

Consultation Document

Refined Regulatory Framework for **Pesticide Residues in Food** in Hong Kong

July 2011



食物及衛生局
Food and Health Bureau



食物環境衛生署
Food and Environmental
Hygiene Department



食物安全中心
Centre for Food Safety

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CHAPTER 1 INTRODUCTION

1.1 The use of pesticides and other chemicals has become a common agricultural practice to enhance and stabilise crop yield, protect the nutritional integrity of food, facilitate storage to assure year-round supplies, and provide attractive and appealing food products. The proper use of pesticides is beneficial to public health to protect crops from contamination by natural toxins and harmful microorganisms.

1.2 Notwithstanding the beneficial effects, the use of pesticides and its resultant residues requires careful monitoring and regulation. Small amounts of pesticide residues may remain in the crops or animal food. Exposure to pesticide residues in food is an issue that is of considerable concern to consumers, food producers, academics and government agencies.

1.3 The adverse health effects of pesticides depend on the nature of the pesticide, as well as the amount and duration of individual exposure. Excessive exposure to some pesticides may cause acute adverse health effects¹.

1.4 Most of the international regulatory authorities and the Mainland authority have already introduced statutory control on pesticide residues in food. To better protect public health, facilitate effective regulation and promote harmonisation between local and international standards, there is a genuine need to introduce a regulatory framework on pesticide residues in food in Hong Kong.

¹ For example, methamidophos and triazophos may affect the nervous system.

CHAPTER 2 SITUATION IN HONG KONG AND INTERNATIONAL PRACTICE

Food supplies in Hong Kong

2.1 Most of the fruit and vegetable supplied in Hong Kong are imported from countries or areas around the world. In 2010, about 33% of fresh and semi-processed fruits, vegetables and cereals were imported from the Mainland, 30% from Thailand and about 13% from the United States of America (USA), with each of the rest of the other countries contributing to less than 5% of the total annual import.² Local production accounted for only 2.5% of fresh vegetables consumed in 2010.³

Current regulatory control on the use of pesticides

2.2 At present, the import, manufacture, sale and supply of pesticides in Hong Kong are regulated by the Pesticides Ordinance (Cap. 133). The Agriculture, Fisheries and Conservation Department (AFCD) is responsible for enforcing the relevant provisions. All pesticides intended for sale in Hong Kong must be registered with the Director of Agriculture, Fisheries and Conservation (DAFC). Except with a licence issued by DAFC, no person shall import, manufacture, sell or supply registered pesticides. While there are general provisions under Cap.132 that all food on sale for human consumption must be wholesome, unadulterated and fit for human consumption, there is currently no specific legal provision that regulates the level of pesticide residues in food.

2.3 The Centre for Food Safety (CFS) operates a food surveillance programme and regularly takes food samples to test, among others, for pesticide residues following the testing methods and standards recommended by the Codex Alimentarius Commission (Codex)⁴. However, the lack of a specific legal provision governing the level of pesticide residues in food means that a case-by-case assessment would need to be made in order to substantiate that the concerned food sample is unfit for human consumption (section 54 of Cap. 132) before CFS can prosecute the food trader concerned. This also deviates from the general principle that pesticide use should be kept at a minimum possible level as recognized by Codex and developed countries. The introduction of specific regulation on pesticide residues in food is therefore considered necessary.

² Census and Statistics Department. Hong Kong Merchandise Trade Statistics - Imports December 2010.

³ Agriculture, Fisheries and Conservation Department. Agriculture in HK. Available from: http://www.afcd.gov.hk/english/agriculture/agr_hk/agr_hk.html

⁴ Codex, established by the Food and Agriculture Organization and the World Health Organization of the United Nations in 1960s, is the single most important reference point for consumers, food producers, processors, national food control agencies and the international food trade in developing food associated standards.

International practice

2.4 Regulation of pesticide residues in food is well developed in the international arena. Statutory regulation on pesticide residues in food has been introduced in major jurisdictions such as Australia, the European Union, Japan, the Mainland, New Zealand, Singapore and the USA. We have made reference to the practices in these jurisdictions in formulating the refined regulatory framework in Chapter 3.

