CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 8(b)

CX/PR 11/43/8
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON PESTICIDE RESIDUES

43rd Session
Beijing, P.R. China, 4 - 9 April 2011

PROPOSED DRAFT ADDENDA TO THE DRAFT PRINCIPLES AND GUIDANCE FOR THE SELECTION OF REPRESENTATIVE COMMODITIES FOR THE EXPOLATION OF MAXIMUM RESIDUE LIMITS FOR PESTICIDES FOR COMMODITY GROUPS

(At Step 3)

(Prepared by the Netherlands and the United States of America)

This item should be considered jointly with Agenda Item 8(a). Governments and interested international organizations wishing to submit comments on the Addenda (see Annex) are invited to do so in writing to: Ms. Duang Lifang, Institute for the Control of Agrochemicals, Ministry of Agriculture (ICAMA), P.R China, Fax: +86-10-59194252, Email: ccpr@agri.gov.cn with a copy to: Secretariat, Codex Alimentarius Commission, Joint WHO/FAO Food Standards Programme, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy, by Email codex@fao.org or Fax: +39-06-5705-4593 by 15 March 2011.

BACKGROUND

Background information including a brief explanation of the major changes is given under Agenda Item 8(a) (see CX/PR 11/43/7).

ANNEX

Addenda to the Draft Principles and Guidance on the Selection of Representative Commodities for the Extrapolation of MRLs to Commodity Groups

ADDENDUM I, Detailed Justification

A. Citrus Fruits

Proposed representative commodities for Group 001 Citrus Fruits from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Group 001 Citrus Fruits	Lemon or Lime; Mandarin; Orange and Pummelo or Grapefruit	Citrus Fruit (FC 0001): Australina blood lime; Australian desert lime; Australian round lime; Bergamot; Bigarade; Blood orange; Brown River finger-lime; Calamondin; Chinotto; Chironja; Citron; Clementine; Cleopatra mandarin; Dancy mandarin; Grapefruit; Kaffir Lime; King mandarin; Lemon; Lime; Lime, Sweet; Malta orange; Mandarin; Mediterranean mandarin; Mexican Lime; Mount White-lime; Myrtle-leaf orange; Natsudaidai; New guinea wild lime; Orange, Bitter; Orange Sour; Orange, Sweet; Pomelo; Pummelo; Russell River-lime; Satsuma mandarin; Seville Orange; Shaddock; Tachibana orange; Tahiti Lime; Tangelo (small and medium cultivars); Tangelo (large size cultivars); Tangelodo; Tangerine; Tangors; Tankan mandarin; Trifoliate orange; Ugli/Uniq Fruit; Unshu orange; Willowleaf mandarin; Yuzu;
Subgroup 001A, Lemons and Limes	Lemon or Lime	Lemons and Limes (FC 0002): Australina blood lime; Australian desert lime; Australian round lime; Brown River finger-lime; Citron; Kaffir Lime; Lemon; Lime; Lime, Sweet; Mexican Lime; Mount White-lime; New guinea wild lime; Russell River-lime; Tahiti Lime; Yuzu
Subgroup 001B, Mandarin	Mandarin	Mandarins (FC 003): Calamondin; Clementine; Cleopatra mandarin; Dancy mandarin; King mandarin; Mandarin; Mediterranean mandarin; Satsuma mandarin; Tangelo (small and medium size cultivars); Tangerine; Tangors; Tankan mandarin; Unshu orange; Willowleaf mandarin
Subgroup 001C, Oranges, Sweet, Sour	Orange	Oranges, Sweet, Sour (FC 004): Bergamot; Bigarade; Blood orange; Chinotto; Chironja; Malta orange; Myrtle-leaf orange; Orange, Bitter; Orange Sour; Orange, Sweet; Seville Orange; Tachibana orange; Trifoliate orange
Subgroup 001D, Pummelos	Pummelo or Grapefruit	Pummelos and Grapefruit (FC 005): Grapefruit; Natsudaidai; Pomelo; Pummelo; Shaddock; Tangelo (large size cultivars); Tangelodo; Ugli/Uniq Fruit

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

A.1. Introduction – Citrus Fruits

Citrus fruits are all members of the family *Rutaceae*. The family *Rutaceae or Rue* family has six subfamilies of which the orange family is contained in the *Aurantioideae*. Within this subfamily is the tribe *Citrinae* of which there are three closely related genera, the *Citrus*, *Fortunell*a, and the *Poncirus*. The genera *Microcitrus* and *Eremocitrus* are genera native from Australia. There are over 100 genera and 200 species in the *Rutaceae* family.

Citrus fruits are grown worldwide in arid subtropical and humid tropical areas with adequate moisture and suitable soils and lack of frost. All citrus are produced on relatively small, evergreen trees or tall shrubs. Grapefruit trees are the largest, and limes the smallest stature trees of the group. Stems are often armed with long thorns, particularly the limes, and in all types when young. Citrus trees normally take four years before they can set fruit. All citrus are injured by winter temperatures below about -4 °C.

The fruit of the citrus are so important that they have received a special name - a hesperidium. A hesperidium is basically a leathery rinded berry. This fruit is unique to five genera in the Rutaceae family. These genera are: *Citrus, Fortunella, Poncirus, Microcitrus*, and *Clymenia*. Each segment is composed of juice vesicles ("pulp"), with long stalks attached to the outer wall, containing juice, which may vary from sweet to very acid. The citrus fruits can range in size from < 2.5 cm for calamondin and kumquats to more than 12 – 18 cm diameter for grapefruit and up to 30 cm for pummelo and some citrons.

All citrus fruits will cross or hybridize with each other producing literally hundreds of cultivars and hybrids. Many such crosses have been made by plant breeders and some have originated by chance. As a result, we now have in commerce Mandarin orange x grapefruit crosses called tangelos, sweet orange x Mandarin crosses called tangor, and others. There are also hybrids among Citrus species and between *Citrus, Eremocitrus, Microcitrus,* and *Poncirus* or *Fortunella*, that have been produced either naturally or through controlled breeding.

Four subgroups are proposed for Group 001 Citrus Fruits: (1) Subgroup 001A, Lemons and Limes; (2) Subgroup 001B, Mandarin; (3) Subgroup 001C, Orange, Sweet and Sour and (4) Subgroup 001D Pummelos and Grapefruit.

A.2. Production and/or Consumption– Citrus Fruits:

Citrus fruits are the largest fruit crop produced in the world and are widespread in their distribution throughout the world. Based on FAO agriculture statistics, the total hectare for citrus fruits has increased from 6,733,019 ha in 1995 to 7,605,363 in 2005 and the total production has increased from 93,799,450 Mt (metric ton) in 1995 to 105,431,984 Mt in 2005 as the world total (FAO 2005). Worldwide, the orange is by far the most harvested citrus at 47% followed by lemon and limes at 10.6% and by grapefruit at 3.5%. The average yields in Mt/ha for the major citrus fruits is 13.96 for grapefruit, 15.5 for lemon, and 16.6 for oranges. In the Mediterranean climates in Spain, Italy, and California, production of lemons dominates; whereas in the tropical and subtropical regions of Mexico, Brazil, and Florida, lime production dominates. Production (hectares) and yield (metric tonne) for major production regions are shown in Table 2 (FAO Statistics). FAO only reports the production of the proposed representative commodities of lemon or lime (Subgroup 001A); mandarins (Subgroup 001B); orange, (Subgroup 001C) and grapefruit including pomelos (Subgroup 001D).

Table 2. Production of Major Citrus Fruits by Country and Region in 2008 (FAO)

Countries / Regions	Lemons and Limes (proposed representative commodities, 001A)	Tangerines, Mandarins & Clementines (proposed representative commodities, 001B)	Oranges (proposed representative commodity, 001C)	Grapefruit (Including Pomelos) (proposed representative commodities, 001D)	Citrus Fruit, Total
Africa	82,231 Ha 861,513 Tonnes	150,559 Ha 1,566,425 Tonnes	529,864 Ha 6,323,916 Tonnes	36,186 Ha 610,699 Tonnes	1,636,395 Ha 13,436,463 Tonnes
Asia	509,590 Ha 5,390,286 Tonnes	1,627,762 Ha 21,990,011 Tonnes	1,510,679 Ha 18,820,424 Tonnes	110,722 Ha 1,480,467 Tonnes	3,928,636 Ha 50,246,488 Tonnes
Australia	1,600 Ha 35,915 Tonnes	4,200 Ha 94,364 Tonnes	22,000 Ha 409,273 Tonnes	725 Ha 10,475 Tonnes	28,660 Ha 551,727 Tonnes
Central America	158,762 Ha 2,419,369 Tonnes	33,102 Ha 474,858 Tonnes	423,816 Ha 5,404,161 Tonnes	21,772 Ha 485,310 Tonnes	670,982 Ha 8,952,098 Tonnes
Japan	380 Ha 5,250 Tonnes	49,400 Ha 1,066,000 Tonnes	4,350 Ha 65,000 Tonnes	NA	63,130 Ha 1,292,250 Tonnes
Europe	88,480 Ha 1,309,277 Tonnes	176,973 Ha 3,259,006 Tonnes	318,205 Ha 6,886,400 Tonnes	2,477 Ha 60,078 Tonnes	590,067 Ha 11,556,782 Tonnes
New Zealand	332 Ha 5,100 Tonnes	780 Ha 7,900 Tonnes	681 Ha 8,800 Tonnes	41 Ha 1,000 Tonnes	2,634 Ha 31,300 Tonnes
North America	23,877 Ha 561,550 Tonnes	16,390 Ha 478,090 Tonnes	268,350 Ha 9,140,790 Tonnes	33,751 Ha 1,404,320 Tonnes	344,472 Ha 11,646,440 Tonnes
South America	139,326 Ha 2,857,694 Tonnes	124,244 Ha 2,116,690 Tonnes	1,037,538 Ha 21,094,956 Tonnes	21,152 Ha 325,801 Tonnes	1,375,309 Ha 27,221,184 Tonnes
United States	23,877 Ha 561,550 Tonnes	16,390 Ha 478,090 Tonnes	268,350 Ha 9,140,790 Tonnes	33,751 Ha 1,404,320 Tonnes	344,472 Ha 11,646,440 Tonnes
World Total	1,019,231 Ha 13,522,634 Tonnes	2,139,426 Ha 30,035,799 Tonnes	4,176,254 Ha 685,599,338 Tonnes	250,997 Ha 4,663,384 Tonnes	8,688,258 Ha 124,578,224 Tonnes

A.3. Residue Tolerances – Citrus Fruits:

The citrus fruit are mostly medium to large fruits with the peel nearly always discarded when consumed or processed. Citrus fruits will have minimum exposure of the edible portions to direct contact to pesticides. The lime has somewhat greater exposure of edible parts to pesticides because of greater surface area in proportion to weight. One would expect pesticide residues to be similar in most of the members of the Citrus fruit crop group, and distinct citrus fruit crop subgroups may be based on potential of residue to be deposited on the fruit. The majority of the established US, Codex and EU tolerances are based on "groups" (see Table 3).

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Lemon (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Lime (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Citron (ppm) (Proposed Member Commodity, Lemon and Limes, Subgroup 001A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	3	1	1	3	1	1	3	1	1
Abamectin	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01
Acequinocyl	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Acetamiprid	0.5	---	1	0.5	---	1	0.5	---	1
Aldicarb	0.3	0.2	0.02	0.3	0.2	0.02	--	--	--
Azoxystrobin	10	15	15	10	15	15	10	15	15
Beta-cyfluthrin	0.2	0.3	---	0.2	0.3	---	0.2	0.3	---
Bifenthrin	0.05	0.05	0.1	0.05	---	0.1	0.05	---	0.1
Boscalid	1.6	---	0.05	1.6	---	0.05	1.6	---	0.05
Bromacil	0.1	---	---	0.1	---	---	0.1	---	---
Buprofezin	2.5	1	1	2.5	1	1	2.5	1	1
Carbaryl	10	15	0.05	10	15	0.05	10	15	0.05
Carbon disulfide	0.1	---	5						
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.4	---	0.01	1.4	---	0.01	1.4	---	0.01
Chlorpyrifos	1	1	0.2	1	1	0.3	1	1	0.2
Cryolite	7	---	---	7	---	---	7	---	---
Cyfluthrin	0.2	0.3	0.02	0.2	0.3	0.02	0.2	0.3	0.02
Cyprodinil	0.6	---	0.05	0.6	---	0.05			
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Dicofol	6	5	2	6	5	2	6	5	2
Difenoconazole	0.6	---	0.1	0.6	---	0.1	0.6	---	0.1
Diflubenzuron	0.8	0.5	1	--	--	--	--	--	--
Dimethoate	2	5	0.02	--	--	--	--	--	--
Diuron	0.5	---	0.1	0.05	---	0.1	0.05	---	0.1
EPTC	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Fenbuconazole	1	---	0.05	1	---	0.05	1	---	0.05
Fenbutatin-oxide	20	5	5	20	5	5	20	5	5
Fenpropathrin	2	---	2	2	---	2	2	---	2
Fenpyroximate	0.6	---	0.3	0.6	---	0.3	0.6	---	0.3
Ferbam	4	---	---	4	---	---	4	---	---
Fludioxonil	10	7	7	10	7	7	10	7	7
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Lemon (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Lime (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Citron (ppm) (Proposed Member Commodity, Lemon and Limes, Subgroup 001A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Formetanate hydrochloride	0.6	---	(0.05	0.03	---	0.05	--	--	--
Fosetyl-Al	5	---	75	5	---	75	5	---	75
Glyphosate	0.5	---	0.1	0.5	---	0.1	0.5	---	0.1
Hexythiazox	0.35	0.5	1	0.35	0.5	1	0.35	0.5	1
Hydrogen Cyanide	50	---	---	50	---	---	50	---	---
Imazalil	10	5	5	10	5	5	10	5	5
Imidacloprid	0.7	1	1	0.7	1	1	0.7	1	1
Inorganic bromide[1]	30	30	30	30	30	30	30	30	30
Malathion	8	7	0.02	8	7	0.02			
Metalaxyl	1	5	0.5	1	5	0.5	1	5	0.5
Metaldehyde	0.26	---	0.05	0.26	---	0.05	0.26	---	0.05
Methanearsonic acid	0.35	---	---	0.35	---	---	0.35	---	----
Methidathion	4	2	5	4	2	5	4	2	5
Methomyl	2	1	1						
Methoxyfenozide	10	0.7	1	10	0.7	1	10	0.7	1
Naled	3	---	---						
Norflurazon	0.2	---	---	0.2	---	---	0.2	---	---
O-phenylphenol	10	10	---	10	10	---	10	10	---
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxamyl	3	5	0.01	3	5	0.01	3	5	0.01
Paraquat dichloride	--	--	--	0.05	0.02	0.02	0.05	0.02	0.02
Oxydemeton-methyl	1	0.2	0.02	--	--	--	--	--	--
Paraquat dichloride	0.05	0.02	0.02	--	--	--	--	--	--
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Phosmet	5	3	0.2	5	3	0.2	5	3	0.2
Phosphine	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Propargite	5	3	3						
Pyraclostrobin	2	1	1	2	1	1	2	1	1
Pyridaben	0.5	---	0.5	0.5	---	0.5	0.5	---	0.5
Pyrimethanil	11	7	10	10	7	10	10	7	10
Pyriproxyfen	0.3	0.5	0.6	0.3	0.5	0.6	0.3	0.5	0.6
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.5	---	0.1	0.5	---	0.1	0.5	---	0.1
Simazine	0.25	---	0.1						
Spinetoram	0.3	---	0.2	0.3	---	0.2	0.3	---	0.2
Spinosad	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Spirodiclofen	0.5	0.4	0.5	0.5	0.4	0.1	0.5	0.4	0.5
Spirotetramat	0.6	0.5	1	0.6	0.5	1	0.6	0.5	1
Tebufenozide	0.8	2	2	0.8	2	2	0.8	2	2

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Lemon (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Lime (ppm) (Proposed Representative Commodity, Lemon and Limes, Subgroup 001A)			Citron (ppm) (Proposed Member Commodity, Lemon and Limes, Subgroup 001A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Thiabendazole	10	7	5	10	7	5	10	7	5
Thiamethoxam	0.4	---	0.2	0.4	---	0.2	0.4	---	0.2
Trifloxystrobin	0.6	0.5	0.3	0.6	0.5	0.3	0.6	0.5	0.3
Trifloxysulfuron	0.03	---	---	0.03	---	---	0.03	---	---
Trifluralin	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Zeta-Cypermethrin	0.35	2	2	0.35	2	2	0.35	2	2

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Tangerine (ppm) (Proposed Representative Commodity, Mandarin, Subgroup 001B)			Tangelo (ppm) (Proposed Member Commodity, Mandarin, Subgroup 001B)		
Compound	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.1	---	0.05	--	--	--
1-Naphthaleneacetic acid	0.1	---	0.05	--	--	--
2,4-D	3	1	1	3	1	1
Abamectin	0.02	0.01	0.01	0.02	0.01	0.01
Acequinocyl	0.2	---	0.4	0.2	---	0.2
Acetamiprid	0.5	---	1	0.5	---	1
Azoxystrobin	10	15	15	10	15	15
Beta-cyfluthrin	0.2	0.3	---	0.2	0.3	---
Bifenthrin	0.05	---	0.1	0.05	---	0.1
Boscalid	1.6	---	0.05	1.6	---	0.05
Bromacil	0.1	---	---	0.1	---	---
Buprofezin	2.5	1	1	2.5	1	1
Carbaryl	10	15	0.05	10	15	0.05
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.4	---	0.01	1.4	---	0.01
Chlorpyrifos	1	1	2	1	1	0.3
Cryolite	7	---	---	7	---	---
Cyfluthrin	0.2	0.3	0.02	0.2	0.3	0.02
D-Phenothrin	0.01	--	0.05	0.01	---	0.05
Dicofol	6	5	2	6	5	2
Difenoconazole	0.6	---	0.1	0.6	---	0.1
Diflubenzuron	0.5	0.5	1	--	--	--
Dimethoate	2	5	0.02	--	--	--
Diuron	0.05	---	0.1	0.05	---	0.1
EPTC	0.1	---	0.05	0.1	---	0.05
Fenbuconazole	1	---	0.05	1	---	1
Fenbutatin-oxide	20	5	5	20	5	5
Fenpropathrin	2	---	2	2	---	2
Fenpyroximate	0.6	---	0.3	0.6	---	0.5
Ferbam	4	10	---	4	10	---
Fludioxonil	10	7	7	10	7	10
Fluridone	0.1	---	---	0.1	---	---
Formetanate hydrochloride	0.03	---	0.05	0.03	---	0.05
Fosetyl-Al	5	---	75	5	---	75
Glyphosate	0.5	---	0.5	0.5	---	0.1
Hexythiazox	0.35	0.5	1	0.35	0.5	1
Hydrogen Cyanide	50	---	---	50	---	---
Imazalil	10	5	5	10	5	5

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Tangerine (ppm) (Proposed Representative Commodity, Mandarin, Subgroup 001B)			Tangelo (ppm) (Proposed Member Commodity, Mandarin, Subgroup 001B)		
Compound	US	Codex	EU	US	Codex	EU
Imidacloprid	0.7	1	1	0.7	1	1
Inorganic bromide[1]	30	30	30	--	--	--
Malathion	8	7	0.02	--	--	--
Metalaxyl	1	5	0.5	1	5	0.5
Metaldehyde	0.26	---	0.05	0.26	---	0.05
Methanearsonic acid	0.35	---	---	0.35	---	---
Methidathion	6	5	5	4	5	5
Methomyl	2	1	1	--	--	--
Methoxyfenozide	10	0.7	1	10	0.7	1
Naled	3	---	---	--	--	--
Norflurazon	0.2	---	---	0.2	---	---
O-phenylphenol	10	10	---	10	10	---
Oryzalin	0.05	---	0.01	0.05	---	0.01
Oxamyl	3	5	0.02	3	5	0.01
Paraquat dichloride	0.05	0.02	0.02	0.05	0.02	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05
Phosmet	5	3	0.2	5	3	(0.2
Phosphine	0.01	---	0.05	0.01	---	0.05
Pyraclostrobin	2	1	1	2	1	1
Pyridaben	0.5	---	0.5	0.5	---	0.5
Pyrimethanil	10	7	10	10	7	10
Pyriproxyfen	0.3	0.5	0.6	0.3	0.5	0.6
Rimsulfuron	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---
Sethoxydim	0.5	---	0.1	0.5	---	0.1
Spinetoram	0.3	---	0.2	0.3	---	0.2
Spinosad	0.3	0.3	0.3	0.3	0.3	0.3
Spirodiclofen	0.5	0.4	0.1	0.5	0.4	0.5
Spirotetramat	0.6	0.5	1	0.6	0.5	1
Tebufenozide	0.8	2	2	0.8	2	2
Thiabendazole	10	7	5	10	7	5
Thiamethoxam	0.4	---	0.2	0.4	---	0.2
Trifloxystrobin	0.6	0.5	0.3	0.6	0.5	0.3
Trifloxysulfuron	0.03	---	---	0.03	---	---
Trifluralin	0.05	---	0.1	0.05	---	0.1
Zeta-Cypermethrin	0.35	2	2	0.35	2	2

