosphate)
89. 2,4,5-TP ((+)-2-[2,4,5-trichlorophenoxy] propionic acid)
90. thallium sulfate
91. toxaphene or camphechlor
92. tri (2,3-dibromopropyl) phosphate
93. vinyl chloridemonomer (monochloroethene)
94. methamidophos
95. parathion methyl
96. endosulfan