CHAPTER 3 THE REFINED REGULATORY FRAMEWORK

Background

3.1 To address growing concern about safe use of pesticide in food, the Government conducted a public consultation exercise on a proposal for regulatory framework for pesticide residues in food in November 2007. The key features of the proposed regulatory framework then were summarised as follows:

- to define “pesticide” and other related terms in a way consistent with Codex;
- to adopt a “positive list approach”⁵;
- to adopt “maximum residue limits” (MRLs)⁶ and “extraneous maximum residue limits” (EMRLs)⁷ developed by Codex as the backbone;
- to develop a “default value”⁸ for pesticide residues without specified MRLs and a list of “exempted substances”;
- to adopt Codex’s classification of foods; and
- to implement the new Regulation with a grace period.

⁵ Under a “positive list approach”, any pesticide residues without specified maximum residue limits (MRLs) in the legislation are strictly not allowed.

⁶ Codex defines “MRL” as the maximum concentration of a pesticide residue (expressed as mg/kg) recommended by the Codex Alimentarius Commission to be legally permitted in or on food and agricultural commodities.

⁷ Codex defines “EMRL” as referring to a pesticide residue or a contaminant arising from environmental sources (including former agricultural uses) other than the use of a pesticide or contaminant substance directly or indirectly on the commodity. It is the maximum concentration of a pesticide residue or contaminant (expressed as mg/kg) that is recommended by the Codex Alimentarius Commission to be legally permitted or recognized as acceptable in or on food and agricultural commodities.

⁸ Under a “default value” approach, any pesticide residues with residual level exceeding a “default value” are not allowed.

3.2 We have since then collected views from a wide range of stakeholders, experts, and the public, and conducted a Regional Symposium on Regulation of Pesticide Residues in Food, jointly organized with the European Commission in 2009. We have also consulted the Expert Committee on Food Safety⁹. We have refined the 2007 proposed regulatory framework in the light of the feedback received. Based on the refined framework, we have further consulted the stakeholders. Since January 2011, we have conducted a total of 14 briefings and consultation sessions to gauge the views of the stakeholders. On the basis of the views collected, the Government has further improved the proposed regulatory framework.

Objectives of refined regulatory framework

3.3 The refined regulatory framework aims to strengthen the regulation of pesticide residues in food to achieve the following objectives -

- (a) better protect public health;
- (b) facilitate effective regulation; and
- (c) promote harmonisation between local and international standards.

3.4 In striving to achieve the above objectives, the Government is mindful of the need to maintain a stable supply of food in Hong Kong. To achieve the above objectives, we propose that DFEH should make a Regulation on Pesticide Residues in Food (the proposed Regulation) under section 55 of the Public Health and Municipal Services Ordinance (Cap. 132).

To adopt Codex's definition of "pesticides" and other related terms

3.5 The main structure of the framework has taken reference from that of Codex. Definition of terms such as "pesticide", "pesticide residue", "MRL" and "EMRL" in the proposed Regulation is consistent with those of Codex. This will promote harmonisation of local and international standards.

⁹ The Expert Committee on Food Safety is responsible for advising DFEH in the formulation of food safety measures, review of food safety standards in light of international practices, trends and developments, as well as risk communication strategies. The Expert Committee consists of academics, professionals, food experts, members of the trade and consumer group, and other experts.

To regulate pesticide residues by a list of MRLs/EMRLs

3.6 The proposed Regulation will specify in its First Schedule a list of MRLs/EMRLs for certain pesticide-food pairs (i.e. the maximum concentration of specified pesticide residues permitted in specified food commodities). The presence of any of these pesticide residues in food at levels exceeding the MRLs/EMRLs will contravene the proposed Regulation.

3.7 The formulation of the list of MRLs/EMRLs is based primarily on the available standards recommended by Codex, supplemented by related standards of the Mainland and other major food exporting countries to Hong Kong (the USA and Thailand). These standards will further be scrutinised by conducting risk assessment to ensure that they are adequate to protect public health in Hong Kong. This approach is considered pragmatic, taking into account the heavy reliance of Hong Kong on imported food. Such an approach will strike a balance between protecting public health and maintaining stable supply of food in Hong Kong.

3.8 The proposed list of pesticides to be included in the proposed regulation is at Annex I. The full list of proposed MRLs/EMRLs is available at CFS's website¹⁰. This is a preliminary list as CFS is updating the MRLs/EMRLs according to the latest changes in the international standards.