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Orange (ppm) (Proposed Representative Commodity, Orange, Subgroup 001C)			Pummelo (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)			Grapefruit (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.1	---	0.05	--	--	--	--	--	--
1-Naphthaleneacetic acid	0.1	---	0.05	--	--	--	--	--	--
2,4-D	3	1	1	3	1	(1	3	1	1
Abamectin	0.02	0.01	0.01	--	--	--	0.02	0.01	0.01
Acequinocyl	0.2	---	0.4	0.2	---	0.2	0.2	---	0.2
Acetamiprid	0.5	---	1	0.5	---	1	0.5	---	1
Aldicarb	0.3	0.2	0.02				0.3	0.2	0.02
Azoxystrobin	10	15	15	10	15	15	10	15	15
Beta-cyfluthrin	0.2	0.3	---	0.2	0.3	---	0.2	0.3	---
Bifenthrin	0.05	0.05	0.1	0.05	---	0.1	0.05	0.05	0.1
Boscalid	1.6	---	0.05	1.6	---	0.05	1.6	---	0.05
Bromacil	0.1	---	---	--	--	--	0.1	---	---
Buprofezin	2.5	1	1	2.5	1	(1	2.5	1	1
Carbaryl	10	15	0.05	10	15	0.05	10	15	0.05
Carbon disulfide	0.1	---	5	--	--	--	0.1	---	5
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.4	---	0.01	1.4	---	0.01	1.4	---	0.01
Chlorpyrifos	1	1	0.3	1	1	0.3	1	1	0.3
Cryolite	7	---	---	7	---	---	7	---	---
Cyfluthrin	0.2	0.3	0.02	0.2	0.3	0.02	0.2	0.3	0.02
d-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Dicofol	6	(5	2	6	5	(2	6	5	2
Difenoconazole	0.6	---	0.1	0.6	---	0.1	0.6	---	0.1
Diflubenzuron	0.5	0.5	1	0.5	0.5	1			
Dimethoate	2	5	0.02	--	--	--	2	5	0.02
Diuron	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
EPTC	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Fenbuconazole	1	---	1	1	---	1	1	---	1
Fenbutatin-oxide	20	5	5	20	5	5	20	5	5
Fenpropathrin	2	---	2	2	---	2	2	---	2
Fenpyroximate	0.6	0.2	0.5	0.6	---	0.5	0.6	---	0.5
Ferbam	4	2	---	4	---	---	4	---	---
Fludioxonil	10	7	7	10	7	10	10	7	10
Fluridone	0.1	---	---	--	--	--	0.1	---	---
Formetanate hydrochloride	1.5	---	0.05	--	--	--	1.5	---	0.05
Fosetyl-Al	5	---	75	5	---	75	5	---	75
Glyphosate	0.5	---	0.5	0.5	---	0.1	0.5	---	0.1

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Orange (ppm) (Proposed Representative Commodity, Orange, Subgroup 001C)			Pummelo (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)			Grapefruit (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Hexythiazox	0.35	0.5	1	0.35	0.5	1	0.35	0.5	1
Hydrogen Cyanide	50	---	---	50	---	---	50	---	---
Imazalil	10	5	5	--	--	--	10	(	5
Imidacloprid	0.7	1	1	0.7	1	1	0.7	1	1
Inorganic bromide[1]	30	30	30	--	--	--	30	30	30
Malathion	8	7	0.02	--	--	--	8	7	0.02
Metalaxyl	1	5	0.5	--	--	--	1	5	0.5
Metaldehyde	0.26	---	0.05	0.26	---	0.05	0.26	---	0.05
Methanearsonic acid	0.35	---	---				0.35	---	---
Methidathion	4	2	5	4	---	5	4	(2	5
Methomyl	2	(1	0.5				2	1	0.5
Methoxyfenozide	10	0.7	1	10	0.7	1	10	0.7	1
N, N-diethyl-2-(4-methylbenzyloxy) ethylamine dydrochloride	0.01	---	---	--	--	--	--	--	--
Naled	3	---	---	--	--	--	3	---	---
Norflurazon	0.2	---	---	--	--	--	0.2	---	---
O-phenylphenol	10	10	---	--	--	--	10	10	---
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxamyl	3	5	0.01	3	5	0.01	3	5	0.01
Oxydemeton-methyl	1	---	0.02	--	--	--	1	---	0.02
Paraquat dichloride	0.05	0.02	0.02	0.05	0.02	0.02	0.05	0.02	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Phosmet	5	3	0.2	5	3	0.2	5	3	0.2
Phosphine	0.01	---	0.05	--	--	--	0.01	---	0.05
Piperonyl Butoxide	8	5	---	--	--	--			
Propargite	10	3	3	--	--	--	5	3	3
Pyraclostrobin	2	1	1	2	1	1	2	1	1
Pyrethrins	1	0.05	1	--	--	--			
Pyridaben	0.5	---	0.5	--	--	--	0.5	---	0.5
Pyrimethanil	10	7	10	10	7	10	10	7	10
Pyriproxyfen	0.3	0.5	0.6	--	--	--	0.3	0.5	0.6
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.5	---	0.1	0.5	---	0.1	0.5	---	0.1
Simazine	0.25	---	0.1	--	--	--	0.25	---	0.1
Spinetoram	0.3	0.07	0.2	0.3	---	0.2	0.3	---	0.2
Spinosad	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 3. Residue Tolerances established on Citrus Fruits Group 001
(FASonline: mrldatabase.com; MRLs as of October 27, 2010)

	Orange (ppm) (Proposed Representative Commodity, Orange, Subgroup 001C)			Pummelo (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)			Grapefruit (ppm) (Proposed Representative Commodity, Pummelo or Grapefruit Subgroup 001D)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Spirodiclofen	0.5	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.5
Spirotetramat	0.6	0.5	1	0.6	0.5	1	0.6	0.5	1
Tebufenozide	0.8	2	2	0.8	2	2	0.8	2	2
Thiabendazole	10	7	(5	10	7	5	10	7	5
Thiamethoxam	0.4	---	0.2	0.4	---	0.2	0.4	---	0.2
Thiazopyr	0.05	---	---	--	--	--	0.05	---	---
Trifloxystrobin	0.6	0.5	0.3	0.6	0.5	0.3	0.6	0.5	0.3
Trifloxysulfuron	0.03	---	---	0.03	---	---	0.03	---	---
Trifluralin	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Zeta-Cypermethrin	0.35	2	2	0.35	2	2	0.35	2	2

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

A.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Citrus Fruits:

Given the fact that all commodities included in this group are from the same botanical family and are similar in plant morphology, the cultural practices for producing these commodities also have a lot of similarities. They are widely grown in temperate, subtropical or tropical climates, and are among the most popular fruits for consumers in all world regions.

The fact that most of these citrus fruits are in the same botanical family with similar biological and cultural aspects indicates they should also encounter similar pest problems, hence have similar needs for pest control products with similar use patterns. The most important pest problems associated with this group of commodities are diseases including post-harvest diseases, as well as insects and mites. Insect and mites include the Caribbean and Mediterranean fruit flies, citrus bud mite, citrus rust mite, scales, and ants. Citrus diseases include scab, branch knot, leaf spot, algal leaf spot, tar spot, oil spotting, lime blotch, anthracnose, gummosis, heart rot, damping-off, seedling blight, *Fusarium oxysporum*, citrus canker and several viruses including crinkly leaf virus, psorosis, tristeza, and xyloporosis.

Citrus fruits in Group 001 are processed into pulp, dried oil and juice. Peels may be dried and used as livestock feed particularly the orange and grapefruit.

A.5. Conclusion – Citrus Fruits:

Representative commodities (Lemon or Lime; Mandarin; Orange and Pummelo or Grapefruit) for Group 001 Citrus Fruits were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

The proposed representative commodities (lemon or lime, mandarin, orange and pummel or grapefruit) are the most widely produced and consumed citrus commodities throughout the world (see Table 2). These commodities would also well represent the processed commodities of dried pulp, citrus oil and citrus juice.

(2) A representative commodity should be likely to contain the highest residues:

The citrus fruit are mostly medium to large fruits with the peel nearly always discarded when consumed or processed. Citrus fruits will have minimum exposure of the edible portions to direct contact to pesticides. The lime has somewhat greater exposure of edible parts to pesticides because of greater surface area in proportion to weight. One would expect pesticide residues to be similar in most of the members of the Citrus fruit crop group, and distinct citrus fruit crop subgroups may be based on potential of residue to be deposited on the fruit. The majority of the established US, Codex and EU tolerances are based on “groups” (see Table 3).

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

Citrus fruits are widely grown in temperate, subtropical or tropical climates, and are among the most popular fruits for consumers in all world regions. The fact that most of these citrus fruits are in the same botanical family with similar biological and cultural aspects indicates they should also encounter similar pest problems, hence have similar needs for pest control products with similar use patterns.

B. Pome Fruits

Proposed representative commodities for Group 002 Pome Fruits from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1]	Extrapolation to the following commodities:
Group 002 Pome Fruits	Apple and Pear	Pome Fruit (FP 0009): Apple; Azarole; Chinese quince; Crab-apple; Japanese medlar; Loquat; Mayhaw; Medlar; Nashi pear; Pear; Oriental pear; Quince; Sand pear; Tejocote; Wild pear

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

B.1. Introduction – Pome Fruits

The Group 002 Pome Fruits consist of commodities in the genera *Malus*, *Chaenomeles, Crataegus, Cydonia, Eriobotrya*, *Mespilus*, and *Pyrus*, which are all in the *Rosaceae* botanical family. Compared to the many other crop groups, commodities in this group are all closely related since they are all in the same family and they also share similar morphological and cultural characteristics. The pome fruit commodities are temperate season perennial trees grown for edible fruits.

Some “minor” pome fruits commodities have become more popular in some countries and areas today than they were 10 years ago, such as crabapples, mayhaw, and the “orphan” crops medlar and tejocote. Some of these fruits don’t have large commercial production, and thus have little chance to be added to pest control products labels unless they are included in the pome fruit group. Some of these “minor” pome fruits have great potential to be grown on a larger scale in some areas in the future due to their unique nutritional and medicinal values, such as mayhaw (commercial production in China). No subgroups are proposed for the closely related commodities in Group 002.

B.2. Production and/or Consumption – Pome Fruits

Proposed representative commodities of the Pome fruit crop group find widespread distribution throughout the world. Pome fruits are one of the largest fruit crops produced in the world, next to grape, banana, and citrus. Table 4 provides a list of the hectares and production in metric tonnes from various countries and regions that grow apples, pears, and quince. Worldwide, apple is by far the most harvested pome fruit at 74% of the hectares followed by pear at 25%, and by quince at < 1.0%. Asia is the predominant pome fruit producing regions accounting for 56% of apple production, 69% of pear production, and 60% of quince production.

Table 4. Production of Major Pome Fruits by Country and Region in 2008 (FAO)

Country / Regions	Apple (proposed representative commodity, Pome Fruit Group 002)	Pear (proposed representative commodity, Pome Fruit Group 002)	Quince (proposed member commodity, Poome Fruit Group 002)
Australia	20,000 Ha 265,481 Tonnes	7,000 Ha 130,492 Tonnes	NA
Canada	17,808 Ha 426,858 Tonnes	1,095 Ha 9,594 Tonnes	NA
China	2,000,466 Ha 29,851,163 Tonnes	1,258,144 Ha 1,367,681 Tonnes	19,000 Ha 101,000 Tonnes
Japan	39,900 Ha 840,100 Tonnes	16,300 Ha 326,400 Tonnes	40 Ha 300 Tonnes
Mexico	56,939 Ha 524,755 Tonnes	4,500 Ha 27,900 Tonnes	735 Ha 6,473 Tonnes
New Zealand	9,247 Ha 355,000 Tonnes	791 Ha 35,000 Tonnes	70 Ha 1,000 Tonnes
United States	141,880 Ha 4,358,710 Tonnes	23,723 Ha 789,110 Tonnes	NA
Africa	174,101 Ha 2,135,545 Tonnes	62,956 Ha 688,334 Tonnes	5,754 Ha 43,110 Tonnes
Asia	3,102,682 Ha 41,750,390 Tonnes	1,412,619 Ha 15,609,514 Tonnes	44,141 Ha 324,964 Tonnes
Europe	1,131,922 Ha 15,968,634 Tonnes	192,764 Ha 2,963,446 Tonnes	9,712 Ha 67,534 Tonnes
Central America	60,359 Ha 547,156 Tonnes	4,500 Ha 27,900 Tonnes	735 Ha 6,473 Tonnes
South America	137,511 Ha 4,009,680 Tonnes	31,281 Ha 745,445 Tonnes	4,379 Ha 35,732 Tonnes
World Total	4,795,970 Ha 69,819,324 Tonnes	173,6819 Ha 20,999,195 Tonnes	64,791 Ha 478,813 Tonnes

Note: This table reports only the pome fruit available on the FAO website.

B.3. Residue Tolerances – Pome Fruits

The majority of the pome fruits include medium to large fruits with the peel generally discarded in processing, but may be eaten with the fresh fruit. It can be expected that members of the pome fruit group will have similar residue levels based on similarities of the raw agricultural commodity, cultural practices and pest problems. A comparison of established tolerances on pome fruit commodities supports that residue levels will be similar between members of the crop group. See Table 5 for a comparison of US, Codex and EU tolerances. The majority of established US, Codex and EU tolerances are based on "groups". In several cases the US tolerances are the same or higher than those established in the EU and/or in Codex.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Apple (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Pear (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Crabapple (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.15	---	0.1	0.15	---	0.1	0.15	---	0.1
1-Naphthaleneacetic acid	0.15	---	1	0.15	---	1	0.15	---	1
2,4-D	0.05	0.01	0.05	0.05	0.01	0.05	0.05	0.01	0.05
Abamectin	0.02	0.02	0.01	0.02	0.02	0.01			
Acequinocyl	0.4	---	0.1	0.4	---	0.1	0.4	---	0.1
Acetamiprid	1	---	0.1	1	---	0.1	1	---	0.1
Aviglycine	0.08	---	---	0.08	---	---			
Azinphos-methyl	1.5	2	0.05	1.5	2	0.05	1.5	1	0.05)
Beta-cyfluthrin	0.5	0.1	0.2	0.5	0.1	---	0.5	---	0.2
Bifenazate	0.75	0.7	0.01	0.75	0.7	0.01	0.75	0.7	0.01
Bifenthrin				0.5	0.5	0.3			
Boscalid	3	(2	2	3	---	(2	3	---	2
Buprofezin	4	(3	0.5	4	6	0.5	4	---	0.5
Captan	25	15	3	25	15	(3			
Carbaryl	12	---	0.05	12	---	0.05	12	---	0.05
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.2	0.4	0.5	1.2	0.4	0.5	1.2	0.4	0.5
Chlorpyrifos	0.01	1	0.5	0.05	1	0.5			
Clofentezine	0.5	0.5	0.5	0.5	0.5	0.5			
Clothianidin	1	---	0.05	1	---	0.05	1	---	0.05
Cyfluthrin	0.5	0.1	0.2	0.5	0.1	0.2	0.5	---	0.2
Cyprodinil	0.1	0.05	1	0.1	1	1	0.1	---	1
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Deltamethrin	0.2	0.2	0.2	0.2	---	(0.1	0.2	---	0.2
Diazinon	0.5	0.3	0.01	0.5	0.3	0.01			
Dichlobenil	0.5	---	0.2	0.5	---	(0.2			
Dicofol	10	---	0.02	10	---	0.02	10	---	0.02
Difenoconazole	1	0.5	0.5	1	0.5	0.5	1	0.5	0.5
Diflubenzuron				0.5	5	5			
Dimethoate				2	1	0.02			
Diphenylamine	10	10	(5)	5	5	10			
Diuron	0.1	---	0.05	1	---	0.05			
Dodine	5	5	5	5	5	5			
Emamectin	0.025	---	0.02	0.025	---	0.02	0.025	---	0.02

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Apple (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Pear (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Crabapple (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Endosulfan	1	---	0.05	2	---	0.3			
Esfenvalerate	1	---	0.05	1	---	0.05			
Ethephon	5	5	0.6						
Ethoxyquin				3	3	3			
Etoxazole	0.2	---	0.02	0.2	---	0.02	0.2	---	0.02
Fenarimol	0.3	0.3	0.3	0.1	0.3	0.3			
Fenbuconazole	0.4	0.1	0.4						
Fenbutatin-oxide	15	5	2	15	5	2			
Fenhexamid				10	---	0.05			
Fenpropathrin	5	5	0.01	5	5	0.01	5	5	0.01
Fenpyroximate	0.4	0.3	0.2	0.4	---	0.2	0.4	---	(0.2
Ferbam	4	5	---	4	5	---			
Flonicamid	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Flubendiamide	0.7	---	0.01	0.7	---	0.01	0.7	---	0.01
Fludioxonil	5	5	5	5	5	5	5	5	5
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Fluroxypyr	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Flutriafol	0.2	---	0.2						
Forchlorfenuron				0.01	---	0.05			
Formetanate hydrochloride	0.5	---	0.05	0.5	---	0.05			
Fosetyl-Al	10	---	75	10	---	75	10	---	75
Gamma Cyhalothrin	0.3	0.2	---	0.3	0.2	---	0.3	0.2	---
Glufosinate-ammonium	0.05	0.05	0.1						
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Halosulfuron-methyl	0.05	---	0.01						
Hexythiazox	0.25	0.4	1	0.25	0.4	1	0.25	0.4	1
Imidacloprid	0.5	0.5	0.5	0.6	1	0.5	0.6	---	0.5
Indoxacarb	1	0.5	0.5	0.2	0.2	0.3	1	---	0.5
Inorganic bromide[1]	5	20	20	5	20	20			
Kasugamycin	0.05	---	---						
Kresoxim-methyl	0.5	0.2	0.2	0.5	0.2	0.2	0.5	0.2	0.2
Lambda Cyhalothrin	0.3	0.2	0.1	0.3	0.2	0.1	0.3	0.2	0.1
Malathion	8	0.5	0.02	8	---	0.02			
Mancozeb	7	5	5	10	5	5	10	5	5
Maneb	2	5	5						
Metalaxyl	0.2	1	1						
Methidathion	0.05	0.5	0.05	0.05	1	0.05	0.05	---	0.05
Methomyl	1	0.3	0.2	4	0.3	0.2			
Methoxyfenozide	1.5	2	2	1.5	2	2	1.5	2	2
Metiram	2	5	5						
Myclobutanil	0.5	0.5	0.5						
Norflurazon	0.1	---	---	0.1	---	---			
Novaluron	2	3	2	2	3	3	2	3	2
O-phenylphenol	25	---	---	25	20	---			

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Apple (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Pear (ppm) (Proposed Representative Commodity, Pome Fruits Group 002)			Crabapple (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxamyl	2	---	0.01	2	---	0.01			
Oxyfluorfen	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Oxytetracycline	0.35	---	---	0.35	---	---			
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Permethrin	0.05	2	0.05	0.05	2	0.05	0.05	2	0.05
Phosalone	10	2	0.05	10	2	0.05			
Phosmet	10	3	0.2	10	3	0.2	20	3	0.2
Piperonyl Butoxide	8	---	---	8	---	---	8	---	---
Prohexadione calcium	3	---	0.05	3	---	0.05	3	---	0.05
Propyzamide	0.1	---	0.02	0.1	---	0.02			
Pyraclostrobin	1.5	0.5	0.3	1.5	---	0.3	1.5	---	0.3
Pyrethrins	1	---	1	1	---	1	1	---	1
Pyridaben	0.5	---	0.5	0.75	---	0.5			
Pyrimethanil	14	7	5	14	7	5	14	7	5
Pyriproxyfen	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Simazine	0.2	---	0.1	0.25	---	0.1			
Spinetoram	0.2	0.05	0.2	0.2	0.05	0.2	0.2	0.05	0.2
Spinosad	0.2	0.1	1	0.2	---	1	0.2	---	1
Spirodiclofen	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Spirotetramat	0.7	0.7	1	0.7	0.7	1	0.7	0.7	1
Streptomycin	0.25	---	---	0.25	---	---	0.25	---	---
Tebuconazole	0.05	0.5	1	0.05	0.5	1	0.05	0.5	1
Tebufenozide	1	1	1	1.5	(1	1	1.5	1	1
Terbacil	0.3	---	---						
Thiabendazole	5	3	5	5	3	5	5	3	5
Thiacloprid	0.3	0.7	0.3	0.3	0.7	0.3	0.3	0.7	0.3
Thiamethoxam	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Thiophanate-methyl	2	3	0.5	3	3	0.5			
Thiram	7	5	5						
Trifloxystrobin	0.5	0.7	0.5	0.5	0.7	0.5	0.5	0.7	0.5
Triflumizole	0.5	---	0.5	0.5	---	0.5			
Zeta-Cypermethrin	2	0.7	1	2	0.7	1	2	0.7	1
Ziram	7	5	0.1	7	5	1			