3.9 Some general principles in interpreting the MRLs/EMRLs in respect of dried, dehydrated, concentrated, processed or compounded food are at Annex II.

To adopt Codex's classification of foods

3.10 As Codex standards form the backbone of the refined regulatory framework, we have also adopted Codex's food classification system for consistency. This has the added benefit of adopting the uniform nomenclature used in international markets.

Pesticide residues with no specified MRL/EMRL in the proposed Regulation

3.11 With regard to pesticide-food pairs for which no MRL/EMRL has been specified in the proposed Regulation, the general principle is that except for exempted substances, import and sale of the concerned food will be prohibited unless DFEH is satisfied that the detected level of pesticide residue is not dangerous or prejudicial to health. To this end, DFEH will conduct risk assessment, taking into account a host of factors including safety reference values¹¹ and local situation.

¹⁰ http://www.cfs.gov.hk/english/whatsnew/whatsnew_fstr/whatsnew_fstr_21_Pesticide.html

¹¹ Safety reference values refer to acceptable daily intake for chronic toxicity and acute reference dose for acute toxicity.

To establish a list of exempted substances

3.12 To facilitate the trade to use pesticides that are natural and the residues of which are identical to or indistinguishable from natural food components, it is proposed to specify a list of exempted substances in the Second Schedule of the proposed Regulation. Exempted substances must fall under the definition of pesticide and meet one of the following criteria:

- (a) the use of the pesticides does not result in residues occurring in food;
- (b) the residues are identical to or indistinguishable from natural food components; or
- (c) the residues are of no toxicological significance or will not pose any public health risk.

3.13 Such a list of exempted substances is not available from Codex, but we have made reference to the lists adopted by major food exporting countries to Hong Kong in drawing up our own. The proposed list of exempted substances in Hong Kong is at Annex III.

To update the lists of MRLs/EMRLs and exempted substances regularly

3.14 As new pesticides and new applications on crops keep emerging, the lists of MRLs/EMRLs and exempted substances specified in the proposed Regulation will be updated by DFEH regularly.

To allow application for revising/adding MRLs and exempted substances

3.15 Import tolerance is a trade facilitation measure commonly found in overseas jurisdictions¹². The purpose is to cater for pesticide-food pairs or pesticides respectively that have been found to be acceptable from public health perspective in other jurisdictions but not yet included in the local lists of MRL / exempted substances. We propose to adopt a similar measure which would allow a person to apply to DFEH for adding a new MRL to the First Schedule or revising an existing MRL therein, or adding an exempted substance to the Second Schedule of the proposed Regulation. Application fee will be charged on the basis of full-cost recovery and will not be refundable.

¹² Canada, the EU, Japan and the USA have adopted a regulatory measure of import tolerance for pesticide residues in food.

3.16 Applications must be accompanied by sufficient information, such as the current or anticipated availability of the concerned food product in Hong Kong, relevant toxicological data and safety reference values of the concerned pesticide, pesticide supervised field trial data, pesticide residue data, analytical methods, information on availability of analytical reference standards, reports of food processing studies, and relevant information if MRLs have been established by Codex or overseas jurisdictions or exemption from establishing MRL for the concerned pesticide has been granted by overseas jurisdictions.

3.17 Upon receiving the application, DFEH will conduct risk assessment. The proposed Regulation will provide that DFEH may approve the application if he is satisfied, among other things, that the level of residue is not dangerous or prejudicial to health. For applications related to MRLs, DFEH may set up or revise an MRL with the same or different limits from the overseas MRL cited by the applicant. For applications related to exempted substances, DFEH may add the pesticide concerned into the list of exempted substances.

3.18 DFEH would revise the lists of MRLs and exempted substances regularly by incorporating all MRLs/exempted substances approved during the period.

To dovetail with registration of pesticides for use on local food crops

3.19 To ensure that a newly registered pesticide for use on local food crops under Cap. 133 would be properly regulated under the proposed Regulation, there is a need to introduce a dovetailing mechanism.

3.20 We propose that DAFC shall collect, for the purpose of application for registration of pesticide under Cap. 133, any information relevant to the proposed Regulation for consideration of setting up MRLs or adding exempted substances. We would empower DFEH in the proposed Regulation to obtain from DAFC such information. On the basis of the information submitted by the applicant, DFEH would advise DAFC whether the pesticide in question could be regulated by way of setting up a MRL or adopted as an exempted substance in the proposed Regulation. If so, DFEH would amend the First or Second Schedule in the proposed Regulation to incorporate the new standard.

3.21 DAFC will decide whether to approve the registration of the pesticide, having regard to DFEH's advice and other relevant considerations under Cap. 133.

3.22 Application fee will be charged on the basis of full-cost recovery as if the applicant is applying for adding MRLs or exempted substances under the proposed Regulation and will not be refundable.

Penalty

3.23 It would be an offence to import, manufacture or sell for human consumption any food containing –

- (a) pesticide residue at a level exceeding that specified in the First Schedule of the proposed Regulation; or
- (b) pesticide not specified in the First or Second Schedule of the proposed Regulation, or though so specified, but are found in other kinds of food, i.e., not in the stated pesticide – food pairs, unless the DFEH is satisfied that the detected level will not be dangerous or prejudicial to health.

The maximum penalty for contravention will be a fine at level 5 (\$50,000) and imprisonment for six months. This is in line with the penalty for selling food which is unfit for human consumption under section 54 of Cap.132.

Statutory defences

3.24 Section 71 of Cap. 132 stipulates conditions under which warranty may be pleaded by the defendant as defence in any proceedings for an offence under the relevant part of the Ordinance. This would also be applicable to the offences under the proposed Regulation. For example, a vendor charged under the proposed Regulation may produce evidence such as invoices to demonstrate that the food concerned is in the original state as obtained from the supplier without any further treatment and the supplier's earlier confirmation of safe food supply.

3.25 In addition, section 70 of Cap.132 provides that if the defendant could prove that the contravention was due to the act or default of some other person, and that he has used all due diligence to secure that the provisions in question were complied with, he may plead this as a defence. Again, this is applicable to offences under the proposed Regulation.

Legislative timetable

3.26 We plan to table the proposed Regulation at the Legislative Council towards the end of 2011.

Grace period

3.27 To allow sufficient time for the trade to comply with the proposed Regulation, we propose that there should be a two-year grace period prior to the commencement of the proposed Regulation. During this period, CFS will provide briefings, training and guidelines for different sectors to familiarise them with the proposed Regulation.

Improvement over the proposed regulatory framework in 2007

3.28 The updated proposed framework described in paragraphs 3.3 to 3.27 above has improved over the one in 2007 in the following aspects -

- (a) modified “positive list approach”: The “positive list approach” in the 2007 framework is a strict arrangement with no allowance for the use of pesticides outside the lists of MRLs and EMRLs. The modified “positive list approach” now proposed provides that where pesticide residues are found outside the list, it will be prohibited unless DFEH is satisfied that the level of residue will not be dangerous or prejudicial to health. In coming to his decision, DFEH will conduct risk assessment. Risk assessment is a science-based approach. Compared with the “positive list approach”, the modified “positive list approach” is more flexible. The Expert Committee on Food Safety supports such an approach as it is science-based and in line with international developments on regulation of pesticide residues in food. Accordingly, there is no need to develop a “default value” since this has been taken care of by risk assessment;
- (b) applications for adding/revising MRLs and exempted substances: to ensure that the lists of MRLs and exempted substances are up-to-date, we now propose to allow food traders to apply to DFEH to add a new MRL or revise an existing MRL, or to add an exempted substance under the proposed Regulation. The proposed Regulation will provide that DFEH may approve the application if he is satisfied, among other things, that the level of residue is not dangerous or prejudicial to health. In coming to his decision, DFEH will conduct risk assessment; and

- (c) dovetailing mechanism between Cap. 133 and the proposed Regulation: to ensure that a newly registered pesticide for use on local food crops under Cap. 133 is properly regulated under the proposed Regulation, we now propose to introduce an arrangement whereby AFCD will require applicants for pesticide registration under Cap. 133 to provide sufficient information for the purpose of setting up the corresponding MRLs or exempted substances. Such information would be passed to DFEH to facilitate the latter's processing of the application of adding new MRL or exempted substances in the proposed Regulation. We would empower DFEH in the proposed Regulation to obtain from DAFC such information.

3.29 We are satisfied that the refined regulatory framework is an improvement over the 2007 proposal since it is more flexible, comprehensive and caters more to the updated situation on the pesticide front in the local and international arena.