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Oriental Pear (ppm) (Proposed Member Commodity, Pome Fruits Group 002)			Quince (ppm) (Proposed Member Commodity, Pome Fruits Group 002)			Loquat (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.15	---	0.1	0.15	---	0.1	0.15	---	0.1
1-Naphthaleneacetic acid	0.15	---	1	0.15	---	0.1	0.15	---	0.1
2,4-D	0.05	0.01	0.05	0.05	0.01	0.05	0.05	0.01	0.05
Acequinocyl	0.4	---	0.1	0.4	---	0.1	0.4	---	0.1
Acetamiprid	1	---	0.1	1	---	0.1	1	---	0.1
Azoxystrobin							2	---	0.05
Beta-Cyfluthrin	0.5	0.1	---	0.5	---	---	0.5	---	0.2
Bifenazate	0.75	0.7	0.01	0.75	0.7	0.01	0.75	0.7	0.01
Boscalid	3	---	2	3	---	2	3	---	2
Buprofezin	4	6	0.5	4	---	0.5	4	---	0.5
Carbaryl	12	---	0.05	12	---	0.05	12	---	1
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.2	0.4	0.5	1.2	0.4	0.5	1.2	0.4	0.5
Clothianidin	1	---	0.05	1	---	0.05	1	---	0.05
Cyfluthrin	0.5	0.1	0.2	0.5	---	0.2	0.5	---	0.2
Cyprodinil				0.1	---	1			
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Deltamethrin	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Dicofol	10	---	0.02	10	---	0.02	10	---	0.02
Difenoconazole	1	0.5	0.5	1	0.5	0.2	1	0.5	0.5
Emamectin	0.025	---	0.02	0.025	---	0.02	0.025	---	0.02
Etoxazole	0.2	---	0.02	0.2	---	0.02	0.2	---	0.02
Fenpropathrin	5	5	0.01	5	5	0.01	5	5	0.01
Fenpyroximate	0.4	---	0.2	0.4	---	0.5	0.4	---	0.5
Flonicamid	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Flubendiamide	0.7	---	0.01	0.7	---	0.01	0.7	---	0.01
Fludioxonil	5	5	5	5	5	5	5	5	5
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fluridone				0.1	---	---			
Fluroxypyr	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fosetyl-Al				10	---	75			
Gamma Cyhalothrin	0.3	0.2	---	0.3	0.2	---	0.3	0.2	---
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Hexythiazox	0.25	0.4	1	0.25	0.4	0.5	0.25	0.4	0.5
Imidacloprid	0.6	1	0.5	0.6	---	0.5	0.6	---	0.5
Indoxacarb	0.2	0.2	0.3	1	---	0.3	1	---	0.3
Inorganic bromide[1]				5	20	20			
Kresoxim-methyl				0.5	0.2	0.2			
Lambda Cyhalothrin	0.3	0.2	0.1	0.3	0.2	0.1	0.3	0.2	0.1
Malathion				8	---	0.02			

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Oriental Pear (ppm) (Proposed Member Commodity, Pome Fruits Group 002)			Quince (ppm) (Proposed Member Commodity, Pome Fruits Group 002)			Loquat (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Mancozeb				10	5	5			
Methidathion	0.05	1	0.05	0.05	---	0.05	0.05	---	0.05
Methoxyfenozide	1.5	2	2	1.5	2	2	1.5	2	2
Novaluron	2	3	3	2	3	0.01	2	3	0.01
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxyfluorfen	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Permethrin	0.05	2	0.05	0.05	2	0.05	0.05	2	0.05
Prohexadione calcium	3	---	0.05	3	---	0.05	3	---	0.05
Pyraclostrobin	1.5	---	0.3	1.5	---	0.3	1.5	---	0.3
Pyrimethanil	14	7	5	14	7	5	14	7	5
Pyriproxyfen				0.2	---	0.2			
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Spinetoram	0.2	0.05	0.2	0.2	0.05	0.2	0.2	0.05	0.2
Spinosad	0.2	---	1	0.2	---	0.5	0.2	---	0.5
Spirodiclofen	0.8	0.8	0.8	0.8	0.8	0.1	0.8	0.8	0.1
Spirotetramat	0.7	0.7	1	0.7	0.7	1	0.7	0.7	1
Streptomycin	0.25	---	---	0.25	---	---	0.25	---	---
Tebuconazole	0.05	0.5	1	0.05	0.5	0.5	0.05	0.5	0.5
Tebufenozide				1.5	1	1			
Thiabendazole	5	3	5	5	3	0.05	5	3	0.05
Thiacloprid	0.3	0.7	0.3	0.3	0.7	0.3	0.3	0.7	0.3
Thiamethoxam	0.2	---	0.2	0.2	---	0.1	0.2	---	0.1
Trifloxystrobin				0.5	0.7	0.5			
Zeta-Cypermethrin	2	0.7	1	2	0.7	1	2	0.7	1
Ziram				7	5	0.1			

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Mayhaw (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU
1-Naphthaleneacetamide	0.15	---	---
1-Naphthaleneacetic acid	0.15	---	---
2,4-D	0.05	---	---
Acequinocyl	0.4	---	---
Acetamiprid	1	---	---
Beta-Cyfluthrin	0.5	---	---
Bifenazate	0.75	---	---
Bifenthrin	1.4	---	---
Boscalid	3	---	---
Buprofezin	4	---	---
Carbaryl	12	---	---
Carfentrazone-ethyl	0.1	---	---
Chlorantraniliprole	0.6	---	---
Clothianidin	1	---	---
Cyfluthrin	0.5	---	---
D-Phenothrin	0.01	---	---
Deltamethrin	0.2	---	---
Dicofol	10	---	---
Difenoconazole	1	---	---
Emamectin	0.025	---	---
Etoxazole	0.2	---	---
Fenpropathrin	5	---	---
Fenpyroximate	0.4	---	---
Flonicamid	0.2	---	---
Flubendiamide	0.7	---	---
Fludioxonil	5	---	---
Flumioxazin	0.02	---	---
Fluroxypyr	0.02	---	---
Gamma Cyhalothrin	0.3	---	---
Glyphosate	0.2	---	---
Hexythiazox	0.25	---	---
Imidacloprid	0.6	---	---
Indoxacarb	1	---	---
Lambda Cyhalothrin	0.3	---	---
Methidathion	0.05	---	---
Methoxyfenozide	1.5	---	---
Myclobutanil	0.7	---	---
Novaluron	2	---	---
Oryzalin	0.05	---	---
Oxyfluorfen	0.05	---	---
Paraquat dichloride	0.05	---	---
Pendimethalin	0.1	---	---

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 5. Residue Tolerances established on Pome Fruits Group 002
(FASonline: mrldatabase.com; MRLs as of November 6, 2010)

	Mayhaw (ppm) (Proposed Member Commodity, Pome Fruits Group 002)		
Compound	US	Codex	EU
Permethrin	0.05	---	---
Prohexadione calcium	3	---	---
Pyraclostrobin	1.5	---	---
Pyrimethanil	14	---	---
Rimsulfuron	0.01	---	---
Saflufenacil	0.03	---	---
Sethoxydim	0.2	---	---
Spinetoram	0.2	---	---
Spinosad	0.2	---	---
Spirodiclofen	0.8	---	---
Spirotetramat	0.7	---	---
Streptomycin	0.25	---	---
Tebuconazole	0.05	---	---
Thiabendazole	5	---	---
Thiacloprid	0.3	---	---
Thiamethoxam	0.2	---	---
Zeta-Cypermethrin	2	---	---

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

B.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Pome Fruits:

Compared to the many other crop groups, commodities in the pome fruit group are all closely related since they are all in the same family/subfamily and share similar morphological, cultural characteristics, and pest problems. In botany, a pome is a type of fruit produced by flowering plants in the Subfamily Maloideae of the family Rosaceae. A special fruit type is given to apple and related fruits - the pome. The subfamily Maloideae includes apple, pear, Chinese quince, quince, loquat, medlar, mayhaw, and tejocote.

The members of this crop group have similar uses, and all are consumed fresh or consumed cooked or raw in various recipes including salads, jellies, and juices. They can also be used fresh or in a dehydrated form. Some of these pome fruits also have medicinal properties. The fact that these pome fruits are in the same family with similar biological and cultural aspects suggests they should also encounter similar pest problems and hence have similar needs for pest control products in similar use patterns. Apples are processed into juice and wet pomace and wet pomace is used as a livestock feed item.

B.5. Conclusion – Pome Fruits

Proposed representative commodities (apple or pear) for Group 002 Pome Fruits were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

Proposed representative commodities of the Pome fruit crop group find widespread distribution throughout the world. Pome fruits are one of the largest fruit crops produced in the world, next to grape, banana, and citrus. Table 4 provides a list of the hectares and production in metric tons from various countries and regions that grow apples, pears, and quince. Worldwide, apple is by far the most harvested pome fruit at 74% of the hectares followed by pear at 25%, and by quince at < 1.0%. Asia is the predominant pome fruit producing regions accounting for 56% of apple production, 69% of pear production, and 60% of quince production.

(2) A representative commodity should be likely to contain the highest residues:

The majority of the pome fruits include medium to large fruits with the peel generally discarded in processing, but may be eaten with the fresh fruit. It can be expected that members of the pome fruit group will have similar residue levels based on similarities of the raw agricultural commodity, cultural practices and pest problems.

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

The members of this crop group have similar uses, and all are consumed fresh or consumed cooked or raw in various recipes including salads, jellies, and juices. They can also be used fresh or in a dehydrated form. Some of these pome fruits also have medicinal properties. The fact that these pome fruits are in the same family with similar biological and cultural aspects suggests they should also encounter similar pest problems and hence have similar needs for pest control products in similar use patterns. Apples are processed into juice and wet pomace and wet pomace is used as a livestock feed item.

C. Stone Fruits

Proposed representative commodities for Group 003 Stone Fruits from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Group 003 Stone Fruits	Cherry, Sweet or Cherry, Sour; Plum or Prune Plum and Peach	Stone fruits (FS 0012): Cherry, black; Cherry, Nanking; Cherry Sour; Cherry, Sweet; Cherry, tart; Choke cherry; Morello; Bullace; Cherry plum; Chicksaw plum; Damsons plums; Greengage plums; Klamath plum; Myrobolan plum; Plum American; Plum beach; Plum, Japanese, Plum Mirabelle; Plumcot; Prunes; Sloe; Apricot; Japanese apricot; Nectarine; Peach
Subgroup 003A, Cherries	Cherry, Sweet or Cherry, Sour	Cherries (FS 0013): Cherry, black; Cherry, Nanking; Cherry Sour; Cherry, Sweet; Cherry, tart; Choke cherry; Morello
Subgroup 003B, Plums	Plum or Prune Plum	Plums (FS 0014): Bullace; Cherry plum; Chicksaw plum; Damsons plums; Greengage plums; Klamath plum; Myrobolan plum; Plum American; Plum beach; Plum, Japanese, Plum Mirabelle; Plumcot; Prunes; Sloe
Subgroup 003C, Peaches	Peach	Peaches (FS 2001): Apricot; Japanese apricot; Nectarine; Peach

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

C.1. Introduction – Stone Fruits

The Group 003 Stone Fruits consist of commodities of the family *Rosaceae*. The family *Rosaceae* or Rose family has four subfamilies of which the stone fruits are contained in the *Spiraeoideae* subfamily. In contrast, the Pome fruits (Group 002) are also all members of the same family but were contained in the *Maloideae* subfamily.

Compared to the many other crop groups, commodities in this group are all very closely related, and share similar morphological, cultural characteristics, and pest problems. There are over 100 genera and over three thousand species in the *Rosaceae* family. The greatest diversity of members of the *Rosaceae* is in Europe, Asia, or North America. The Rose family also includes many fruits of temperate regions including apple, pear, apricot, cherry, nectarine, peach, plum, raspberry and strawberry.

A drupe is a fruit in which an outer fleshy part (exocarp, or skin; and mesocarp, or flesh) surrounds a shell and is often called the pit or stone of hardened endocarp with a seed inside. These fruits develop from a single carpel, and mostly from flowers with superior ovaries. The definitive characteristic of a drupe is that the hard, lignified stone (or pit) is derived from the ovary wall of the flower. Other fleshy fruits may have a stony enclosure that comes from the seed coat surrounding the seed, but these fruits are not drupes. The term stone fruit in the literature can be a synonym for "drupe" or it can mean just the fruit of the *Prunus* genus. The best know example of a stone fruit is the peach.

Three subgroups are proposed for Group 003 Stone Fruits: (1) Subgroup 003A, Cherries; (2) Subgroup 003B, Plums and (3) Subgroup 003C, Peaches.

C.2. Production and/or Consumption – Stone Fruits

Proposed representative commodities of the Stone fruit crop group find widespread distribution throughout the world. Table 6 on the following page provides a list of the hectares and production in metric tonnes from various countries and regions that grow cherries, sour cherries, plum and sloes, peach and nectarines and apricots. The world total hectares for apricots, cherries, peaches, and plums have increased from 3,583,597 hectares (ha) in 1997 to 4,717,647 ha in 2007, and the total production of these fruits has increased from 23,525,883 metric tons in 1997 to 32,123,241 metric tons in 2007 (FAO, 2007). Some stone fruits don't have large commercial production, but some of the "minor" stone fruits have great potential to be grown on a larger scale in some areas in the future due to their unique nutritional and medicinal values. The proposed representative commodities of Cherries, Plum (and sloes) and Peaches (and nectarines) are among the stone fruit that are reported by FAO with lower production reported for apricot (member commodity).

Table 6. Production of Major Stone Fruits by Country and Region in 2008 (FAO)

Country / Region	Cherries (proposed representative commodity, 003A)	Sour Cherries (proposed representative commodity, 003A)	Plum and Sloes (proposed representative commodity, 003B)	Peaches and Nectarines (proposed representative and member commodity, 003C)	Apricot (proposed member commodity, 003C)
Australia	1,800 Ha 9,730 Tonnes	NA	4,000 Ha 23,091 Tonnes	20,000 Ha 130,916 Tonnes	6,000 Ha 17,327 Tonnes
Canada	1,315 Ha 6,967 Tonnes	848 Ha 5,860 Tonnes	488 Ha 2,470 Tonnes	3,170 Ha 28,838 Tonnes	192 Ha 1,084 Tonnes
China	6,000 Ha 25,000 Tonnes	NA	1,653,115 Ha 5,223,001 Tonnes	782,686 Ha 8,329,329 Tonnes	20,483 Ha 77,812 Tonnes
Japan	4,490 Ha 16,600 Tonnes	NA	3,050 Ha 21,900 Tonnes	10,200 Ha 150,200 Tonnes	17,500 Ha 120,600 Tonnes
Mexico	85 Ha 560 Tonnes	NA	15,517 Ha 70,024 Tonnes	39,757 Ha 202,066 Tonnes	310 Ha 1,326 Tonnes
New Zealand	520 Ha 1,900 Tonnes	NA	413 Ha 2,350 Tonnes	904 Ha 8,200 Tonnes	457 Ha 3,500 Tonnes
United States	33,431 Ha 225,073 Tonnes	14,022 Ha 97,250 Tonnes	39,150 Ha 493,055 Tonnes	63,252 Ha 1,304,350 Tonnes	5,038 Ha 74,040 Tonnes
Africa	4,274 Ha 13,489 Tonnes	NA	43,212 Ha 265,886 Tonnes	134,688 Ha 888,034 Tonnes	76,106 Ha 480,753 Tonnes
Asia	114,151 Ha 771,100 Tonnes	45,444 Ha 335,526 Tonnes	1,779,372 Ha 6,332,279 Tonnes	1,005,402 Ha 10,663,096 Tonnes	300,238 Ha 2,332,806 Tonnes
Europe	179,680 Ha 704,930 Tonnes	174,679 Ha 795,066 Tonnes	576,197 Ha 2,574,993 Tonnes	274,204 Ha 4,249,326 Tonnes	111,978 Ha 804,020 Tonnes
Central America	85 Ha 560 Tonnes	NA	15,517 Ha 70,024 Tonnes	42,452 Ha 236,993 Tonnes	310 Ha 1,326 Tonnes
South America	14,901 Ha 68,482 Tonnes	533 Ha 1,669 Tonnes	41,815 Ha 452,537 Tonnes	83,358 Ha 919,160 Tonnes	4,439 Ha 44,060 Tonnes
World Total	350,157 Ha 1,802,231 Tonnes	235,526 Ha 1,235,371 Tonnes	2,500,364 Ha 10,217,435 Tonnes	1,627,430 Ha 18,428,913 Tonnes	504,758 Ha 3,758,936 Tonnes

Note: This table reports only the stone fruits available on the FAO website.

C.3. Residue Tolerances – Stone Fruits

The stone fruit crop group consists of commodities fully exposed to pesticides and the fruit peel is usually eaten and can also be pressed into juice. All of the stone fruit commodities have similar morphology and can be expected to have similar residue levels based on similarities in morphology, cultural practices and pest problems. Higher residue levels can be expected from cherries due to the large surface area in proportion to weight and the peel is also consumed or in contact during jucie extraction. In many cases US stonefruit tolerances are higher than Codex or EU tolerances.

Table 7. Residue Tolerances established on Stone Fruit Group 003
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Cherry (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sweet (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sour (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	--	--	--	0.1	---	0.05	--	--	--
1-Naphthaleneacetic acid	--	--	--	0.1	---	0.05	--	--	--
2,4-D	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Abamectin	0.09	---	0.01	0.09	---	0.01	0.09	---	0.01
Acetamiprid	1.2	---	0.5	1.2	---	0.5	1.2	---	0.5
Azinphos-methyl	2	2	0.05	2	2	0.05	2	2	0.05
Azoxystrobin	1.5	2	2	1.5	2	2	1.5	2	2
Beta-cyfluthrin	0.3	---	---	0.3	---	---	0.3	---	---
Bifenazate	2.5	2	0.01	2.5	2	0.01	2.5	2	0.01
Boscalid	3.5	3	3	3.5	3	3	3.5	3	3
Buprofezin	1.9	2	0.5	1.9	2	0.5	1.9	2	0.5
Captan	50	25	5	50	25	5	50	25	5
Carbaryl	10	---	0.05	10	---	0.05	10	---	0.05
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	2	1	1	2	1	1	2	1	1
Chlorothalonil	0.5	0.5	0.01	0.5	0.5	0.01	0.5	0.5	0.01
Chlorpyrifos	1	---	0.3	1	---	0.3	1	---	0.3
Clofentezine	1	0.5	0.02	1	0.5	0.02	1	0.5	0.02
Clopyralid	0.5	---	0.5	0.5	---	0.5	0.5	---	0.5
Cyfluthrin	0.3	---	0.2	0.3	---	0.2	0.3	---	0.2
Cyprodinil	2	2	1	2	2	1	2	2	1
D-Phenothrin	0.01	--	0.05	0.01	---	0.05	0.01	---	0.05
Diazinon	0.2	1	0.01	0.2	1	0.01	0.2	1	0.01
Dichlobenil	0.15	---	0.2	0.15	---	0.2	0.15	---	0.2
Dicloran	--	--	--	20	---	0.1	--	--	--
Dicofol	5	5	0.02	5	5	0.02	5	5	0.02
Dimethoate	2	2	1	2	2	1	2	2	1
Dodine	3	3	5	3	3	5	3	3	5
Endosulfan	2	---	0.05	2	---	0.05	2	---	0.05
Esfenvalerate	3	---	0.02	3	---	0.02	3	---	0.02
Ethephon	10	10	3	10	10	(3	10	10	3
Etoxazole	1	---	0.02	1	---	0.02	1	---	0.02
Fenarimol	1	1	1	1	1	1	1	1	1
Fenbuconazole	1	1	1	1	1	1	1	1	1

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Cherry (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sweet (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sour (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Fenbutatin-oxide	6	10	0.05	6	10	0.05	6	10	0.05
Fenhexamid	10	7	5	10	7	5	10	7	5
Fenpropathrin	5	---	0.01	5	---	0.01	5	---	0.01
Ferbam	4	0.2	---	4	0.2	---	4	0.2	---
Flonicamid	0.6	---	0.3	0.6	---	0.3	0.6	---	0.3
Fluazifop	0.05	---	0.5	0.05	---	0.5	0.05	---	0.5
Flubendiamide	1.6	---	0.01	1.6	---	0.01	1.6	---	0.01
Fludioxonil	5	5	5	5	5	5	5	5	5
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Forchlorfenuron	--	--	--	0.01	---	0.05	--	--	--
Gamma Cyhalothrin	0.5	0.3)	---	0.5	0.3	---	0.5	0.3	---
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Hexythiazox	1	0.3	1	1	0.3	1	1	0.3	1
Imidacloprid	3	---	0.5	3	0.5	0.5	3	---	0.5
Indoxacarb	0.9	1	0.5	0.9	1	0.5	0.9	1	0.5
Inorganic bromide[1]	20	20	20	20	20	20	20	20	20
Iprodione	20	10	3	20	10	3	20	10	3
Lambda Cyhalothrin	0.5	0.3)	0.3	0.5	0.3	0.3	0.5	0.3	0.3
Malathion	8	---	0.02	8	---	0.02	8	---	0.02
Metalaxyl	1	---	0.05	1	---	0.05	1	---	0.05
Metconazole	0.2	---	0.15	0.2	---	0.15	0.2	---	0.15
Methidathion	0.05	0.2	0.2	0.05	0.2	0.2	0.05	0.2	0.2
Methoxyfenozide	3	2	0.02	3	2	0.02	3	2	0.02
Myclobutanil	5	2	1	5	2	1	5	2	1
Norflurazon	0.1	---	---	0.1	---	---	0.1	---	---
Novaluron	8	---	0.01	8	---	0.01	8	---	0.01
O-phenylphenol	5	---	---	5	---	---	5	---	---
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxyfluorfen	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Permethrin	4	2	0.05	4	2	0.05	4	2	0.05
Phosalone	15	2	2	15	2	2	15	2	2
Phosmet	10	---	1	10	---	1	10	---	1
Piperonyl Butoxide	8	---	---	8	---	---	8	---	---
Propiconazole	1	---	0.05	1	---	0.05	1	---	0.05
Propyzamide	0.1	---	0.02	0.1	---	0.02	0.1	---	0.02
Pyraclostrobin	2.5	1	2	2.5	1	2	2.5	1	2
Pyrethrins	1	---	1	1	---	1	1	---	1
Pyridaben	2.5	---	2.5	2.5	---	2.5	2.5	---	2.5
Pyrimethanil	10	4	0.05	10	4	0.05	10	4	0.05
Pyriproxyfen	1	---	1	1	---	1	1	---	1