CHAPTER 4 VIEWS SOUGHT

4.1 Salient features of the refined regulatory framework, as set out in Chapter 3, are summarised as follows:

- to define “pesticide” and other related terms in a way consistent with Codex;
- to provide a list of MRLs/EMRLs, to adopt MRLs/EMRLs recommended by Codex as the backbone as well as the Codex’s classification of foods;
- to prohibit the import and sale of the concerned food for which no MRL/EMRL has been specified, unless DFEH is satisfied that the detected level will not be dangerous or prejudicial to health;
- to provide a list of exempted substances;
- to accept applications for adding/revising MRLs and exempted substances;
- to dovetail the proposed Regulation with the registration of pesticides for use on food crops under the Pesticides Ordinance (Cap. 133); and
- to commence the proposed Regulation after a two-year grace period.

4.2 The Government invites you to let us have your views on the refined regulatory framework. Please send your comments by letter, facsimile or e-mail to the Centre for Food Safety before 19 September 2011:

Centre for Food Safety
(Attn.: Consultation on Pesticide Residues in Food)
Food and Environmental Hygiene Department
43/F, Queensway Government Offices,
66 Queensway, Hong Kong
Facsimile: (852) 2893 3547
E-mail address: pesticide_consultation@fehd.gov.hk
Enquiry tel. no.: (852) 2867 5699

4.3 The Government will take the views received into consideration before finalising the proposed Regulation.

4.4 Any person submitting views and comments should be aware that the Government may publish all or part of the views and comments received and disclose the identity of the source in such manner as the Government considers appropriate, unless he/she requests any part of the views and comments and/or his/her identity be treated in confidence.

Preliminary List of Pesticides to be Included in the Proposed Regulation

(Note: The list is being updated and subject to change)

1. 1-Naphthaleneacetic acid
2. 2-(Thiocyanomethyl-thio) benzothiazole (TCMTB)
3. 2,4-D
4. 2-methyl-4-chlorophenoxyacetic acid (MCPA)
5. 2-Phenylphenol
6. 4-(2, 4-Dichlorophenoxy) butyric acid
7. Abamectin
8. Acephate
9. Acequinocyl
10. Acetamiprid
11. Acetochlor
12. Acibenzolar-S-methyl
13. Acifluorfen
14. Alachlor
15. Aldicarb
16. Aldrin and Dieldrin
17. Alpha-Naphthaleneacetamide
18. Ametryn
19. Aminoethoxyvinylglycine (Aviglycine)
20. Aminopyralid
21. Amitraz
22. Amitrole
23. Anilazine
24. Asulam
25. Atrazine
26. Azinphos-methyl
27. Azocyclotin
28. Azoxystrobin
29. Benalaxyl
30. Benfluralin
31. Benfuracarb
32. Bensulfuron methyl
33. Bentazone
34. Bifenthrin
35. Bioresmethrin
36. Bispyribac-sodium
37. Bisultap
38. Bitertanol
39. Boscalid
40. Bromacil
41. Bromide Ion
42. Bromopropylate
43. Bromoxynil
44. Buprofezin
45. Butachlor
46. Butafenacil
47. Butylate
48. Cacodylic acid
49. Cadusafos
50. Captan
51. Carbaryl
52. Carbendazim/Benomyl
53. Carbofuran
54. Carbon disulfide
55. Carbosulfan
56. Carboxin
57. Carfentrazone-ethyl
58. Chlorantraniliprole
59. Chlorbenzuron
60. Chlordane
61. Chlorfenapyr
62. Chlorimuron ethyl
63. Chlormequat
64. Chlorothalonil
65. Chlorpropham
66. Chlorpyrifos
67. Chlorpyrifos-methyl
68. Chlorsulfuron
69. Chlortoluron
70. Clodinafop-propargyl
71. Clofencet
72. Clofentezine
73. Clomazone

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| 74. Clopyralid | 115. Dithiocarbamates |
| 75. Clothianidin | 116. Diuron |
| 76. Coumaphos | 117. Dodine |
| 77. Cryolite | 118. Edifenphos |
| 78. Cyanide | 119. Emamectin |
| 79. Cyclanilide | 120. Endosulfan |
| 80. Cycloate | 121. Endrin |
| 81. Cyfluthrin | 122. Esfenvalerate |
| 82. Cyhalothrin | 123. Ethalfluralin |
| 83. Cyhexatin | 124. Ethametsulfuron-methyl |
| 84. Cymoxanil | 125. Ethephon |
| 85. Cypermethrin | 126. Ethion |
| 86. Cyproconazole | 127. Ethoprophos |
| 87. Cyprodinil | 128. Ethoxyquin |
| 88. Cyromazine | 129. Etofenprox |
| 89. DDT | 130. Etoxazole |
| 90. Deltamethrin | 131. Famoxadone |
| 91. Desmedipham | 132. Fenamidone |
| 92. Diazinon | 133. Fenamiphos |
| 93. Dicamba | 134. Fenarimol |
| 94. Dichlobenil | 135. Fenbuconazole |
| 95. Dichlofluanid | 136. Fenbutatin oxide |
| 96. Dichlorvos | 137. Fenhexamid |
| 97. Diclofop-methyl | 138. Fenitrothion |
| 98. Dicloran | 139. Fenobucarb (BPMC) |
| 99. Diclosulam | 140. Fenoxaprop-ethyl |
| 100. Dicofol | 141. Fenpropathrin |
| 101. Dicrotophos | 142. Fenpropimorph |
| 102. Difenoconazole | 143. Fenpyroximate |
| 103. Difenzoquat | 144. Fenthion |
| 104. Diflubenzuron | 145. Fenvalerate |
| 105. Dimethenamid-P | 146. Fipronil |
| 106. Dimethipin | 147. Flonicamid |
| 107. Dimethoate | 148. Florasulam |
| 108. Dimethomorph | 149. Fluazifop-butyl |
| 109. Dimethyl tetrachloroterephthalate
(DCPA) | 150. Fluazifop-P-butyl |
| 110. Diniconazole | 151. Fluazinam |
| 111. Dinotefuran | 152. Flucythrinate |
| 112. Diphenylamine | 153. Fludioxonil |
| 113. Diquat | 154. Fluefenacet |
| 114. Dithianon | 155. Flufenoxuron |
| | 156. Flufenpyr-ethyl |

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| 157. Flumethrin | 199. Linuron |
| 158. Flumetsulam | 200. Malathion |
| 159. Flumiclorac pentyl | 201. Maleic hydrazide |
| 160. Flumioxazin | 202. Mandipropamid |
| 161. Fluometuron | 203. Mepiquat chloride |
| 162. Fluopicolide | 204. Mesosulfuron-methyl |
| 163. Fluridone | 205. Mesotrione |
| 164. Fluroxypyr | 206. Metalaxyl |
| 165. Flusilazole | 207. Metaldehyde |
| 166. Fluthiacet-methyl | 208. Metconazole |
| 167. Flutolanil | 209. Methamidophos |
| 168. Fluvalinate | 210. Methanearsonic acid |
| 169. Folpet | 211. Methidathion |
| 170. Fomesafen | 212. Methiocarb |
| 171. Forchlorfenuron | 213. Methomyl |
| 172. Formetanate hydrochloride | 214. Methoprene |
| 173. Fosetyl-Al | 215. Methoxyfenoxide |
| 174. Fthalide | 216. Methyl bromide |
| 175. Glufosinate-Ammonium | 217. Metolachlor |
| 176. Glyphosate | 218. Metribuzin |
| 177. Halosulfuron-methyl | 219. Metsulfuron methyl |
| 178. Haloxyfop | 220. Mevinphos |
| 179. Heptachlor | 221. Molinate |
| 180. Hexachlorocyclohexane | 222. Monocrotophos |
| 181. Hexythiazox | 223. Myclobutanil |
| 182. Hydramethylnon | 224. Naled |
| 183. Hydrogen phosphide | 225. Napropamide |
| 184. Imazalil | 226. Naptalam |
| 185. Imazamethabenz-methyl | 227. Nicosulfuron |
| 186. Imazapyr | 228. Nitrapyrin |
| 187. Imazethapyr | 229. N-Octyl Bicycloheptene
Dicarboximide (Mgk-264) |
| 188. Imidacloprid | 230. Norflurazon |
| 189. Indoxacarb | 231. Novaluron |
| 190. Iodosulfuron-Methyl-Sodium | 232. Orthosulfamuron |
| 191. Iprodione | 233. Oryzalin |
| 192. Isocarbophos | 234. Oxadiazon |
| 193. Isofenphos-methyl | 235. Oxamyl |
| 194. Isoprocarb | 236. Oxydemeton-methyl |
| 195. Isoprothiolane | 237. Oxyfluorfen |
| 196. Kresoxim-Methyl | 238. Oxytetracycline |
| 197. Lactofen | 239. Paclobutrazol |
| 198. Lindane | |