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Cherry (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sweet (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)			Cherry, Sour (ppm) (Proposed Representative Commodity; Cherries, Subgroup 003A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Quinoxyfen	0.7	0.4	0.3	0.7	0.4	0.3	0.7	0.4	0.3
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Simazine	0.25	---	0.25	0.25	---	0.25	0.25	---	0.25
Spinetoram	0.2	---	0.05	0.2	---	0.05	0.2	---	0.05
Spinosad	0.2	0.2	1	0.2	0.2	1	0.2	0.2	1
Spirodiclofen	1	2	0.2	1	2	0.2	1	2	0.2
Spirotetramat	4.5	3	3	4.5	3	3	4.5	3	3
Tebuconazole	5	5	5	5	5	5	5	5	5
Thiamethoxam	0.5	---	0.5	0.5	---	0.5	0.5	---	0.5
Thiophanate-methyl	20	10	0.3	20	10	0.3	20	10	0.3
Trifloxystrobin	2	3	1	2	3	1	2	3	1
Triflumizole	1.5	---	1.5	1.5	---	1.5	1.5	---	1.5
Trifluralin	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Zeta-Cypermethrin	1	2	2	1	2	2	1	2	2
Ziram	7	0.2	5	7	0.2	5	7	0.2	5

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; residue tolerances as of November 1, 2010)

	Plum, Fresh (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)			Plum, Prune, Dry (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)		
Compound	US	Codex	EU	US	Codex	EU
2,4-D	0.05	0.05	0.05	--	--	--
Abamectin	0.09	---	0.01	0.025	---	---
Acetamiprid	0.2	---	0.02	0.4	---	---
Aviglycine	0.17	---	---	--	--	--
Azoxystrobin	1.5	2	2	1.5	---	---
Beta-cyfluthrin	0.3	---	---	--	--	--
Bifenazate	0.2	2	0.01	--	--	--
Boscalid	3.5	3	3	--	--	--
Buprofezin	1.9	2	0.3	--	--	--
Captan	10	10	1	--	--	--
Carbaryl	10	---	0.05	--	--	--
Carbon disulfide				0.1	---	---
Carfentrazone-ethyl	0.1	---	0.01	--	--	--
Chlorantraniliprole	4	1	1	--	--	--
Chlorothalonil	0.2	---	0.01	--	--	--
Chlorpyrifos	0.05	0.5	0.2	--	--	--
Clopyralid	0.5	---	0.5	1.5	---	---
Cryolite	7	---	---	--	--	--
Cyfluthrin	0.3	---	0.2	--	--	--
Cyprodinil	2	2	2	2	5	---
D-Phenothrin	0.01	---	0.05	0.01	---	---
Diazinon	0.2	1	0.01	--	--	--
Dichlobenil	0.15	---	0.2	--	--	--
Dicloran	15	---	0.1	--	--	--
Dicofol	5	1	0.02	--	--	--
Diflubenzuron	0.07	---	1	--	--	--
Endosulfan	2	---	0.05	2	---	---
Esfenvalerate	3	---	0.02	--	--	--
Etoxazole	0.15	---	0.02	0.3	---	---
Fenbuconazole	1	---	0.5	--	--	--
Fenbutatin-oxide	4	3	0.05	20	10	---
Fenhexamid	1.5	1	1	2.5	---	---
Fenpropathrin	1.4	---	0.01	--	--	--
Flonicamid	0.6	---	0.2	--	--	--
Fluazifop	0.05	---	0.5	0.05	---	---
Flubendiamide	1.6	---	0.01	--	--	--
Fludioxonil	5	5	0.5	--	--	--
Flumioxazin	0.02	---	0.05	--	--	--
Fluridone	0.1	---	---	0.1	---	---
Forchlorfenuron	0.01	---	0.05	--	--	--
Gamma Cyhalothrin	0.5	0.2	---	--	--	--
Glyphosate	0.2	---	0.1	--	--	--

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; residue tolerances as of November 1, 2010)

	Plum, Fresh (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)			Plum, Prune, Dry (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)		
Compound	US	Codex	EU	US	Codex	EU
Hexythiazox	1	0.3	0.5	1.3	(1)	---
Imidacloprid	3	0.2	0.3	--	--	--
Indoxacarb	0.9	1	0.02	--	--	--
Inorganic bromide resulting from fumigation[1]	20	20	20	--	--	--
Iprodione	20	---	3	20	---	---
Lambda Cyhalothrin	0.5	0.2	0.2	--	--	--
Malathion	8	---	0.02	8	---	---
Metalaxyl	1	---	0.05	4	---	---
Metconazole	0.2	---	0.02	--	--	--
Methidathion	0.05	0.2	0.2	--	--	--
Methoxyfenozide	0.3	2	0.02	--	--	--
Myclobutanil	2	0.2	0.5	8	0.5	---
Norflurazon	0.1	---	---	--	--	--
Novaluron	1.9	---	0.01	2.6	---	---
O-phenylphenol	20	---	---	--	--	--
Oryzalin	0.05	---	0.01	--	--	--
Oxyfluorfen	0.05	---	0.05	--	--	--
Paraquat dichloride	0.05	0.01	0.02	--	--	--
Pendimethalin	0.1	---	0.05	--	--	--
Phosalone	15	2	2	--	--	--
Phosmet	5	---	0.6	--	--	--
Piperonyl Butoxide	8	---	---	--	--	--
Propiconazole	1	---	0.05	--	--	--
Propylene chlorohydrin	--	--	--	2	---	---
Propylene oxide	--	--	--	2	---	---
Propyzamide	0.1	---	0.02	--	--	--
Pyraclostrobin	2.5	1	0.5	--	--	--
Pyrethrins	1	---	1	--	--	--
Pyridaben	2.5	---	0.5	--	--	--
Pyrimethanil	10	2	3	--	--	--
Pyriproxyfen	1	---	0.05	--	--	--
Quinoxyfen	0.7	---	0.02	--	--	--
Rimsulfuron	0.01	---	0.05	--	--	--
Saflufenacil	0.03	---	---	--	--	--
Simazine	0.2	---	0.1	--	--	--
Spinetoram	0.2	---	0.05	--	--	--

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; residue tolerances as of November 1, 2010)

	Plum, Fresh (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)			Plum, Prune, Dry (ppm) (Proposed Representative Commodity; Plums, Subgroup 003B)		
Compound	US	Codex	EU	US	Codex	EU
Spinosad	0.2	0.2	1	--	--	--
Spirodiclofen	1	2	0.05	--	--	--
Spirotetramat	4.5	3	3	--	--	--
Sulfuryl fluoride	--	--	--	0.05	0.06	---
Tebuconazole	1	---	0.5	--	--	--
Thiamethoxam	0.5	---	0.3	--	--	--
Thiophanate-methyl	0.5	0.5	0.3	--	--	--
Trifloxystrobin	2	3	0.2	--	--	--
Trifluralin	0.05	---	0.1	--	--	--
Zeta-Cypermethrin	1	2	2	--	--	--

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Peach (ppm) (Proposed Representative Commodity; Peach, Subgroup 003C)			Apricot (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)			Nectarine (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Abamectin	0.09	---	0.01	0.09	---	0.01	0.09	---	0.01
Acetamiprid	1.2	---	0.1	1.2	---	0.1	1.2	---	0.1
Aviglycine	0.17	---	---	0.17	---	---	0.17	---	---
Azoxystrobin	1.5	2	2	1.5	2	2	1.5	2	2
Beta-cyfluthrin	0.3	---	---	0.3	---	---	0.3	---	---
Bifenazate	2.5	2	0.01	2.5	2	0.01	2.5	2	0.01
Boscalid	3.5	3	3	3.5	3	3	3.5	3	3
Buprofezin	9	9	0.7	9	---	0.2	9	9	0.7
Captan	15	20	0.02	10	---	3	25	3	0.02
Carbaryl	10	---	0.05	10	---	0.05	10	---	0.05
Carbon disulfide	0.1	---	2				0.1	---	2
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	4	1	1	4	1	1	4	1	1
Chlorothalonil	0.5	0.2	1	0.5	---	1	0.5	---	1
Chlorpyrifos	0.05	0.5	0.2	--	--	--	0.05	---	0.2
Clethodim	0.2	---	0.1	--	--	--	0.2	---	0.1
Clofentezine	1	0.5	0.02	1	0.5	0.02	1	0.5	0.02
Clopyralid	0.5	---	0.5	0.5	---	0.5	0.5	---	0.5
Clothianidin	0.8	---	0.1				0.8	---	0.1
Cryolite	7	---	---	7	--	---	7	---	---
Cyfluthrin	0.3	---	0.3	0.3	---	0.3	0.3	---	0.3
Cyprodinil	2	2	2	2	2	2	2	2	2
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Diazinon	0.2	0.2	0.01	0.2	---	0.01	0.2	---	0.01
Dichlobenil	0.15	---	0.2	0.15	---	0.2	0.15	---	0.2
Dicloran	20	7	0.1	20	---	0.1	20	7	0.1
Dicofol	5	5	0.02	5	---	0.02	5	---	0.02
Diflubenzuron	0.07	---	1	0.07	---	1	0.07	---	1
Diuron	0.1	---	0.05	--	--	--	0.1	---	0.05
Dodine	5	5	5	--	--	--	5	5	5
Endosulfan	2	---	0.05	2	---	0.05	2	---	0.05
Esfenvalerate	3	---	0.1	3	---	0.1	3	---	0.1
Etoxazole	1	---	0.1	1	---	0.1	1	---	0.1
Fenbuconazole	1	0.5	0.5	1	0.5	1	1	---	0.5
Fenbutatin-oxide	10	7	0.05	--	--	--	10	---	0.05
Fenhexamid	10	10	5	10	10	5)	10	10	5
Fenpropathrin	1.4	---	0.01	1.4	---	0.01	1.4	---	0.01
Ferbam	4	7	---	--	--	--	4	7	---
Flonicamid	0.6	---	0.3	0.6	---	0.3	0.6	---	0.3

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Peach (ppm) (Proposed Representative Commodity; Peach, Subgroup 003C)			Apricot (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)			Nectarine (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Fluazifop	0.05	---	0.2	0.05	---	0.5	0.05	---	0.2
Flubendiamide	1.6	---	0.01	1.6	---	0.01	1.6	---	0.01
Fludioxonil	5	5	7	5	5	5	5	5	7
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Formetanate hydrochloride	0.4	---	0.05	--	--	--	0.4	---	0.05
Gamma Cyhalothrin	0.5	0.5	---	0.5	0.5	---	0.5	0.5	---
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Hexythiazox	1	0.3	1	1	0.3	1	1	0.3	1
Imidacloprid	3	0.5	0.5	3	0.5	0.5	3	0.5	0.5
Indoxacarb	0.9	1	0.3	0.9	1	0.3	0.9	1	0.3
Inorganic bromide[1]	20	20	20	20	20	20	20	20	20
Iprodione	20	10	3	20	---	3	20	---	3
Lambda Cyhalothrin	0.5	0.5	0.2	0.5	0.5	0.2	0.5	0.5	0.2
Malathion	8	---	0.02	8	---	0.02	8	---	0.02
Maneb	10	7	2	10	7	(2	10	7	(2
Metalaxyl	1	---	0.05	1	---	0.05	1	---	0.05
Metconazole	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Methidathion	0.05	0.2	0.05	0.05	---	0.02	0.05	0.2	0.05
Methomyl	5	0.2	0.2	--	--	--	5	0.2	0.2
Methoxyfenozide	3	2	0.3	3	2	0.3	3	2	0.3
Myclobutanil	2	2	0.5	2	2	0.3	2	2	0.5
Naled	0.5	---	---	--	--	--	0.5	---	---
Norflurazon	0.1	---	---	0.1	---	---	0.1	---	---
Novaluron	1.9	---	0.01	1.9	---	0.01	1.9	---	0.01
O-phenylphenol	20	---	---				5	---	---
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Oxyfluorfen	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Oxytetracycline	0.35	---	---	--	--	--	0.35	---	---
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Pendimethalin	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Permethrin	1	2	0.05	--	--	--	1	2	0.05
Phosalone	15	2	2	--	--	--	15	2	2
Phosmet	10	10	0.05	5	10	0.05	5	10	0.05
Piperonyl Butoxide	8	---	---	--	--	--	8	---	---
Propargite	--	--	--	--	--	--	4	4	4

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

Table 7. Residue Tolerances established on Stone Fruit Group 003 (continued)
(FASonline: mrldatabase.com; MRLs as of November 1, 2010)

	Peach (ppm) (Proposed Representative Commodity; Peach, Subgroup 003C)			Apricot (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)			Nectarine (ppm) (Proposed Member Commodity; Peach, Subgroup 003C)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Propiconazole	2	---	0.2	1	---	0.2	2	---	0.2
Propyzamide	0.1	---	0.02	0.1	---	0.02	0.1	---	0.02
Pyraclostrobin	2.5	1	0.2	2.5	1	0.2	2.5	1	0.2
Pyrethrins	1	---	1				1	---	1
Pyridaben	2.5	---	0.5	2.5	---	0.5	2.5	---	0.5
Pyrimethanil	10	4	10	10	3	3	10	4	10
Pyriproxyfen	1	---	0.5	1	---	0.05	1	---	0.5
Quinoxyfen	0.7	---	0.05	0.7	---	0.05	0.7	---	0.05
Rimsulfuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Saflufenacil	0.03	---	---	0.03	---	---	0.03	---	---
Sethoxydim	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Simazine	0.2	---	0.1				0.2	---	0.1
Spinetoram	0.2	---	0.2	0.2	---	0.2	0.2	---	0.2
Spinosad	0.2	0.2	1	0.2	0.2	1	0.2	0.2	1
Spirodiclofen	1	2	0.2	1	2	0.2	1	2	0.2
Spirotetramat	4.5	3	3	4.5	3	3	4.5	3	3
Tebuconazole	1	1	1	1	---	1	1	---	1
Terbacil	0.2	---	---				0.2	---	---
Thiamethoxam	0.5	---	0.3	0.5	---	0.3	0.5	---	0.3
Thiophanate-methyl	3	2	2	15	2	(2	3	2	2
Thiram	7	7	3	--	--	--	7	7	3
Trifloxystrobin	2	3	1	2	3	1	2	3	1
Trifluralin	0.05	---	0.1	0.05	---	0.1	0.05	---	0.1
Zeta-Cypermethrin	1	2	2	1	2	2	1	2	2
Ziram	7	7	0.1	7	7	0.1	7	7	0.1

Note: That shaded cells indicate that the residue tolerance is established for the respective crop group rather than for the individual commodity.

C.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Stone Fruits:

Stone fruits are one of the largest groups of fruit crops produced in the world, next to apple, grape, banana, and citrus. Stone fruits are all the members of the genus *Prunus*, cherries and their allies. They all have a single hard pit surrounding the seed in the center of the berry. The members of the Stone Fruit Group share many of the same pest problems since they are all members of the same botanical family the Rosaceae. Because of the similarity in the botany, cultivars and cultural practices among these crops, they have similar pest problem. There are no significant animal feed items associated with the Stone fruit crop group 003. While culls can be fed to livestock their high moisture content keeps them from being transported widely.

C.5. Conclusion – Stone Fruits

Proposed representative commodities (Sweet or Sour Cherry; Plum or Prune Plum and Peach) for Group 003 Stone Fruits were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

Proposed representative commodities of the Stone fruit crop group find widespread distribution throughout the world. The proposed representative commodities of Cherries, Plum (and sloes) and Peaches (and nectarines) are among the stone fruit that are reported by FAO with lower production reported for apricot. Some stone fruits don't have large commercial production, but some of the "minor" stone fruits have great potential to be grown on a larger scale in some areas in the future due to their unique nutritional and medicinal values.

(2) A representative commodity should be likely to contain the highest residues:

The stone fruit crop group consists of commodities fully exposed to pesticides and the fruit peel is usually eaten and can also be pressed into juice. All of the stone fruit commodities have similar morphology and can be expected to have similar residue levels based on similarities in morphology, cultural practices and pest problems. Higher residue levels can be expected from cherries due to the large surface area in proportion to weight and the peel is also consumed or in contact during jucie extraction.

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

Stone fruits are all the members of the same *Prunus* genus. They all have a single hard pit surrounding the seed in the center of the berry. The members of the Stone Fruit Crop Group share many of the same pest problems since they are all members of the same botanical family the Rosaceae. Because of the similarity in the botany, cultivars and cultural practices among these crops, they have similar pest problem.

D. Berries and other small fruits

Proposed representative commodities for Group 004 Berries and other small fruits from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Group 004 Berries and other small fruits	Blackberry or Raspberry; Blueberry; Elderberry; Grape and Strawberry	Berries and other small fruits (FB 0018): Amur river grape; Arguta kiwifruit; Aronia berries; Bakeapple; Bayberries; Bearberry; Bilberry; Bilberry, Bog; Bilberry, Red; Blackberries; Blueberry, Highbush; Blueberry, Lowbush; Blueberry, Rabbiteye; Boysenberry; Buffaloberry; Buffalo currant; Che; Chilean guava; Cloudberry; Cowberry; Cranberry; Currants, Black, Red, White; Dewberries; Elderberries; European barberry; Gooseberry; Grapes; Guelder rose; Huckleberries; Jostaberries; Juneberries; Korean Black Raspberry; Korean Raspberry; Loganberry; Mulberries; Muntries; Native currant; Olallie berry; Partridge berry; Phalsa; Raspberries, Red, Black; Riberries; Rose hips; Rowan; Salal; Schisandraberry; Sea buckthorn; Service berries; Silverberry, Russian; Squaw vine; Strawberry; Strawberry, Musky Strawberries, Wild; Table grapes; Tara vine; Vaccinium berries; Whortleberry, Red; Wine grapes; Youngberry
Subgroup 004A, Cane berries	Blackberry or Raspberry	Cane berries (FB 2005): Blackberries; Boysenberry; Dewberries; Korean Black Raspberry; Korean Raspberry; Loganberry; Olallie berry; Raspberries, Red, Black; Youngberry
Subgroup 004B, Bush berries	Blueberry or Currants, black, red or white	Bush berries (FB 2006): Vaccinium berries; Blueberries; Aronia berries; Bearberry; Bilberry; Bilberry, Bog; Bilberry, Red; Blueberry, Highbush; Blueberry, Lowbush; Blueberry, Rabbiteye; Buffalo currant; Chilean guava; Cowberry; Currants, Black, Red, White; Gooseberry; European barberry; Huckleberries; Jostaberries; Juneberries; Native currant; Riberries; Rose hips; Salal; Sea buckthorn; Whortleberry, Red
Subgroup 004C, Large shrub/tree berries	Elderberry	Large shrub/tree berries (FB 2007): Bayberries; Buffaloberry; Che; Elderberries; Guelder rose; Mulberries; Phalsa; Rowan; Service berries; Silverberry, Russian
Subgroup 004D, Small fruit vine climbing	Grapes	Small fruit vine climbing (FB 2008): Arguta kiwifruit; Amur river grape; Grapes; Schisandraberry; Table grapes; Tara vine; Wine grapes
Subgroup 004E, Low growing berries	Strawberry	Low growing berries (FB 2009): Bakeapple; Cranberry; Cloudberry; Muntries; Partridge berry; Squaw vine; Strawberry; Strawberries, Wild; Strawberry, Musky

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

D.1. Introduction – Berries and other small fruits

The Group 004, Berries and other small fruits, consists of herbaceous annual, biennial or perennial cool season plants cultivated as annual crops. Plant breeders have found that many members of the berry and small fruit group such as the blackberries and raspberries can readily cross and bear fertile hybrids. These commodities are from the following 17 botanical families: *Actinidiaceae, Berberidaceae, Caprifoliaceae, Eleagnaceae, Epacridaceae, Ericaceae, Grossulariaceae, Moraceae, Myricaceae, Myrtaceae, Passifloraceae, Rosaceae, Rubiaceae, Schisandraceae; Tiliaceae, Vitaceae, and Winteraceae*. Brambles are another general term sometimes used in defining any species belonging to the *Rubus* genus. These are raspberries, blackberries, and several hybrids of these, such as tayberry. Many *Rubus* species related to blackberry and raspberry are not listed as individual entries; instead they are listed under “Blackberries” and “Raspberries”.

Berries in a generic sense are pulpy, usually edible fruits of rounded shape and small size. Botanically, a berry is a simple fruit, derived from ovarian floral tissue, in which the fruit wall or pericarp has a uniformly pulpy or fleshy consistency. The fruit of a grape is a berry borne in clusters and consisting of several berries. There is a large variation in plant biology and cultural practices among this group of commodities, but they are more similar in fruit characteristics. The berries and small fruits are all perennial crops and are usually woody, and some such as strawberries can be managed as an annual or perennial production crop.

Five subgroups are proposed for Group 004 Berries and Small Fruits: (1) Subgroup 004A, Caneberries; (2) Subgroup 004B, Bush berries; (3) Subgroup 004C, Large shrub/tree berries; (4) Subgroup 004D, Small fruit vine climbing and (5) Subgroup 004E, Low growing berries.

D.2. Production and/or Consumption – Berries and other small fruits

Table 8 on the following pages provides a list of the hectares and production in metric tonnes from various countries and regions that grow berries and small fruits. Proposed representative commodities of the Berry and small fruit crop group find widespread distribution throughout the world. Strawberry is found in almost ever country from the Arctic to the tropics, and is more widely distributed than grapes. Blackberry, highbush blueberry, grape, and strawberry are also widely grown throughout the world. FAO reports the production of all of the proposed representative commodities (raspberries, blueberries, grapes and strawberries), except for elderberry. FAO also reports production data for subgroup member commodities of currants, cranberries and gooseberries. Worldwide, grape is by far the most harvested berry and small fruit, followed by strawberries.

Table 8. Production of Major Berries and Small Fruits by Country and Region in 2008 (FAO)

Country/Region	Raspberries (proposed representative commodity, Caneberries, Subgroup 004A)	Blueberries (proposed representative commodity, Bush berries, Subgroup 004B	Currants (proposed member commodity, Bush berries, Subgroup 004B)	Gooseberry (proposed member commodity, Bush berries, Subgroup 004B)
Australia	230 Ha 600 Tonnes	NA	242 Ha 637 Tonnes	NA
Canada	2,404 Ha 11,825 Tonnes	34,109 Ha 95,516 Tonnes	NA	NA
China	NA	NA	NA	NA
Japan	NA	NA	5 Ha 14 Tonnes	NA
Mexico	775 Ha 11,477 Tonnes	14 Ha 123 Tonnes	NA	NA
New Zealand	200 Ha 350 Tonnes	400 Ha 2,000 Tonnes	1,275 Ha 8,500 Tonnes	2 Ha 10 Tonnes
United States	6,475 Ha 53,342 Tonnes	24,354 Ha 158,032 Tonnes	NA	NA
Africa	66 Ha 310 Tonnes	10 Ha 50 Tonnes	NA 290 Tonnes	NA
Asia	3,100 Ha 11,700 Tonnes	100 Ha 600 Tonnes	535 Ha 3,214 Tonnes	20 Ha 100 Tonnes
Europe	77,424 Ha 370,205 Tonnes	13,486 Ha 32,296 Tonnes	113,144 Ha 590,877 Tonnes	25,725 Ha 115,510 Tonnes
Central America	775 Ha 11,477 Tonnes	14 Ha 123 Tonnes	NA	NA
South America	NA	NA	NA	NA
World Total	90,674 Ha 459,809 Tonnes	72,473 Ha 288,617 Tonnes	115,196 Ha 603,518 Tonnes	25,747 Ha 115,620 Tonnes

Note: This table reports only the berries and other small fruits available on the FAO website.

Table 8. Production of Major Berries and Small Fruits by Country and Region in 2008 (FAO) (continued)

Country/Region	Grapes (proposed representative commodity, Small fruit vine climbing, Subgroup 004D)	Strawberries (proposed representative commodity, Low growing berries, Subgroup 004E)	Cranberrries (proposed member commodity, Low growing berries, Subgroup 004E)
Australia	166,197 Ha 1,956,790 Tonnes	1,297 Ha 24,506 Tonnes	NA
Canada	9,575 Ha 80,962 Tonnes	3,492 Ha 20,366 Tonnes	4,425 Ha 72,688 Tonnes
China	453,232 Ha 7,235,656 Tonnes	1,091 Ha 12,596 Tonnes	NA
Japan	18,600 Ha 209,100 Tonnes	6,470 Ha 190,700 Tonnes	NA
Mexico	25,956 Ha 307,478 Tonnes	6,176 Ha 207,485 Tonnes	NA
New Zealand	29,616 Ha 190,000 Tonnes	216 Ha 5,000 Tonnes	NA
United States	378,770 Ha 6,639,920 Tonnes	22,043 Ha 1,148,405 Tonnes	15,459 Ha 356,796 Tonnes
Africa	454,276 Ha 4,233,947 Tonnes	16,577 Ha 346,292 Tonnes	8 Ha 50 Tonnes
Asia	1,770,552 Ha 18,458,282 Tonnes	31,767 Ha 745,441 Tonnes	500 Ha 2,250 Tonnes
Europe	3,985,591 Ha 27,593,714 Tonnes	163,163 Ha 1,425,461 Tonnes	1,950 Ha 7,650 Tonnes
Central America	27,991 Ha 321,958 Tonnes	6,692 Ha 218,805 Tonnes	NA
South America	513,096 Ha 7,147,831 Tonnes	8,780 Ha 143,633 Tonnes	NA
World Total	7,337,364 Ha 66,643,404 Tonnes	254,027 Ha 4,077,910 Tonnes	22,342 Ha 439,434 Tonnes

D.3. Residue Tolerances – Berries and other small fruits

Berries and small fruit generally have maximum exposure of their edible parts to pesticide residues because of large surface to weight ratios, and peel or edible skin consumed or in contact during juice extraction. Fruits are generally small with large surface area in proportion to weight and the entire fruit is often consumed. Generally, the fruits develop in three months or less from time of bloom. Therefore, one would expect pesticide residues to be similar in most of the members of the berries and small fruits, with distinct differences in cultural practices based on whether the crop is grown on the ground, or on a shrub or maintained on a trellis or as a small tree. Differences in cultural practices help organize the crop group into subgroups. See Table 9 for a comparison of US, Codex and EU tolerances. Since many of the member crops are minor in production and/or consumption many of the established tolerances are based on crop groups or subgroups. However, it can be expected that all members of the subgroups will have similar residue levels based on similarities of the raw agricultural commodities (RAC's), cultural practices, and pest problems.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Blackberry (ppm) (Proposed Represenative Commodity, Cane berries, Subgroup 004A)			Raspberry (ppm) (Proposed Represenative Commodity, Cane berries, Subgroup 004A)			Boysenberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	0.2	0.1	0.05	0.2	0.1	0.05	0.2	0.1	0.05
Acetamiprid	1.6	---	0.01	1.6	---	0.01	1.6	---	0.01
Azoxystrobin	5	5	5	5	5	5	5	5	5
Bifenazate	5	---	0.01	5	---	0.01	5	---	0.01
Bifenthrin	1	---	0.3	1	---	0.3	1	---	0.05
Boscalid	6	10	10	6	10	10	6	10	10
Captan	25	---	3	25	20	3	25	---	0.02
Carbaryl	12	---	0.05	12	---	0.05	12	---	0.05
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	1.8	---	0.01	1.8	---	0.01	1.8	---	0.01
Clethodim	0.3	---	0.1	0.3	---	0.1	0.3	---	0.1
Cryolite	7	---	---	7	---	---	7	---	---
Cymoxanil	4	---	0.05	4	---	0.05	4	---	0.05
Cyprodinil	10	---	10	10	0.5	10	10	---	0.05
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Diazinon	0.75	0.1	0.01	0.75	0.2	0.01	0.75	0.1	0.01
Dichlobenil	0.1	---	0.1	0.1	---	0.1	0.1	---	0.1
Dicofol	5	---	0.02	5	---	0.02	5	---	0.02
Diuron	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Esfenvalerate	1	---	0.02	1	---	0.02	1	---	0.02
Ethephon	30	---	0.05	--	--	--	--	--	--
Famoxadone	10	---	0.02	10	---	0.02	10	---	0.02
Fenbutatin-oxide	--	--	--	10	---	5	--	--	--
Fenhexamid	20	15	10	20	15	10	20	15	10
Fenpropathrin	12	---	0.01	12	---	0.01	12	---	0.01
Fludioxonil	5	5	5	5	5	5	5	5	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Fosetyl-Al	0.1	---	2	0.1	---	2	0.1	---	2

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Blackberry (ppm) (Proposed Represenative Commodity, Cane berries, Subgroup 004A)			Raspberry (ppm) (Proposed Represenative Commodity, Cane berries, Subgroup 004A)			Boysenberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Hexythiazox	1	---	0.5	1	---	0.5	1	---	0.5
Imidacloprid	2.5	5	5	2.5	5	5	2.5	5	5
Iprodione	25	30	10	15	30	10	15	---	10
Malathion	8	---	0.02	8	---	0.02	8	---	0.02
Mesotrione	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Metalaxyl	--	--	--	0.5	0.2	0.05	--	--	--
Metaldehyde	0.15	--	0.05	0.15	---	0.05	0.15	---	0.05
Myclobutanil	2	---	(1	2	---	1	2	---	0.02
Napropamide	0.1	---	0.1	0.1	---	0.1	0.1	---	0.1
Oxyfluorfen	0.05	---	0.05	0.05	---	0.05	--	--	--
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Piperonyl Butoxide	8	---	---	8	---	---	8	---	---
Propiconazole	1	---	0.05	1	---	0.05	1	---	0.05
Propyzamide	0.05	---	0.02	0.05	---	0.02	0.05	---	0.02
Pyraclostrobin	4	---	2	4	2	(2	4	---	2
Pyrethrins	1	---	1	1	---	1	1	---	1
Pyriproxyfen	1	---	0.05	1	---	0.05	1	---	0.05
S-metolachlor	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Sethoxydim	5	---	0.1	5	---	0.1	5	---	0.1
Simazine	0.2	---	0.1	0.2	---	0.1	--	--	--
Spinetoram	0.7	---	0.05	0.7	---	0.05	0.7	---	0.05
Spinosad	0.7	---	0.3	0.7	---	0.3	0.7	---	0.02
Tebufenozide	3	---	0.05	3	2	2	3	---	0.05
Terbacil	0.2	---	---	0.2	---	---	0.2	---	---
Thiamethoxam	0.35	---	0.05	0.35	---	0.05	0.35	---	0.05
Zeta-Cypermethrin	0.8	---	0.5	0.8	---	0.5	0.8	---	0.5
Ziram	7	---	0.1	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Dewberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)			Loganberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)			Youngberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	0.2	0.1	0.05	0.2	0.1	0.05	0.2	0.1	---
Acetamiprid	1.6	---	0.01	1.6	---	0.01	1.6	---	---
Azoxystrobin	5	5	5	5	5	5	5	5	---
Bifenazate	5	---	0.01	5	---	0.01	5	---	---
Bifenthrin	1	---	0.05	1	---	0.05	1	---	---
Boscalid	6	10	10	6	10	10	6	10	---
Buprofezin	--	--	--	0.3	---	0.05	--	--	--
Captan	25	---	0.02	25	---	0.02	25	---	---
Carbaryl	12	---	(0.05	12	---	0.05	12	---	---
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	---
Chlorantraniliprole	1.8	---	0.01	1.8	---	0.01	1.8	---	---
Clethodim	0.3	---	0.1	0.3	---	0.1	0.3	---	---
Cryolite	7	---	---	7	---	---	7	---	---
Cymoxanil	4	---	0.05	4	---	0.05	4	---	---
Cyprodinil	10	---	0.05	10	---	0.05	10	---	---
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	---
Diazinon	0.75	---	0.01	0.75	---	0.01	0.75	---	---
Dichlobenil	0.1	---	0.1	0.1	---	0.1	0.1	---	---
Dicofol	5	---	0.02	5	---	0.02	5	---	---
Diuron	0.1	---	0.05	0.1	---	0.05	0.1	---	---
Esfenvalerate	1	---	0.02	1	---	0.02	1	---	---
Famoxadone	10	---	0.02	10	---	0.02	10	---	---
Fenhexamid	20	15	10	20	15	10	20	---	---
Fenpropathrin	12	---	0.01	12	---	0.01	12	---	---
Fludioxonil	5	5	0.05	5	5	0.05	5	---	---
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Fosetyl-Al	0.1	---	2	0.1	---	2	0.1	---	---
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	---
Hexythiazox	1	---	0.5	1	---	0.5	1	---	---
Imidacloprid	2.5	5	5	2.5	5	5	2.5	5	---
Iprodione	25	---	10	25	---	10	25	---	---
Malathion	8	---	0.02	8	---	0.02	--	--	--
Mesotrione	0.01	---	0.05	0.01	---	0.05	0.01	---	---
Metaldehyde	0.15	---	0.05	0.15	---	0.05	0.15	---	---
Myclobutanil	2	---	0.02	2	---	0.02	2	---	---
Napropamide	0.1	---	0.1	0.1	---	0.1	0.1	---	---
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	---
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	---
Piperonyl Butoxide	8	---	---	8	---	---	--	--	--
Propiconazole	1	---	0.05	1	---	0.05	1	---	---
Pyraclostrobin	4	---	2	4	---	2	4	---	---
Pyrethrins	1	---	1	1	---	1	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Dewberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)			Loganberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)			Youngberry (ppm) (Proposed Member Commodity, Cane berries, Subgroup 004A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Pyriproxyfen	1	---	0.05	0.3	---	0.05	1	---	---
S-metolachlor	0.1	---	0.05	0.1	---	0.05	0.1	---	---
Sethoxydim	5	---	0.1	5	---	0.1	5	---	---
Simazine				0.2	---	0.1	--	--	--
Spinetoram	0.7	---	0.05	0.7	---	0.05	0.7	---	---
Spinosad	0.7	---	0.02	0.7	---	0.02	0.7	---	---
Tebufenozide	3	---	0.05	3	---	0.05	3	---	---
Terbacil	0.2	---	---	0.2	---	---	0.2	---	---
Thiamethoxam	0.35	---	0.05	0.35	---	0.05	0.35	---	---
Zeta-Cypermethrin	0.8	---	0.5	0.8	---	0.5	0.8	---	---

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Blueberry (ppm) (Proposed Representative Commodity, Bush, berries, Subgroup 004B)			Currant (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Gooseberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	0.2	0.1	0.05	0.2	0.1	0.05	0.2	0.1	0.05
Acetamiprid	1.6	---	0.01	1.6	---	0.01	0.35	---	0.01
Azinphos-methyl	5	5	0.05	--	--	--	--	--	--
Azoxystrobin	3	5	5	3	5	5	3	5	5
Bifenazate	--	--	--	--	--	--	1	---	0.01
Bifenthrin	1.8	---	0.05	1.8	---	0.5	1.8	---	0.05
Boscalid	13	10	10	13	10	10	13	10	10
Captan	20	20	0.02	--	--	--	--	--	--
Carbaryl	3	---	0.05	3	---	0.05	3	---	0.05)
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	--	--	--	--	--	--	2.5	---	0.01
Chlorothalonil	1	---	0.01	--	--	--	--	--	--
Clethodim	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Clopyralid	0.5	---	0.5	0.5	---	0.5	0.5	---	0.5
Cryolite	7	---	---	--	--	--	--	--	--
Cyprodinil	3	---	5	3	---	5	3	---	5
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Diazinon	0.5	---	0.01	--	--	--	--	--	--
Dichlobenil	0.15	---	0.1	0.15	---	0.1	0.15	--	0.1
Diuron	0.1	---	0.05	0.1	---	0.05	0.1	---	0.05
Endosulfan	0.3	---	0.05	--	--	--	--	--	--
Esfenvalerate	1	---	0.02	--	--	--	1	---	0.02
Ethephon	20	20	20	--	--	--	--	--	--
Fenbuconazole	0.3	---	1	0.3	---	0.05	0.3	---	0.05
Fenhexamid	5	5	5	5	5	5	5	5	5
Fenpropathrin	3	---	0.01	3	---	0.01	3	---	0.01
Fluazinam	7	---	0.05	7	---	0.05	7	---	0.05
Fludioxonil	2	2	3	2	---	3	2	---	3
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.02	---	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Forchlorfenuron	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Fosetyl-Al	40	---	2	40	---	2	40	---	2
Glufosinate-ammonium	0.15	0.1	0.5	0.15	0.5	0.5	0.15	0.1	0.5
Glyphosate	0.2	---	0.1	0.2	---	0.1	0.2	---	0.1
Halosulfuron-methyl	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Hexazinone	0.6	---	---	--	--	--	--	--	--
Imidacloprid	3.5	5	5	3.5	5	5	3.5	5	5
Indoxacarb	1.5	---	1	1.5	---	1	1.5	---	1
Inorganic bromide[1]	20	20	5	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Blueberry (ppm) (Proposed Representative Commodity, Bush, berries, Subgroup 004B)			Currant (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Gooseberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Iprodione	15	---	10	15	---	10	--	--	--
Malathion	8	10	0.02	8	---	0.02	8	----	0.02
Mesotrione	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
Metalaxyl	2	---	0.05	--	--	--	--	--	--
Metaldehyde	0.15	---	0.05	0.15	---	0.05	0.15	---	0.05
Methomyl	6	---	0.05	--	--	--	--	--	--
Methoxyfenozide	3	4	0.02	3	---	0.02	3	---	0.02
Myclobutanil				3	0.5	1	2	---	1
Napropamide	0.1	---	0.1	0.1	---	0.1	0.1	---	0.1
Norflurazon	0.2	---	---	--	--	--	--	--	--
Novaluron	7	---	0.01	7	--	0.01	7	---	0.01
Oryzalin	0.05	---	0.01	0.05	---	0.01	0.05	---	0.01
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Phosmet	10	10	10	--	--	--	--	--	--
Piperonyl Butoxide	8	---	---	8	---	---	8	---	---
Propiconazole	1	---	0.05	1	---	0.05	1	---	0.05
Propyzamide	0.05	---	0.02	--	--	--	--	--	--
Pyraclostrobin	4	(1)	3	4	---	3	4	---	3
Pyrethrins	1	---	1	1	---	1	1	---	1
Pyriproxyfen	1	---	0.05	1	---	0.05	0.35	---	0.05
S-metolachlor	0.15	---	0.05	0.15	---	0.05	0.15	---	0.05
Sethoxydim	4	---	0.1	--	--	--	--	--	--
Simazine	0.2	---	0.1	0.25	---	0.1	--	--	--
Spinetoram	0.25	---	0.0	0.25	---	0.05	0.25	---	0.05
Spinosad	0.25	---	0.3	0.25	---	0.3	0.25	---	0.3
Spirotetramat				--	--	--	1.3	---	0.1
Tebufenozide	3	3	3	3	---	0.05	3	---	0.05
Terbacil	0.2	---	---	--	--	--	--	--	--
Thiamethoxam	0.2	---	0.05	0.2	---	0.05	0.2	---	0.05
Zeta-Cypermethrin	0.8	---	0.05	0.8	---	0.05	0.8	---	0.05
Ziram	7	---	0.1	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Huckleberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Juneberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Red Bilberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
2,4-D	0.2	0.1	---	--	--	--	--	--	--
Acetamiprid	1.6	---	---	1.6	---	---	0.6	---	0.01
Azoxystrobin	3	5	---	3	5	---	3	---	0.5
Bifenazate				--	--	--	1.5	---	0.01
Bifenthrin	1.8	---	---	1.8	---	---	1.8	---	0.05
Boscalid	13	10	---	--	--	--	--	--	--
Buprofezin				--	--	--	2.5	---	0.05
Carbaryl	3	---	---	3	---	---	3	---	0.05
Carfentrazone-ethyl	0.1	---	---	0.1	---	---	0.1	---	0.01
Chlorimuron-ethyl	--	--	--	--	--	--	0.02	---	---
Clethodim	0.2	---	---	0.2	---	---	0.2	---	0.5
Clopyralid	0.5	---	---	0.5	---	---	0.5	---	4
Clothianidin	--	--	--	--	--	--	0.01	---	0.02
Cyprodinil	3	---	---	3	---	---	3	---	2
D-Phenothrin	0.01	---	---	0.01	---	---	0.01	---	0.05
Dichlobenil	0.15	---	---	0.15	---	---	0.15	---	0.1
Diuron	0.1	---	---	--	--	--	--	--	--
Fenbuconazole	0.3	---	---	--	--	--	--	--	--
Fenhexamid	5	5	---	5	---	---	5	---	5
Fenpropathrin	3	---	---	3	---	---	3	---	0.01
Fenpyroximate	--	--	--	--	--	--	1	---	0.5
Fluazinam	7	---	---	7	---	---	7	---	0.05
Fludioxonil	2	2	---	2	---	---	2	---	1
Flumioxazin	0.02	---	---	0.02	---	---	0.02	---	0.05
Fluoxastrobin	--	--	--	--	--	--	1.9	---	0.05
Fluridone	0.1	---	---	--	--	--	--	--	--
Forchlorfenuron	0.01	---	---	0.01	---	---	0.01	---	0.05
Fosetyl-Al	40	---	---	40	---	---	40	---	2
Glufosinate-ammonium	0.15	0.1	---	0.1	0.1	---	0.1	---	0.5
Glyphosate	0.2	---	---	0.2	---	---	0.2	---	0.1
Halosulfuron-methyl	0.05	---	---	0.05	---	---	0.05	---	0.01
Imidacloprid	3.5	5	---	3.5	5	---	3.5	---	0.05
Indoxacarb	1.5	---	---	1.5	---	---	1.5	---	1
Mesotrione	0.01	---	---	--	--	--	0.01	---	0.05
Metalaxyl-M (Mefenoxam)	--	--	--	--	--	--	2	---	0.05
Metaldehyde	0.15	---	---	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Huckleberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Juneberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)			Red Bilberry (ppm) (Proposed Member Commodity, Bush berries, Subgroup 004B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Methoxyfenozide	3	4	---	3	---	---	3	---	0.02
Napropamide	0.1	---	---	--	--	--	--	--	--
Novaluron	1	---	---	7	---	---	0.45	---	0.01
Oryzalin	0.05	---	---	--	--	--	--	--	--
Paraquat dichloride	0.05	0.01	---	--	--	--	--	--	--
Pendimethalin	--	--	--	0.1	---	---	--	--	--
Piperonyl Butoxide	8	---	---	--	--	--	--	--	--
Propiconazole	1	---	---	--	--	--	--	--	--
Pyraclostrobin	4	1	---	--	--	--	--	--	--
Pyriproxyfen	1	---	---	1	---	---	1	---	1
S-metolachlor	0.15	---	---	0.15	---	---	0.15	---	0.05
Sethoxydim	--	--	--	5	---	---	5	---	0.5
Spinetoram	0.25	---	---	0.25	---	---	0.25	---	0.05
Spinosad	0.25	---	---	0.25	---	---	0.25	---	0.02
Spiromesifen	--	--	--	--	--	--	2	---	0.02
Tebufenozide	3	3	---	--	--	--	--	--	--
Thiamethoxam	0.2	---	---	0.2	---	---	0.3	---	0.05
Zeta-Cypermethrin	0.8	---	---	--	--	--	--	--	--
Ziram	7	---	---	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Elderberry (ppm) (Proposed Representative Commodity, Large shrub/tree berries, Subgroup 004C)			Grapes (ppm) (Proposed Representative Commodity, Small fruit vine climbing, Subgroup 004D)			Strawberry (ppm) (Proposed Representative Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1,3-Dichloropropene	--	--	--	0.018	---	0.05	--	--	--
2,4-D	0.2	0.1	0.05	0.05	0.1	0.05	0.05	0.1	0.05
Abamectin	--	--	--	0.02	---	0.01	0.02	0.02	0.1
Acequinocyl	--	--	--	1.6	---	0.3	0.4	---	0.01
Acetamiprid	1.6	---	0.01	0.35	---	0.01	0.6	---	0.01
Acifluorfen	--	--	--	--	--	--	0.05	---	---
Azoxystrobin	3	5	5	1	2	2	10	10	10
Beta-cyfluthrin	--	--	--	1	---	---	--	--	--
Bifenazate	--	--	--	0.75	0.7	0.01	1.5	2	2
Bifenthrin	1.8	---	0.05	0.2	---	0.2	3	1	0.5
Boscalid	13	10	10	3.5	5	5	4.5	3	10
Buprofezin	--	--	--	2.5	1	1	2.5	3	0.05
Captan	--	--	--	25	25	0.02	20	15	3
Carbaryl	3	---	1	10	---	0.05	4	---	0.05
Carbon disulfide	--	--	--	0.1	---	5			
Carfentrazone-ethyl	0.1	---	0.01	0.1	---	0.01	0.1	---	0.01
Chlorantraniliprole	--	--	--	2.5	1	1	1	---	0.01
Chlorpyrifos	--	--	--	0.01	0.5	0.5	0.2	0.3	0.2
Clethodim	0.2	---	0.1	--	--	--	3	---	0.5
Clofentezine	--	--	--	1	2	0.02	--	--	--
Clopyralid	0.5	---	0.5	--	--	--	4	---	0.5
Clothianidin	--	--	--	0.6	---	0.6	--	--	--
Cryolite	--	--	--	7	---	---	7	---	---
Cyazofamid	--	--	--	1.5	---	0.5	--	--	--
Cyfluthrin	--	--	--	1	---	0.3	--	--	--
Cymoxanil	--	--	--	0.1	---	0.2	--	--	--
Cyprodinil	3	---	2	2	3	5	5	2	5
D-Phenothrin	0.01	---	0.05	0.01	---	0.05	0.01	---	0.05
DCPA	--	--	--	--	--	--	2	---	2
Diazinon	--	--	--	--	--	--	0.5	0.1	0.01
Dichlobenil	0.15	---	0.1	0.15	---	0.1	--	--	--
Dicloran	--	--	--	10	7	0.1	--	--	--
Dicofol	--	--	--	5	5	2	10	---	0.02
Difenoconazole	--	--	--	4	0.1	0.5	--	--	--
Dimethomorph	--	--	--	3.5	2	3	--	--	--
Dinotefuran	--	--	--	0.9	---	---	--	--	--
Diuron	0.1	---	0.05	0.05	---	0.05	--	--	--
Dodine	--	--	--	--	--	--	5	---	5
Endosulfan	--	--	--	2	---	0.5	2	---	0.05