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|---------------------------|---|
| 240. Paraquat | 282. Pyrimethanil |
| 241. Parathion | 283. Pyriproxyfen |
| 242. Parathion-methyl | 284. Pyriproxyfen sodium |
| 243. Penconazole | 285. Pyroxsulam |
| 244. Pendimethalin | 286. Quinalphos |
| 245. Penoxsulam | 287. Quinclorac |
| 246. Permethrin | 288. Quinoxifen |
| 247. Phenmedipham | 289. Quinazifos |
| 248. Phenthoate | 290. Quizalofop ethyl |
| 249. Phorate | 291. Rimsulfuron |
| 250. Phosalone | 292. Semiamitraz |
| 251. Phosmet | 293. Sethoxydim |
| 252. Phosphamidon | 294. S-Ethyl dipropylthiocarbamate (EPTC) |
| 253. Phoxim | 295. Simazine |
| 254. Picloram | 296. Spinosad |
| 255. Piperonyl butoxide | 297. Spirodiclofen |
| 256. Pirimicarb | 298. Spiromesifen |
| 257. Pirimiphos-Methyl | 299. Spiroxamine |
| 258. Pretilachlor | 300. Streptomycin |
| 259. Primisulfuron-methyl | 301. Sulfur dioxide |
| 260. Prochloraz | 302. Sulfuryl fluoride |
| 261. Procymidone | 303. Tebuconazole |
| 262. Profenofos | 304. Tebufenozide |
| 263. Prohexadione calcium | 305. Tecnazene |
| 264. Prometryn | 306. Teflubenzuron |
| 265. Propachlor | 307. Tefluthrin |
| 266. Propamocarb | 308. Tembotrione |
| 267. Propanil | 309. Terbufos |
| 268. Propargite | 310. Tetrachlorvinphos |
| 269. Propazine | 311. Tetraconazole |
| 270. Propiconazole | 312. Thiabendazole |
| 271. Propoxycarbazon | 313. Thiacloprid |
| 272. Propylene oxide | 314. Thiamethoxam |
| 273. Propyzamide | 315. Thidiazuron |
| 274. Prothioconazole | 316. Thifensulfuron methyl |
| 275. Prothiofos | 317. Thiocyclam |
| 276. Pymetrozine | 318. Tolclofos-Methyl |
| 277. Pyraclostrobin | 319. Tolyfluanid |
| 278. Pyrethrins | 320. Topramezone |
| 279. Pyridaben | 321. Tralkoxydim |
| 280. Pyridalyl | 322. Triadimefon |
| 281. Pyridate | |

- 323. Triadimenol
- 324. Triasulfuron
- 325. Triazophos
- 326. Tribenuron methyl
- 327. Tribufos
- 328. Trichlorfon
- 329. Triclopyr
- 330. Tricyclazole
- 331. Tridemorph
- 332. Trifloxystrobin
- 333. Trifloxysulfuron
- 334. Triflumizole
- 335. Trifluralin
- 336. Triflusulfuron methyl
- 337. Triforine
- 338. Triphenyltin hydroxide (TPTH)
- 339. Triticonazole
- 340. Vamidothion
- 341. Vinclozolin
- 342. Zoxamide

Principles in interpreting MRLs/EMRLs in respect of dried, dehydrated, concentrated, processed or compounded food

When interpreting MRLs/EMRLs listed in the schedules of the proposed Regulation, the following conditions should be taken into account:

- (a) the MRLs/EMRLs shall apply to any food in a dried, dehydrated or concentrated form with adjustment determined with respect to the weight of the food after dilution or reconstitution, where appropriate;
- (b) apart from food in a dried, dehydrated or concentrated form, the MRLs/EMRLs shall apply equally to primary food commodities and processed food;
- (c) any compounded food may contain any pesticide residue if the proportion of the pesticide residue present in the compounded food does not exceed, in relation to the quantity of the relevant food used, the level permitted by the MRLs/EMRLs.