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Elderberry (ppm) (Proposed Representative Commodity, Large shrub/tree berries, Subgroup 004C)			Grapes (ppm) (Proposed Representative Commodity, Small fruit vine climbing, Subgroup 004D)			Strawberry (ppm) (Proposed Representative Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Esfenvalerate	1	---	0.02	--	--	--	--	--	--
Ethephon	--	--	--	2	1	0.7	--	--	--
Etoxazole	--	--	--	0.5	---	0.02	0.5	---	0.2
Famoxadone	--	--	--	2.5[1]	2	2	--	--	--
Fenamidone	--	--	--	1[1]	---	0.5	--	--	--
Fenarimol	--	--	--	0.1	0.3	0.3	--	--	--
Fenbuconazole	0.3	---	0.05	--	--	--	--	--	--
Fenbutatin-oxide	--	--	--	5	5	2	10	10	1
Fenhexamid	5	---	5	4	15	5	3	10	5
Fenpropathrin	3	---	0.01	5	5	0.01	2	---	2
Fenpyroximate	--	--	--	1	---	0.3	1	---	1
Ferbam	--	--	--	4	5	---	--	--	--
Fluazinam	7	---	0.05	--	--	--	--	--	--
Flubendiamide	--	--	--	1.4	---	0.01	--	--	--
Fludioxonil	2	---	2	1	2	2	2	3	3
Flumioxazin	0.02	---	0.05	0.02	---	0.05	0.07	---	0.05
Fluopicolide	--	--	--	2	2	2	--	--	--
Fluoxastrobin	--	--	--	--	--	--	1.9	---	0.05
Fluridone	0.1	---	---	0.1	---	---	0.1	---	---
Forchlorfenuron	0.01	---	0.05	0.03	---	0.05	--	--	--
Fosetyl-Al	40	---	2	10	---	100	75	---	75
Glufosinate-ammonium	0.15	0.1	0.5	0.05	0.1	0.1	--	--	--
Glyphosate	0.2	---	0.1	0.2	---	0.5	0.2	---	0.1
Halosulfuron-methyl	0.05	---	0.01	--	--	--	--	--	--
Hexythiazox	--	--	--	1	1	1	3	0.5	0.5
Imidacloprid	3.5	5	5	1	1	1	0.5	0.5	0.5
Indoxacarb	1.5	---	1	2	2	2	--	--	--
Inorganic bromide[1]	--	--	--	20	20	20	60	30	30
Iprodione	--	--	--	60	10	10	15	10	15
Kresoxim-methyl	--	--	--	1	1	1	--	--	--
Malathion	--	--	--	8	5	0.02	8	1	0.02
Mancozeb	--	--	--	7	5	5	--	--	--
Mandipropamid	--	--	--	1.4	2	2	--	--	--
Maneb	--	--	--	7	5	5	--	--	--
Mepiquat chloride	--	--	--	1	---	0.3	--	--	--
Meptyldinocap	--	--	--	0.2	---	1	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Elderberry (ppm) (Proposed Representative Commodity, Large shrub/tree berries, Subgroup 004C)			Grapes (ppm) (Proposed Representative Commodity, Small fruit vine climbing, Subgroup 004D)			Strawberry (ppm) (Proposed Representative Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Mesotrione	0.01	---	0.05	--	--	--	--	--	--
Metalaxyl	--	--	--	2	1	2	10	---	0.5
Metaldehyde	0.15	---	0.05	--	--	--	6.25	---	0.1
Methomyl	--	--	--	5	0.3	0.02	--	--	--
Methoxyfenozide	3	---	0.02	1	1	1	1.5	2	0.02
Mevinphos	--	--	--	0.5	---	0.01	1	---	0.01
Myclobutanil	--	--	--	1	1	1	0.5	1	1
Naled	--	--	--	0.5	---	---	1	---	---
Napropamide	0.1	---	0.1	0.1	---	0.1	0.1	---	0.2
Norflurazon	--	--	--	0.1	---	---			
Novaluron	7	---	0.01	--	--	--	0.5	---	0.01
Oryzalin	0.05	---	0.01	0.05	---	0.05	0.05	---	0.01
Oxyfluorfen	--	--	--	0.05	---	0.1			
Oxydemeton-methyl	--	--	--	--	--	--	2	---	0.02
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.25	0.01	0.02
Pendimethalin	--	--	--	0.1	---	0.05	0.1	---	0.05
Penoxsulam	--	--	--	0.01	---	0.01	--	--	--
Phosalone	--	--	--	10	---	0.05	--	--	--
Phosmet	--	--	--	10	10	0.05	--	--	--
Piperonyl Butoxide	--	--	--	8	---	---	--	--	--
Propargite	--	--	--	10	7	7	--	--	--
Propiconazole	1	---	0.05				1.3	---	0.05
Propyzamide	--	--	--	0.1	---	0.02	--	--	--
Pyraclostrobin	4	---	3	2	2	1	1.2	0.5	1
Pyrethrins	--	--	--	1	---	1	--	--	--
Pyridaben	--	--	--	1.5	---	0.5	2.5	---	1
Pyrimethanil	--	--	--	5	4	5	3	3	5
Pyriproxyfen	1	---	0.05	2.5	---	0.05	0.3	---	0.05
Quinoxyfen	--	--	--	0.6	2	1	0.9	1	0.3
Rimsulfuron	--	--	--	0.01	---	0.05	--	--	--
S-metolachlor	0.15	---	0.05	--	--	--	--	--	
Saflufenacil	--	--	--	0.03	---	---	--	--	--
Sethoxydim	--	--	--	1	---	1	10	---	0.5
Simazine	--	--	--	0.2	---	0.2	0.25	---	0.1
Spinetoram	0.25	---	0.05	0.5	---	0.5	1	---	0.2
Spinosad	0.25	---	0.3	0.5	0.5	0.5	1	---	0.3
Spirodiclofen	--	--	--	2	0.2	2	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Elderberry (ppm) (Proposed Representative Commodity, Large shrub/tree berries, Subgroup 004C)			Grapes (ppm) (Proposed Representative Commodity, Small fruit vine climbing, Subgroup 004D)			Strawberry (ppm) (Proposed Representative Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Spiromesifen	--	--	--	--	--	--	2	---	1
Spirotetramat	--	--	--	1.3	2	2	0.4	---	0.1
Sulfentrazone	--	--	--	--	--	--	0.6	---	---
Sulfur dioxide	--	--	--	10	---	---	--	--	--
Tebuconazole	--	--	--	5	2	2	--	--	--
Tebufenozide	3	---	0.05	3	2	3	--	--	--
Terbacil	--	--	--	--	--	--	0.1	---	---
Tetraconazole	--	--	--	0.2	---	0.5	--	--	--
Thiamethoxam	0.2	---	0.05	0.2	---	0.5	0.3	---	0.05
Thiophanate-methyl	--	--	--	5	3	0.1	7	1	0.1
Thiram	--	--	--	--	--	--	7	5	10
Trifloxystrobin	--	--	--	2	3	5	1.1	0.2	0.5
Triflumizole	--	--	--	2.5	---	3	2	---	0.2
Trifluralin	--	--	--	0.05	---	0.1	--	--	--
Zeta-Cypermethrin	0.8	---	0.05	2	0.2	0.5	--	--	--
Zinc phosphide	--	--	--	0.01	---	0.05	--	--	--
Ziram	--	--	--	7	5	0.1	7	5	0.1
Zoxamide	--	--	--	3	5	5	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Cranberry (ppm) (Proposed Member Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU
2,4-D	0.5	0.1	0.05
Acephate	0.5	0.5	0.02
Acetamiprid	0.6	---	0.01
Azoxystrobin	0.5	0.5	0.5
Bifenazate	1.5	---	0.01
Buprofezin	2.5	---	0.05
Carbaryl	3	5	0.05
Chlorimuron-ethyl	0.02	---	---
Chlorothalonil	5	5	2
Chlorpyrifos	1	1	0.05
Clethodim	0.5	---	0.5
Clopyralid	4	---	4
Clothianidin	0.01	---	0.02
Cryolite	7	---	---
D-Phenothrin	0.01	---	0.05
Diazinon	0.5	0.2	0.2
Dichlobenil	0.1	---	0.1
Fenbuconazole	0.5	---	1
Fenpyroximate	1	---	0.5
Ferbam	4	5	---
Fluoxastrobin	1.9	---	0.05
Fluridone	0.1	---	---
Fosetyl-Al	0.5	---	2
Glyphosate	0.2	---	0.1
Imidacloprid	0.05	0.05	0.05
Indoxacarb	0.9	1	1
Malathion	8	---	0.02
Mancozeb	7	5	5
Maneb	7	5	5
Mesotrione	0.01	---	0.05
Metalaxyl	4	---	0.05
Methamidophos	0.1	---	0.01
Methoxyfenozide	0.5	0.7	0.02
Napropamide	0.1	---	0.1
Norflurazon	0.1	---	---
Novaluron	0.45	---	0.01
Oryzalin	0.05	---	0.1
Paraquat dichloride	0.05	0.01	0.02
Phosmet	10	---	10

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

Table 9. Residue Tolerances established on Berries and other small fruits Group 004 (continued)
(FASonline: mrldatabase.com; MRLs as of November 2, 2010)

	Cranberry (ppm) (Proposed Member Commodity, Low growing berries, Subgroup 004E)		
Compound	US	Codex	EU
Propiconazole	1	(0.3)	0.05
Pyridaben	0.5	---	0.5
Pyriproxyfen	1	---	1
Quinclorac	15	---	0.05
Sethoxydim	2.5	---	0.5
Simazine	0.25	---	0.25
Spinetoram	0.04	---	0.05
Spinosad	0.01	---	0.02
Spiromesifen	2	---	0.02
Tebufenozide	1	(0.5)	0.5
Thiamethoxam	0.02	---	0.05

Note: That shaded cells indicate that the MRL is established for the respective crop group or subgroup rather than for the individual commodity.

D.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Berries and other small fruits:

The berries and small fruits are temperate zone crops adapted depending upon the species to either cool or warm temperatures. In general, the berries and small fruits are predominately woody perennial dicot angiosperms (flowering plants) usually propagated vegetatively, and bear small to moderately sized fruit on herbs, vines, shrubs or small trees that are planted densely on fairly small production areas. Modern cultural practices and newer cultivars have diminished differences between tree and small fruit crops with the development of dwarf trees, trellised orchards and tissue culture propagation.

Members of the Berry and small fruit group are attacked by many leaf and/or fruit pests and include several insect, plant disease organisms (bacterial, fungal, and viral), nematode, and many weed pest problems. Considering the similarities of these commodities in plant biology such as their fruit structure and cultural practices, they are likely to encounter similar pest problems, and hence have similar needs for pest control products with similar use patterns.

There are no significant animal feed items associated with any of the commodities in the Berries and other small fruits group. Therefore, since there are no animal feed items there is no reasonable expectation of residues in meat, milk, poultry, or eggs.

D.5. Conclusion – Berries and other small fruits

Proposed representative commodities (Blackberry or Raspberry; Blueberry; Elderberry; Grapes and Strawberry) for Group 004 Berries and other small fruits were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

Proposed representative commodities of the Berry and small fruit crop group find widespread distribution throughout the world. Strawberry is found in almost ever country from the Arctic to the tropics, and is more widely distributed than grapes. Blackberry, highbush blueberry, grape, and strawberry are also widely grown throughout the world. FAO reports the production of all of the proposed representative commodities (raspberries, blueberries, grapes and strawberries) except for elderberry. FAO also reports production data for subgroup member commodities of currants, cranberries and gooseberries. Worldwide, grape is by far the most harvested berry and small fruit, followed by strawberries.

(2) A representative commodity should be likely to contain the highest residues:

Berries and small fruit generally have maximum exposure of their edible parts to pesticide residues because of large surface to weight ratios, and peel or edible skin consumed or in contact during juice extraction. Fruits are generally small with large surface area in proportion to weight and the entire fruit is often consumed. Generally, the fruits develop in three months or less from time of bloom. Therefore, one would expect pesticide residues to be similar in most of the members of the berries and small fruits, with distinct difference in cultural practices based on whether the crop is grown on the ground, or on a shrub or maintained on a trellis or as a small tree. Differences in cultural practices help organize the crop group into subgroups. Since many of the member crops are minor in production and/or consumption many of the established tolerances are based on crop groups or subgroups. However, it can be expected that all members of the subgroups will have similar residue levels based on similarities of the raw agricultural commodities (RAC's), cultural practices, and pest problems.

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

In general, the berries and small fruits are predominately woody perennial dicot angiosperms (flowering plants) usually propagated vegetatively, grown on their own roots, and bear small to moderately sized fruit on herbs, vines, shrubs or small trees that are planted densely on fairly small production areas. Members of the Berry and small fruit group are attacked by many leaf and/or fruit pests and include several insect, plant disease organisms (bacterial, fungal, and viral), nematode, and many pest problems with weeds. Considering the similarities of these commodities in plant biology such as their fruit structure and cultural practices, they are likely to encounter similar pest problems, and hence have similar needs for pest control products with similar use patterns. There are no significant animal feed items associated with any of the commodities in the Berries and other small fruits group. Therefore, since there are no animal feed items there is no reasonable expectation of residues in meat, milk, poultry, or eggs.

E. Assorted Tropical and Sub-Tropical Fruits – Edible Peel

Proposed representative commodities for Group 005 Assorted Tropical and Sub-tropical Fruit – Edible Peel from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Group 005 Assorted tropical and sub-tropical fruits – edible peel	Olive; Fig or Guava and Date	Assorted tropical and sub-tropical fruits – edible peel (FT 0026): Açaí; African plum; Almondette; Ambarella; Apak palm; Apple berry; Arazá; Arbutus berry; Babaco; Bacaba palm; Bacaba-de-leque; Barbados cherry (acerola); Bayberry, Red; Bignay; Bilimbi; Breadnut; Cabeluda; Cajou (pseudofruit); Cambucá; Carandas-plum; Carob; Cashew apple; Ceylon iron wood; Ceylon olive; Cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; Chirauli-nut; Ciruela verde; Coco plum; Date; Davidson's plum; Desert date; Doum palm; False sandalwood; Fig; Fragant Manjack; Gooseberry, Abyssinian; Gooseberry, Ceylon; Gooseberry, Indian; Gooseberry, Otaheite; Governor's plum; Grumichama; Guabiroba; Guava; Guava, Brazilian; Guava, Cattley, Guava, Costa Rican; Guava, Para; Guava berry; Guayabillo; Hog plum (yellow mombin); Illawarra plum; Imbé; Imbu; Jaboticaba; Jamaica cherry; Jambolan; Java apple (wax jambu); Jelly palm; Jujube, Chinese; Jujube, Indian; Kaffir plum; Kakadu plum; Kapundung; Karnada (Caranda); Kumquats; Kwai muk; Lemon aspen; Limequats; Mangaba; Marian plum; Mombin, Malayan; Mombin, purple; Monkeyfruit; Monos plum; Mountain cherry; Nance; Natal plum; Noni; Olives (table olives); Papaya, Mountain; Patauá; Peach Palm; Persimmon, Black; Persimmon, Japanese; Pitomba; Pomerac; Rambai; Rose apple; Rumberry; Sea grape; Sentul; Sete-capotes; Silver aspen; Star fruit (carambola); Surinam cherry; Tamarind (sweet varieties); Uvalha; Water apple; Water berry; Water pear
Subgroup 005A, Assorted tropical and sub-tropical, Edible Peel – Small	Olive	Edible Peel - Small (FT 2011): African plum; Almondette; Apple berry; Arbutus berry; Barbados cherry (acerola); Bayberry, Red; Bignay; Breadnut; Cabeluda; Carandas-plum; Ceylon iron wood; Ceylon olive; Cherry-of-the-Rio-Grande; Chinese olive, black; Chinese olive, white; Chirauli-nut; Coco plum; Desert date; False sandalwood; Fragant Manjack; Gooseberry, Abyssinian; Gooseberry, Ceylon; Gooseberry, Otaheite; Governor's plum; Grumichama; Guabiroba; Guava berry; Hog plum (yellow mombin); Illawarra plum; Jamaica cherry; Jambolan; Java apple (wax jambu); Jujube, Chinese; Kaffir plum; Kakadu plum; Karnada (Caranda); Kumquats; Kapundung; Lemon aspen; Limequats; Monos plum; Mountain cherry; Olives (table olives); Persimmon, Black; Pitomba; Rumberry; Sea grape; Sete-capotes; Silver aspen; Water apple; Water berry; Water pear

Proposed representative commodities for Group 005 Assorted Tropical and Sub-tropical Fruit – Edible Peel from Table 1 (continued):

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Subgroup 005B, Assorted tropical and sub-tropical, Edible Peel – Large	Fig or Guava	Edible Peel - Large (FT 2012): Ambarella; Arazá; Babaco; Bilimbi; Cajou (pseudofruit); Cambucá; Carob; Cashew apple; Ciruela verde; Davidson's plum; Fig; Gooseberry, Indian; Guava; Guava, Brazilian; Guava, Cattley, Guava, Costa Rican; Guava, Para; Guayabillo; Imbé; Imbu; Jaboticaba; Jujube, Indian; Kwai muk; Mangaba; Marian plum; Mombin, Malayan; Mombin, purple; Monkeyfruit; Nance; Natal plum; Noni; Papaya, Mountain; Persimmon, Japanese; Pomerac; Rambai; Rose apple; Sentul; Star fruit (carambola); Surinam cherry; Tamarind (sweet varieties); Uvalha
Subgroup 005C, Assorted tropical and sub-tropical, Edible Peel – Palms	Date	Edible Peel - Palms (FT 2013): Açaí; Apak palm; Bacaba palm; Bacaba-de-leque; Date; Doum palm; Jelly palm; Patauá; Peach Palm

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

E.1. Introduction – Assorted Tropical and Sub-Tropical Fruits – Edible Peel

A tropical fruit is a fruit produced by a tree, shrub or vine native to the tropics. The tropics are generally defined as the region of the globe between the Tropic of Cancer and the Tropic of Capricorn. The environment of the tropics is warm to hot and humid year round, creating a unique habitat that results in trees, shrubs, and vines that grow nowhere else in the world. The sub-tropics are geographically located immediately north and south of the tropical zone and have climates much milder than temperate, northern zones. Some tropical fruits are well known throughout the world and have been consumed for centuries. Some of these fruits include bananas, pomegranates, mangoes, papaya, avocados, pineapple, guavas, passionfruit and dates. Many of these fruits are available in markets year-round from a steady supply of fruit produced in the tropics and sub-tropics. Other tropical fruit are less well known, but are popular in specific countries or regions of the world. Other previously less well known fruit have recently become popular in the US. For example açaí fruit is now a popular health drink.

The Tropical and Sub-Tropical fruits - edible peel group consists of a diverse group of plants from many plant families. Within this group, fruit size of tropical and sub-tropical fruits with edible peels range from a diameter of 0.2 inches (fruit of chirauli-nut, *Buchanania latifolia* Roxb.) to 8 inches (babaco, *Vasconcellea x heilbornii* (V. M. Badillo) V. M. Badillo). Many publications have documented the relationship between surface area and mass of a commodity. In general, the smaller the object, the larger the ratio of surface area to weight becomes. For example, pesticide deposits on grapes can be expected to be about 3X the pesticide deposit on apples due to the higher surface area per unit weight. Chili peppers are also often cited as an example. Because of their size, they normally have a higher residue than sweet peppers (with the same GAP) and are likely to drive a tolerance or MRL for peppers. Because of the diverse nature of tropical and sub-tropical fruits, subgroups are proposed based on fruit size (small and medium to large) and also because of the botanical and morphological similarity of the palm commodities into a palm subgroup.

Palm commodities are proposed to be classified in a separate subgroup based on the botanical similarity of trees of the family Arecaceae (alt. Palmae). Generally, trees within the palm family contain a tall, unbranched stem that can reach 80 meters in height, a rosette of leathery, evergreen palmate (fan-like) to pinnate (feather-like) spirally arranged leaves that measure several meters long, spike or branched inflorescences, and berry or drupe fruit. In most palms, fruit is produced in clusters that hang from the tree. Because fruit is produced in clusters that are partially exposed to the elements and fruit is located considerably higher on palm trees than other tropical and sub-tropical fruits, similar use patterns of pesticide applications are expected to occur and similar residue patterns can be expected within the palm group.

Three subgroups are proposed for Group 005 Assorted Tropical and Sub-tropical Fruits – Edible Peel: (1) Subgroup 005A, Tropical and subtropical fruits, edible peel - small fruits; (2) Subgroup 005B, Tropical and subtropical fruits, edible peel - Medium to large fruits and (3) Subgroup 005C, Tropical and subtropical fruits, edible peel - Tropical Palm fruits.

E.2. Production and/or Consumption – Assorted Tropical and Sub-Tropical Fruits – Edible Peel

Table 10 on the following page provides a list of the hectares and production in metric tonnes from various countries and regions that grow tropical and sub-tropical fruit with edible peel. FAO reports the production of all of the proposed representative commodities (olive, fig, guava and date). FAO also reports the production of carob, cashewapple, mangos and persimmons. Significant world total production is reported for fig and guava (proposed representative commodities for Subgroup 005B) compared to carob, cashewapple and persimmon (member commodities).

Table 10. Production of Assorted Tropical and Sub-Tropical Fruits – Edible Peel by Country and Region in 2008 (FAO)

Countries/ Regions	Olive (proposed representative commodity, Small fruits, Subgroup 005A)	Fig (proposed representative commodity, Medium to Large fruits, Subgroup 005B)	Mangoes, Mangosteens and Guavas (guava, proposed representative commodity, Medium to Large Fruits, Subgroup 005B)	Carob (proposed member commodity, Medium to Large Fruits, Subgroup 005B)	Cashewapple (cashew (fruit) (proposed member commodity, Medium to Large Fruits, Subgroup 005B)	Persimmon (proposed member commodity, Medium to Large Fruits, Subgroup 005B)	Date (proposed representative commodity, Palm Fruit, 005C)
Australia	10,500 Ha 57,123 Tonnes	30 Ha 85 Tonnes	9500 Ha 57947 Tonnes	NA NA	NA NA	82 Ha 715 Tonnes	NA NA
New Zealand	NA NA	NA NA	NA NA	NA NA	NA NA	180 Ha 3,000 Tonnes	NA NA
United States	12,141 Ha 60,600 Tonnes	3,804 Ha 39,281 Tonnes	675 Ha 2950 Tonnes	NA NA	NA NA	No data No data	2,064 Ha 17,146 Tonnes
Africa	3,940,207 Ha 2,862,518 Tonnes	186,717 Ha 490,477 Tonnes	603968 Ha 3395045 Tonnes	13,371 Ha 29,216 Tonnes	71,000 Ha 191,000 Tonnes	NA NA	414,108 Ha 2,634,247 Tonnes
North America	12,141 Ha 60,600 Tonnes	3,804 Ha 39,281 Tonnes	675 Ha 2950 Tonnes	NA NA	NA NA	NA NA	2,064 Ha 17,146 Tonnes
Central America	9,112 Ha 19,436 Tonnes	1,084 Ha 6,123 Tonnes	214195 Ha 2128243 Tonnes	56 Ha 28 Tonnes	No data No data	45 Ha 442 Tonnes	596 Ha 2,788 Tonnes
South America	79,371 Ha 238,601 Tonnes	4,055 Ha 29,865 Tonnes	141692 Ha 1908411 Tonnes	NA NA	610,001 Ha 1,660,005 Tonnes	8,797 Ha 173,297 Tonnes	82 Ha 446 Tonnes
Asia	1,598,893 Ha 2,670,784 Tonnes	130,694 Ha 405,550 Tonnes	3651624 Ha 26543548 Tonnes	5,879 Ha 21,616 Tonnes	NA NA	752,131 Ha 3,441,058 Tonnes	826,301 Ha 4,441,347 Tonnes
Europe	4,899,749 Ha 11,749,599 Tonnes	120,622 Ha 105,559 Tonnes	NA NA	69,478 Ha 126,224 Tonnes	NA NA	2,732 Ha 50,441 Tonnes	4,037 Ha 14,000 Tonnes
World Total	10,549,973 Ha 17,658,661 Tonnes	447,006 Ha 1,076,940 Tonnes	4,723,906 Ha 34,889,014 Tonnes	88,784 Ha 177,084 Tonnes	681,001 Ha 1,851,005 Tonnes	763,967 Ha 3,668,953 Tonnes	1,247,188 Ha 7,109,974 Tonnes

Note: This table reports only the tropical fruits (edible peel) available on the FAO website.

E.3. Residue Tolerances – Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005

A comparison of US, Codex and EU tolerances is shown in Table 11. A majority of EU tolerances for tropical fruits, edible peel are based on inclusion in a Miscellaneous fruit or Fruit Fresh or Frozen; Nuts group. Many of the US tolerances are based on crop definitions for tropical fruits, but in general the proposed representative commodities are equal to or greater than the proposed member commodities in the respective subgroups. Tropical and subtropical fruits with edible peel in subgroup 005A (small fruits) can be expected to have higher residues than medium to large fruits (subgroups 005B) because of the greater surface area to weight ratio of small fruits

Table 11. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005 (FASonline: mrldatabase.com; tolerances as of November 10, 2010)

	Olive (ppm) (Proposed Representative Commodity; Small Fruits, Subgroup 005A)			Acerola (ppm) (Proposed Member Commodity; Small Fruits, Subgroup 005A)			Wax Jambu (ppm) (Proposed Member Commodity; Small Fruits, Subgroup 005A)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.7	--	0.05	--	--	--	--	--	--
1-Naphthaleneacetic acid	0.7	--	0.05	--	--	--	--	--	--
Azoxystrobin	--	--	--	2	--	--	2	--	--
Bifenazate	--	--	--	0.9	--	--	0.9	--	--
Buprofezin	3.5	5	2	0.3	--	--	0.3	--	--
Carbaryl	10	30	5	--	--	--	--	--	--
Carfentrazone-ethyl	0.1	--	0.01	0.1	--	--	0.1	--	--
Chlorantraniliprole	4	--	0.01	2	--	--	4	--	--
Diuron	1	--	0.2	--	--	--	--	--	--
Fenpropathrin	5	--	0.01	--	--	--	--	--	--
Glyphosate	0.2	--	1	0.2	--	--	0.2	--	--
Imidacloprid	--	--	--	1	--	--	1	--	--
Methidathion	0.05	1	1	--	--	--	--	--	--
Methoxyfenozide	--	--	--	0.4	--	--	0.4	--	--
Oryzalin	0.05	--	0.01	--	--	--	--	--	--
Oxyfluorfen	0.05	--	1	--	--	--	--	--	--
Paraquat dichloride	0.05	0.1	0.02	0.05	--	--	--	--	--
Pendimethalin	0.1	--	0.05	--	--	--	--	--	--
Pyriproxyfen	1	--	0.05	0.1	--	--	0.1	--	--
Simazine	0.2	--	0.1	--	--	--	--	--	--
Spinetoram	--	--	--	0.3	--	--	0.3	--	--
Spinosad	--	--	--	1.5	--	--	0.3	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 11. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005 (continued)
(FASonline: mrldatabase.com; tolerances as of November 10, 2010)

	Fig (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Subgroup 005B)			Guava (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Subgroup 005B)			Ambarella (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Atrazine	--	--	--	0.05	--	0.05	--	--	--
Azoxystrobin	--	--	--	2	--	0.05	--	--	--
Bifenazate	--	--	--	0.9	--	0.01	--	--	--
Buprofezin	--	--	--	0.3	--	0.05	--	--	--
Carfentrazone-ethyl	0.1	--	0.01	0.1	--	0.01	--	--	--
Chlorantraniliprole	4	--	0.01	4	--	0.01	--	--	--
Chlorpyrifos	0.01	--	0.05	--	--	--	--	--	--
Clothianidin	0.05	--	0.02	--	--	--	--	--	--
d-Phenothrin	0.01	--	0.05	--	--	--	--	--	--
Diazinon	0.5	--	0.01	--	--	--	--	--	--
Forchlfenuron	0.01	--	0.05	--	--	--	--	--	--
Glyphosate	0.2	--	0.1	0.2	--	0.1	0.2	--	--
Imidacloprid	--	--	--	1	--	0.05	--	--	--
Malathion	8	--	0.02	8	--	0.02	--	--	--
Maneb	7	--	0.05	--	--	--	--	--	--
Methoxyfenozide	--	--	--	0.4	--	0.02	--	--	--
Oryzalin	0.05	--	0.01	0.05	--	0.01	--	--	--
Oxyfluorfen	0.05	--	0.05	0.05	--	0.05	--	--	--
Paraquat dichloride	0.05	--	0.02	0.05	0.01	0.02	--	--	--
Piperonyl butoxide	8	--	--	8	--	--	--	--	--
Propylene chlorohydrin	3	--	--	--	--	--	--	--	--
Propylene oxide	3	--	--	--	--	--	--	--	--
Pyrethrins	1	--	1	1	--	1	--	--	--
Pyriproxyfen	0.3	--	0.05	0.1	--	0.05	--	--	--
Spinetoram	0.1	--	0.05	0.3	--	0.05	--	--	--
Spinosad	0.1	--	0.02	0.3	--	0.02	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 11. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005 (continued)
(FASonline: mrldatabase.com; tolerances as of November 10, 2010)

	Feijoa (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)			Jaboticaba (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)			Persimmon (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	--	2	--	--	2	--	0.05
Bifenazate	0.9	--	--	0.9	--	--	--	--	--
Buprofezin	0.3	--	--	0.3	--	--	--	--	--
Carfentrazone-ethyl	0.1	--	--	0.1	--	--	0.1	--	0.01
Chlorantraniliprole	4	--	--	2	--	--	4	--	0.01
Chlorothalonil	--	--	--	--	--	--	1.5	--	0.01
Clofentezine	--	--	--	--	--	--	0.05	--	0.02
d-Phenothrin	--	--	--	--	--	--	0.01	--	0.05
Glyphosate	0.2	--	--	0.2	--	--	0.2	--	0.1
Imidacloprid	1	--	--	1	--	--	3	--	0.05
Methoxyfenozide	0.4	--	--	0.4	--	--	--	--	--
Napropamide	--	--	--	--	--	--	0.1	--	0.05
Oxyfluorfen	0.05	--	--	--	--	--	0.05	--	0.05
Paraquat dichloride	--	--	--	--	--	--	0.05	--	0.02
Phosphine	--	--	--	--	--	--	0.01	--	0.05
Pyriproxyfen	0.1	--	--	0.1	--	--	--	--	--
Spinetoram	0.3	--	--	0.3	--	--	--	--	--
Spinosad	0.05	--	--	0.3	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 11. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005 (continued)
(FASonline: mrldatabase.com; tolerances as of November 10, 2010)

	Starfruit (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)			Surinam Cherry (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)			Tamarind (ppm) (Proposed Member Commodity; Medium To Large Fruits, Subgroup 005B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	--	--	--	--	2	--	0.1
Bifenazate	0.9	--	--	--	--	--	--	--	--
Buprofezin	0.3	--	--	--	--	--	--	--	--
Carfentrazone-ethyl	0.1	--	--	--	--	--	--	--	--
Chlorantraniliprole	4	--	--	--	--	--	--	--	--
Chlorothalonil	3	--	--	--	--	--	--	--	--
Fludioxonil	10	--	--	--	--	--	--	--	--
Glyphosate	0.2	--	--	0.2	--	0.1	0.2	--	0.1
Imidacloprid	1	--	--	--	--	--	--	--	--
Metalaxyl-M	0.2	--	--	--	--	--	--	--	--
Methidathion	0.1	--	--	--	--	--	--	--	--
Methoxyfenozide	0.4	--	--	--	--	--	--	--	--
Pyriproxyfen	0.1	--	--	--	--	--	--	--	--
Spinetoram	0.3	--	--	--	--	--	--	--	--
Spinosad	0.3	--	--	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 11. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Edible Peel Group 005 (continued)
(FASonline: mrldatabase.com; tolerances as of November 10, 2010)

	Date (ppm) (Proposed Representative Commodity; Palm Fruits, Subgroup 005C)		
Compound	US	Codex	EU
Carfentrazone-ethyl	0.1	--	0.01
Glyphosate	0.2	--	0.1
Hexythiazox	1	2	0.5
Malathion	8	--	0.02
Oxyfluorfen	0.05	--	0.05
Phosphine	0.1	--	0.05
Pyriproxyfen	0.3	--	0.05
Spinetoram	0.1	--	0.05
Spinosad	0.1	--	0.02

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

E.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Assorted Tropical and Sub-Tropical Fruits – Edible Peel:

The majority of tropical fruits develop on trees or shrubs, while a small portion of tropical fruits grow on vines on trellises. Since tropical and sub-tropical fruits are grown in similar climates, these crops will have similar production methods. Environmental conditions in the tropics and sub-tropics are favorable for a wide range of weed, insect and plant diseases on a year-round basis. These diverse insects, weeds and pathogens often need to be controlled by herbicides, insecticides and fungicides.

There are no significant animal feed items associated with any of the commodities in the Assorted Tropical and Sub-Tropical Fruits – Edible Peel group. Processed commodities would include dried fruit (fig), oil (olive) and various tropical juices (açaí, arazá, red bayberry, bilimbi, feijoa, guava and noni).

E.5. Conclusion – Assorted Tropical and Sub-Tropical Fruits – Edible Peel

Proposed representative commodities (Olive, Fig and Guava and Date) for Group 005 Assorted Tropical and Sub-Tropical Fruits – Edible Peel were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

FAO reports (Table 10) the production of all of the proposed representative commodities olive (subgroup 005A); fig and guava (subgroup 005B) and date (subgroup 005C). Also reported are production data for member commodities carob (subgroup 005B), cashew (pseudofruit) (subgroup 005B), and persimmon (subgroup 005B). Worldwide, the most harvested tropical fruits with edible peel include the proposed representative commodities of olive, fig, guavas and dates.

(2) A representative commodity should be likely to contain the highest residues:

A majority of EU tolerances for tropical fruits, edible peel are based on inclusion in a Miscellaneous fruit or Fruit Fresh or Frozen; Nuts group. Many of the US tolerances are based on crop definitions for tropical fruits, but in general the proposed representative commodities are equal to or greater than the proposed member commodities in the respective subgroups. Tropical and subtropical fruits with edible peel in subgroup 005A (small fruits) can be expected to have higher residues than medium to large fruits (subgroups 005B) because of the greater surface area to weight ratio of small fruits.

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

The majority of tropical fruits develop on trees or shrubs, while a small portion of tropical fruits grow on vines on trellises. Since tropical and sub-tropical fruits are grown in similar climates, these crops have similar production methods. Environmental conditions in the tropics and sub-tropics are favorable for a wide range of weed, insect and plant diseases on a year-round basis. These diverse insects, weeds and pathogens often need to be controlled by herbicides, insecticides and fungicides.

F. Assorted Tropical and Sub-Tropical Fruits – Inedible Peel

Proposed representative commodities for Group 006 Assorted Tropical and Sub-tropical Fruit – Inedible Peel from Table 1 are as follows:

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Group 006 Assorted tropical and sub-tropical fruits – inedible peel	Litchi (lychee); Avocado; Pomegranate or Mango; Banana and Papaya; Atemoya; Pineapple; Dragonfruit; Prickly pear; Kiwifruit or Passionfruit and Muriti or Palmyra Palm	Assorted tropical and sub-tropical fruits – inedible peel (FI 0030): Abiu; Aisen; Akee apple; Atemoya; Avocado; Bacuri; Bael fruit; Banana; Binjai; Biriba; Breadfruit; Burmese grape; Canistel; Cupuacú; Champedak; Cherimoya; Custard apple; Durian; Elephant apple; Etambe; Feijoa; Grandilla; Grandilla, Giant; Guriri; Ilama; Ingá; Jackfruit; Jatobá; Kei apple; Kiwifruit; Kokam; Langstat; Lanjut; Longan; Lucuma; Litchi (lychee); Mabolo; Madras-thorn; Mammy apple; Manduro; Mango; Mango, horse; Mango, Saipan; Mangosteen; Marang; Marmalade-box; Matisia; Mesquite; Mongongo; Monkey-bread tree; Monstera; Muriti; Naranjilla; Paho; Palmyra palm; Papaya; Passionflower, Winged-stem; Passion fruit; Passion fruit, banana; Pawpaw; Pawpaw, small flower; Pelipisan; Pequi; Persimmon, American; Pineapple; Pitaya; Pomegranate; Poshte; Prickly pear, Pulasan; Quandong; Rambutan; Saguaro; Salak; Sapodilla; Sapote, black; Sapote, green; Sapote, Mammey; Sapote, white; Sataw; Satinleaf; Screwpine; Sierra Leone-tamarind; Soncoya; Soursop; Spanish lime; Star apple; Sugar apple; Sun sapote; Tamarillo (tree tomato); Tamarind-of-the-Indies; Velvet tamarind; Wampi; White star apple; Wild loquat;
Subgroup 006A, Assorted tropical and sub-tropical, Inedible Peel, Small	Litchi (lychee) or Spanish Lime	Inedible Peel - Small (FI 2021): Aisen; Bael fruit; Burmese grape; Ingá; Litchi (lychee); Longan: Madras-thorn; Manduro; Matisia; Mesquite; Mongongo; Pawpaw, small flower; Satinleaf; Sierra Leone-tamarind; Spanish lime; Velvet tamarind; Wampi; White star apple
Subgroup 006B, Assorted tropical and sub-tropical, Inedible Smooth Peel - Large	Avocado; Pomegranate or Mango; Banana and Papaya	Inedible Smooth Peel - Large (FI 2022): Abiu; Akee apple; Avocado; Bacuri; Banana; Binjai; Canistel; Cupuacú; Etambe; Feijoa; Jatobá; Kei apple; Kokam; Langstat; Lanjut; Lucuma; Mabolo; Mango; Mango, horse; Mango, Saipan; Mangosteen; Naranjilla; Paho; Papaya; Pawpaw; Pelipisan; Pequi; Persimmon, American; Pomegranate; Quandong; Sapote, black; Sapote, green; Sapote, white; Sataw; Star apple; Tamarind-of-the-Indies; Tamarillo (tree tomato); Wild loquat

Table 1. Examples of the Selection of Representative Commodities for Type 01 Fruits (continued)

Codex Group / Subgroup	Examples of Representative Commodities [1,2]	Extrapolation to the following commodities
Subgroup 006C, Assorted tropical and sub-tropical, Inedible, Rough or Hairy Peel - Large	Atemoya and Pineapple	Inedible rough or hairy peel - Large (FI 2023): Atemoya; Biriba; Breadfruit; Champedak; Cherimoya; Custard apple; Durian; Elephant apple; Ilama; Jackfruit; Mammy apple; Marmalade-box; Marang; Monkey-bread tree; Pineapple; Poshte; Pulasan; Rambutan; Sapodilla; Sapote, Mammey; Screwpine; Soncoya; Soursop; Sugar apple; Sun sapote
Subgroup 006D, Assorted tropical and sub-tropical, Inedible Peel - Cactus	Pitaya and Prickly pear	Inedible Peel - Cactus (FI 2024): Pitaya; Prickly pear; Saguaro
Subgroup 006E, Assorted tropical and sub-tropical, Inedible Peel - Vines	Kiwifruit or Passionfruit	Inedible Peel - Vines (FI 2025): Granadilla; Granadilla, Giant; Kiwifruit; Monstera; Passionflower, Winged-stem; Passionfruit; Passionfruit, banana
Subgroup 006F, Assorted tropical and sub-tropical, Inedible Peel - Palms	Muriti or Palmyra Palm	Inedible Peel - Palms (FI 2026): Guriri; Muriti; Palmyra Palm; Salak

[1] Alternative representative commodities may be selected based on documented regional/country differences in dietary consumption and/or areas of production.