**Preliminary List of Exempted Substances
to be Included in the Proposed Regulation
(Note: The list is being updated and subject to change)**

Chemical pesticides

Inorganics

1. Ammonium, potassium and sodium salts of bicarbonate
2. Calcium and sodium salts of carbonate
3. Calcium oxide
4. Ferric phosphate (Iron (III) phosphate)
5. Lime sulphur (calcium polysulphide)
6. Potassium dihydrogen phosphate
7. Potassium tri-iodide
8. Sodium aluminum silicate
9. Sodium hypochlorite
10. Sulphur

Organics

11. 1,4-Diaminobutane
12. 6-Benzyladenine
13. Acetophenone
14. Ammonium acetate
15. Fatty acid C7-C20
16. Fatty alcohols/aliphatic alcohols
17. Gamma aminobutyric acid
18. Indole-3-butyric acid
19. Iron-EDTA complex
20. Lactic acid
21. Lysophosphatidylethanolamine
22. Methyl anthranilate
23. Methyl nonyl ketone
24. Mineral oil
25. Monocarbamide dihydrogen sulphate (urea sulphate)
26. Peracetic acid

27. Poly-N-acetyl-D-glucosamine
28. Protein hydrolysate
29. Rhamnolipid biosurfactant
30. Sodium and potassium salts of o-nitrophenolate and p-nitrophenolate
31. Sorbitol octanoate
32. Sucrose octanoate esters
33. Trimethylamine hydrochloride
34. Yeast extract hydrolysate from *Saccharomyces cerevisiae*

Pheromones

35. (E)-8-Dodecenyl acetate
36. (E,E) 8,10-Dodecadien-1-ol
37. (Z)-8-Dodecenol
38. (Z)-8-Dodecenyl acetate
39. E-11-tetradecen-1-yl-acetate
40. 3,7,11-Trimethyl-1,6,10-dodecatriene-1-ol (Farnesol) and
3,7,11-trimethyl-2,6,10-dodecatriene-3-ol (Nerolidol)

Plant materials / derivatives

41. Alder bark
42. Capsaicin
43. Cinnamaldehyde
44. Clove oil
45. Cytokinins
46. Extract from tea tree
47. Extract of *Chenopodium ambrosioides* near *ambrosioides*
48. Garlic extract
49. Geraniol
50. Lecithins, soya
51. Neem oil
52. Extract from *Opuntia lindheimeri*, *Quercus falcata*, *Rhus aromatica*
and *Rhizophora mangle*
53. Extract from *Quillaja saponaria* (saponins)
54. Rotenone
55. Seaweed extracts
56. Tall oil

Non-chemical Pesticide

Bacteria

57. *Bacillus cereus* strain BPO1
58. *Bacillus pumilus* strain QST 2808
59. *Bacillus subtilis* strains GB03, MBI 600 and QST 713
60. *Bacillus thuringiensis*
61. *Pseudomonas chlororaphis* strains 63-28 and MA342
62. *Streptomyces lydicus* strain WYEC 108

Fungi

63. *Alternaria destruens* strain 059
64. *Ampelomyces quisqualis* isolate M10 and strain AQ10
65. *Beauveria bassiana* strain GHA
66. *Coniothyrium minitans* strain CON/M/91-08
67. *Gliocladium catenulatum* strain J1446
68. *Muscodor albus* strain QST 20799 and the volatiles produced on rehydration
69. *Paecilomyces fumosoroseus* Apopka strain 97
70. *Paecilomyces lilacinus* strain 251
71. *Pseudozyma flocculosa* strain PF-A22 UL
72. *Pythium oligandrum* strain DV 74
73. *Trichoderma asperellum* strain ICC 012
74. *Trichoderma gamsii* strain ICC 080
75. *Trichoderma harzianum* Rifai strains T-22 and T-39

Protozoans

76. *Nosema locustae*

Viruses

77. Inclusion bodies of the multi-nuclear polyhedrosis virus of *Anagrapha falcifera*
78. Indian meal moth granulosis virus
79. Occlusion bodies of the granulosis virus of *Cydia pomonella*
80. *Spodoptera exigua* nuclear polyhedrosis virus