F.1. Introduction – Assorted Tropical and Sub-Tropical Fruits – Inedible Peel

A tropical fruit is a fruit produced by a tree, shrub or vine native to the tropics. The tropics are generally defined as the region of the globe between the Tropic of Cancer and the Tropic of Capricorn. The environment of the tropics is warm to hot and humid year round, creating a unique habitat that results in trees, shrubs, and vines that grow nowhere else in the world. The sub-tropics are geographically located immediately north and south of the tropical zone and have climates much milder than temperate, northern zones. Some tropical fruits are well known throughout the world and have been consumed for centuries. Some of these fruits include bananas, pomegranates, mangoes, papaya, avocados, pineapple, guavas, passionfruit and dates. Many of these fruits are available in markets year-round from a steady supply of fruit produced in the tropics and sub-tropics. Other tropical fruit are less well known, but are popular in specific countries or regions of the world. Other previously less well known fruit have recently become popular in the US. For example açaí fruit is now a popular health drink.

The Assorted Tropical and Subtropical fruits - inedible peel group consists of a diverse group of plants from many plant families. Within this group, fruit size ranges from an approximate diameter of 1 centimeter (fruit of satinleaf, *Chrysophyllum oliviforme* L.) to 50 centimeters (fruit of jackfruit, *Artocarpus heterophyllus* Lam.). In addition to size, the peel texture of tropical and subtropical fruit varies from a smooth peel (banana, *Musa* spp.; mango, *Mangifera indica* L.; papaya, *Carica papaya* L. and pomegranate, *Punica granatum* L.) to a knobby, (atemoya, *Annona cherimola* Mill. X A. *squamosa* L.), bumpy (breadfruit, *Artocarpus altilis* (Parkinson) Fosberg) or spiny (rambutan, *Nephelium lappaceum* L.) peel. Many publications have documented the relationship between surface area and mass of a commodity. In general, the smaller the object, the larger the ratio of surface area to weight becomes. For example, pesticide deposits on grapes can be expected to be about 3X the pesticide deposit on apples due to the higher surface area per unit weight. Chili peppers are also often cited as an example. Because of their size, they normally have a higher residue than sweet peppers (with the same GAP) and are likely to drive a tolerance or MRL for peppers. There is also indication that surface area/mass ratio plays a more important role on pesticide deposits than pubescence/serration present on surfaces. Because of this commodities were first sorted by size and then by peel texture for the medium to large fruit. Because of the diverse nature of tropical and sub-tropical fruits, subgroups are proposed based on fruit size (small and medium to large) and also because of the respective botanical and morphological similarities, subgroups were proposed for cactus, vine and palm subgroups.

Five subgroups are proposed for Group 006 Assorted Tropical and Sub-Tropical Fruits – Inedible Peel: (1) Subgroup 006A, Assorted Tropical and subtropical fruits – inedible peel – Small Fruits; (2) Subgroup 006B, Assorted Tropical and subtropical fruits – inedible peel – Medium to Large Fruits, Smooth Peel; (3) Subgroup 006C, Assorted Tropical and subtropical fruits – inedible peel – Medium to Large Fruits, Rough or Hairy Peel; (4) Subgroup 006D Assorted Tropical and subtropical fruits – inedible peel – Cactus and (5) Subgroup 006E, Assorted Tropical and subtropical fruits – inedible peel – Vines and (6) Subgroup 006F, Assorted Tropical and subtropical fruits – inedible peel – Tropical Palm Fruits.

F.2. Production and/or Consumption – Assorted Tropical and Sub-Tropical Fruits – Inedible Peel

Table 12 on the following pages provides a list of the hectares and production in metric tonnes from various countries and regions that grow tropical and sub-tropical fruit with inedible peel. FAO reports the production of the proposed representative commodities of avocado and pineapple. Production of the other representative commodities (lychee, pomegranate, atemoy, dragon fruit, prickly pear and passionfruit) are less significant, but the production of these commodities are greater than the member commodites of the proposed respective subgroups.

Table 12. Production of Assorted Tropical and Sub-Tropical Fruits – Inedible Peel by Country and Region in 2008 (FAO)

Country/Regions	Avocado (proposed representative commodity, Medium to Large, Smooth Peel, Subgroup 006B)	Banana (proposed member commodity, Medium to Large, Smooth Peel, Subgroup 006B)	Plantain (proposed member commodity, Medium to Large, Smooth Peel, Subgroup 006B)	Mango, Mangosteen, Guavas (proposed member commodity, Medium to Large, Smooth Peel, Subgroup 006B)	Papaya (proposed member commodity, Medium to Large, Smooth Peel, Subgroup 006B)	Pineapple (proposed representative commodity, Medium to Large, Rough or Hairy Peel, Subgroup 006C)
Australia	9,800 Ha 47,238 Tonnes	9,853 Ha 207,061 Tonnes	No data No data	9,500 Ha 57,947 Tonnes	250 Ha 3,500 Tonnes	5,134 Ha 164,732 Tonnes
New Zealand	4,004 Ha 20,000 Tonnes	No data No data	No data No data	No data No data	No data No data	No data No data
United States	29,474 Ha 116,000 Tonnes	445 Ha 7,893 Tonnes	No data No data	675 Ha 2,950 Tonnes	558 Ha 15,200 Tonnes	5,700 Ha 172,500 Tonnes
Africa	81,312 Ha 511,976 Tonnes	1,561,187 Ha 12,234,118 Tonnes	4,331,585 Ha 24,734,204 Tonnes	603,968 Ha 3,395,045 Tonnes	139,521 Ha 1,449,513 Tonnes	234,766 Ha 2,458,760 Tonnes
North America	29,474 Ha 116,000 Tonnes	467 Ha 8,256 Tonnes	No data No data	675 Ha 2,950 Tonnes	558 Ha 15,200 Tonnes	5,700 Ha 172,500 Tonnes
Central America	131,571 Ha 1,253,885 Tonnes	208,899 Ha 7,073,442 Tonnes	44,527 Ha 617,801 Tonnes	214,195 Ha 2,128,243 Tonnes	27,757 Ha 992,930 Tonnes	67,370 Ha 2,838,438 Tonnes
South America	94,506 Ha 838,848 Tonnes	867,263 Ha 16,592,662 Tonnes	770,619 Ha 6,637,991 Tonnes	141,692 Ha 1,908,411 Tonnes	67,670 Ha 2,475,981 Tonnes	119,909 Ha 3,715,789 Tonnes
Asia	46,266 Ha 406,122 Tonnes	1,957,895 Ha 54,192,001 Tonnes	107,680 Ha 1,159,920 Tonnes	3,651,624 Ha 26,543,548 Tonnes	167,206 Ha 5,030,117 Tonnes	398,863 Ha 9,658,237 Tonnes
Europe	22,225 Ha 100,730 Tonnes	10,576 Ha 417,650 Tonnes	No data No data	No data No data	No data No data	250 Ha 3,000 Tonnes
World Total	43,7470 Ha 3,555,265 Tonnes	4,834,774 Ha 9,339,0721 Tonnes	5,387,755 Ha 34,309,198 Tonnes	4,723,906 Ha 34,889,014 Tonnes	411,163 Ha 10,104,917 Tonnes	852,043 Ha 19,268,880 Tonnes

Note: This table reports only the tropical fruits (inedible peel) available on the FAO website.

F.3. Residue Tolerances – Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006

A comparison of US, Codex and EU tolerances is shown in Table 13. A majority of EU tolerances for tropical fruits, inedible peel are based on inclusion in a Miscellaneous fruit or Fruit Fresh or Frozen; Nuts group. Many of the US tolerances are based on crop definitions for tropical fruits, but in general the proposed representative commodities are equal to or greater than the proposed member commodities in the respective subgroups. Tropical and subtropical fruits with inedible peels in subgroup 006A (small fruits) can be expected to have higher residues than the medium to large fruits in subgroups 006B and 006C because of the greater surface area to weight ratio.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Lychee (ppm) (Proposed Representative Commodity; Small Fruits, Subgroup 006A)			Spanish Lime (ppm) (Proposed Member Commodity; Small Fruits, Subgroup 006A)		
Compound	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	0.05	2	--	--
Bifenazate	5	--	0.01	5	--	--
Buprofezin	0.3	--	0.05	0.3	--	--
Carfentrazone-ethyl	0.1	--	0.01	0.1	--	--
Chlorantraniliprole	2	--	0.01	4	--	--
Chlorothalonil	15	--	0.01	--	--	--
Cyprodinil	2	--	0.05	2	--	--
Fludioxonil	1	--	0.05	1	--	--
Glyphosate	0.2	--	0.1	0.2	--	--
Imidacloprid	3	--	0.05	3	--	--
Methoxyfenozide	2	--	0.02	2	--	--
Pyriproxyfen	0.3	--	0.05	0.3	--	--
Spinetoram	0.3	--	0.05	0.3	--	--
Spinosad	0.3	--	0.02	0.3	--	--
Tebuconazole	1.6	--	0.05	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Avocado (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Pomegranate (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Mango (ppm) (Proposed Member Commodity, Medium to Large Fruits, Smooth Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
1-Naphthaleneacetamide	0.05	--	0.05						
1-Naphthaleneacetic acid	0.05	--	0.05						
Abamectin	0.02	--	0.01						
Azoxystrobin	2	--	0.05	--	--	--	2	0.7	0.7
Bifenazate	7	--	0.01	--	--	--	7	--	0.01
Boscalid	1.5	--	0.05	--	--	--	1.5	--	0.05
Buprofezin	0.3	--	0.05	1.9	--	0.05	0.9	0.1	0.1
Carfentrazone-ethyl	0.1	--	0.01	0.1	--	0.01	0.1	--	0.01
Chlorantraniliprole	4	--	0.01	4	--	0.01	4	--	0.01
Chlorothalonil	--	--	--	--	--	--	1	--	0.01
Clothianidin	--	--	--	0.2	--	0.02	--	--	--
Cyprodinil	1.2	--	0.05	--	--	--	1.2	--	0.05
d-Phenothrin	0.01	--	0.05	--	--	--	0.01	--	0.05
Fenhexamid	--	--	--	2	--	0.05	--	--	--
Fenpropathrin	1	--	0.01	--	--	--	1	--	0.01
Ferbam	--	--	--	--	--	--	4	2	--
Fludioxonil	0.45	--	0.05	5	--	3	0.45	--	0.05
Fluridone	0.1	--	--	--	--	--	--	--	--
Folpet	25	--	0.02						
Fosetyl-Al	25	--	50	--	--	--	--	--	--
Glufosinate-ammonium	--	--	--	--	--	0.2	--	--	--
Glyphosate	0.2	--	0.1	0.2	--	0.1	0.2	--	0.1
Imidacloprid	1	--	1	0.9	1	1	1	0.2	0.2
Inorganic bromide	75	75	50	100	20	50	--	--	--
Malathion	8	--	0.02	--	--	--	8	--	0.02
Mancozeb	--	--	--	--	--	--	15	2	2
Mefenoxam	--	--	--	--	--	--	0.4	--	0.05
Metalaxyl	4	0.2	0.05	--	--	--	--	--	--
Methidathion	--	--	--	--	--	--	0.05	--	0.02
Methomyl	2	--	0.05	0.2	--	0.05	--	--	--
Methoxyfenozide	0.6	0.7	0.02	0.6	--	0.02	0.6	--	0.02
Myclobutanil	--	--	--	--	--	--	3	--	0.02
Norflurazon	0.2	--	--	--	--	--	--	--	--
Oryzalin	0.05	--	0.01	0.05	--	0.01	--	--	--
Oxyfluorfen	0.05	--	0.05	0.05	--	0.05	--	--	--
Paraquat dichloride	0.05	0.01	0.02	--	--	--	--	--	--
Pendimethalin	--	--	--	0.1	--	0.05	--	--	--
Permethrin	1	--	0.05	--	--	--	--	--	--
Phosphine	0.01	--	0.05	--	--	--	0.01	--	0.05

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Avocado (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Pomegranate (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Mango (ppm) (Proposed Member Commodity, Medium to Large Fruits, Smooth Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Piperonly Butoxide	--	--	--	--	--	--	8	--	--
Pyraclostrobin	0.6	--	0.02	--	--	--	0.6	0.05	0.05
Pyrethrins	--	--	--	--	--	--	1	--	1
Pyridaben	--	--	--	--	--	--	0.1	--	0.5
Pyriproxyfen	1	--	0.05	0.2	--	0.05	1	--	0.05
Simazine	0.2	--	0.1	--	--	--	--	--	--
Spinetoram	0.3	--	0.05	0.3	--	0.05	0.3	--	0.05
Spinosad	0.3	--	0.02	0.3	--	0.02	0.3	--	0.02
Spirodiclofen	1	--	0.02	--	--	--	1	--	0.02
Tebuconazole	--	--	--	--	--	--	0.15	--	0.1
Thiabendazole	--	--	--	--	--	--	10	5	5
Thiamethoxam	--	--	--	--	--	--	0.4	--	0.5
Trifoxystrobin	--	--	--	--	--	--	0.7	--	0.5
Triflumizole	--	--	--	--	--	--	2.5	--	0.1

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Papaya (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Banana (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Plantain (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	0.3	0.3	2	2	2	2	--	2
Bifenazate	7	--	0.01	--	--	--	--	--	--
Boscalid	1.5	--	0.05	--	--	--	--	--	--
Buprofezin	0.9	--	0.05	0.2	--	0.5	0.2	--	0.5
Carbaryl	--	--	--	5	--	0.05	5	--	0.05
Carfentrazone-ethyl	0.1	--	0.01	0.2	--	0.01	0.2	--	0.01
Chlorantraniliprole	2	--	0.01	4	--	0.01	4	--	0.01
Chlorothalonil	15	--	20	0.5	0.01	0.2	0.5	--	0.2
Chlorpyrifos	--	--	--	0.1	2	3	0.1	--	3
Clothianidin	--	--	--	--	--	--	--	--	--
Cyprodinil	1.2	--	0.05	--	--	--	--	--	--
d-Phenothrin	0.01	--	0.05	0.01	--	0.05	0.01	--	0.05
Diazinon	--	--	--	0.2	--	0.01	0.2	--	0.01
Diuron	0.5	--	0.1	0.1	--	0.1	0.1	--	0.1
Dodine	--	--	--	0.5	--	0.2	0.5	--	0.2
Ethoprop	--	--	--	0.02	0.02	0.02	0.02	--	0.02
Fenbuconazole	--	--	--	0.3	0.05	0.05	0.3	--	0.05
Fenbutatin-oxide	2	--	0.05	--	--	--	--	--	--
Fenhexamid	--	--	--	--	--	--	--	--	--
Fenpropathrin	1	--	0.01	--	--	--	--	--	--
Fludioxonil	0.45	--	0.05	--	--	--	--	--	--
Fluridone	--	--	--	--	--	--	--	--	--
Fosetyl-Al	--	--	--	3	--	2	3	--	2
Glufosinate-ammonium	--	--	--	0.2	0.2	0.2	0.2	0.05	0.2
Glyphosate	0.2	--	0.1	0.2	0.05	0.1	0.2	--	0.1
Imazalil	--	--	--	3	2	2	3	--	2
Imidacloprid	1	--	0.05	0.5	0.05	0.05	0.5	--	0.05
Inorganic bromide	20	20	50	--	--	--	--	--	--
Malathion	1	--	0.02	--	--	--	--	--	--
Mancozeb	10	5	7	0.5	2	2	0.5	--	2
Maneb	10	5	7	4	2	2	4	--	2
Mefenoxam	0.4	--	0.05	--	--	--	--	--	--
Metalaxyl	0.1	--	0.05	--	--	--	--	--	--
Methidathion	--	--	--	--	--	--	--	--	--
Methomyl	--	--	--	--	--	--	--	--	--
Methoxyfenozide	0.6	1	0.02	--	--	--	--	--	--
Myclobutanil	3	--	0.02	4	2	2	4	--	2
Norflurazon	--	--	--	--	--	--	--	--	--
Oryzalin	0.05	--	0.01	--	--	--	--	--	--
Oxamyl	--	--	--	0.3	--	0.01	0.3	--	0.01

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Papaya (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Banana (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Plantain (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Oxyfluorfen	0.05	--	0.05	0.05	--	0.05	0.05	--	0.05
Paraquat dichloride	0.05	0.01	0.02	0.05	0.01	0.02	0.05	0.01	0.02
Pendimethalin	--	--	--	--	--	--	--	--	--
Permethrin	1	--	0.05	--	--	--	--	--	--
Phosphine	0.01	--	0.05	0.01	--	0.05	0.01	--	0.05
Piperonly Butoxide	--	--	--	--	--	--	--	--	--
Propiconazole	--	--	--	0.2	0.1	0.1	0.2	--	0.1
Pyraclostrobin	0.6	0.05	0.05	0.04	0.02	0.02	0.04	--	0.02
Pyrethrins	--	--	--	--	--	--	--	--	--
Pyridaben	0.1	--	0.5	--	--	--	--	--	--
Pyrimethanil	--	--	--	0.1	0.1	0.1	0.1	--	0.1
Pyriproxyfen	1	--	0.05	0.2	--	0.05	0.2	--	0.05
Simazine	--	--	--	--	--	--	--	--	--
Spinetoram	0.3	--	0.05	0.25	--	0.05	0.25	--	0.05
Spinosad	0.3	--	0.5	0.25	--	0.02	0.25	--	0.02
Spirodiclofen	1	0.03	0.02				--	--	--
Tebuconazole	--	--	--	0.05	0.05	0.05	0.05	--	0.05
Terbufos	--	--	--	0.025	0.05	0.05	0.025	--	0.05
Thiabendazole	5	10	10	3	5	5	3	--	5
Thiamethoxam	0.4	--	0.05	--	--	--	--	--	--
Trifloxystrobin	0.7	--	1						
Triflumizole	2.5	--	0.1	--	--	--	--	--	--
Thiophanate-methyl	--	--	--	2	0.2	0.1	2	--	0.1

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Pawpaw (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Sapote, Black (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)			Sapote, White (ppm) (Proposed Member Commodity; Medium To Large Fruits, Smooth Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	0.3	--	2	--	0.05	2	--	0.05
Bifenazate	--	--	--	7	--	0.01	--	--	--
Boscalid	--	--	--	1.5	--	0.05	--	--	--
Buprofezin	--	--	--	0.9	--	0.05	--	--	--
Carfentrazone-ethyl	0.1	--	--	0.1	--	0.01	--	--	--
Chlorantraniliprole	--	--	--	4	--	0.01	4	--	0.01
Cyprodinil	2	--	--	1.2	--	0.05	--	--	--
d-Phenothrin	0.01	--	--	--	--	--	--	--	--
Fenpropathrin	--	--	--	1	--	0.01	--	--	--
Fluazifop	0.05	--	--	--	--	--	--	--	--
Fludioxonil	--	--	--	0.45	--	0.05	--	--	--
Fluridone	0.1	--	--	--	--	--	--	--	--
Glyphosate	0.2	--	--	0.2	--	0.1	0.2	--	0.1
Imidacloprid	--	--	--	1	--	0.05	--	--	--
Mancozeb	--	--	--	--	--	--	15	--	0.05
Mefenoxam	--	--	--	0.4	--	0.05	--	--	--
Methoxyfenozide	--	--	--	0.6	--	0.02	--	--	--
Myclobutanil	--	--	--	3	--	0.02	--	--	--
Pyraclostrobin	--	--	--	0.6	--	0.02	--	--	--
Pyridaben	--	--	--	0.1	--	0.5	--	--	--
Pyriproxyfen	1	--	--	1	--	0.05	0.3	--	0.05
Spinetoram	--	--	--	0.3	--	0.05	0.3	--	0.05
Spinosad	--	--	--	0.3	--	0.02	0.3	--	0.02
Spirodiclofen	--	--	--	1	--	0.02	--	--	--
Thiamethoxam	--	--	--	0.4	--	0.05	--	--	--
Trifloxystrobin	--	--	--	0.7	--	0.02	--	--	--
Triflumizole	--	--	--	2.5	--	0.1	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Atemoya (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Pineapple (ppm) (Proposed Representative Commodity; Medium To Large Fruits, Rough o Hairy Peel, Subgroup 006C)			Cherimoya (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Ametryn	--	--	--	0.05	--	--	--	--	--
Azoxystrobin	2	--	--	--	--	--	2	--	0.05
Bifenazate	1.6	--	--	--	--	--	1.6	--	0.01
Bromacil	--	--	--	0.1	--	--	--	--	--
Buprofezin	0.3	--	--	--	--	--	0.3	--	0.05
Carbaryl	--	--	--	2	--	0.05	--	--	--
Carfentrazone-ethyl	0.1	--	--	--	--	--	0.1	--	0.01
Chlorantraniliprole	4	--	--	1.5	--	0.01	4	--	0.01
d-Phenothrin	--	--	--	0.01	--	0.05	--	--	--
Diazinon	--	--	--	0.5	0.1	0.3	--	--	--
Diuron	--	--	--	0.1	--	0.1	--	--	--
Endosulfan	--	--	--	1	--	0.05	--	--	--
Ethephon	--	--	--	2	2	2	--	--	--
Ethoprop	--	--	--	0.02	--	0.02	--	--	--
Fosetyl-Al	--	--	--	0.1	--	50	--	--	--
Glyphosate	0.2	--	--	0.1	--	0.1	0.2	--	0.1
Hexazinone	--	--	--	0.6	--	--	--	--	--
Hydramethylnon	--	--	--	0.05	--	--	--	--	--
Imidacloprid	0.3	--	--	--	--	--	0.3	--	0.05
Inorganic bromide	--	--	--	20	20	50	--	--	--
Malathion	--	--	--	8	--	0.02	--	--	--
Mancozeb	3	--	--	--	--	--	3	--	0.05
Mefenoxam	0.2	--	--	--	--	--	--	--	--
Metalaxyl	--	--	--	0.1	--	0.05	--	--	--
O-phenylphenol	--	--	--	10	--	--	--	--	--
Oxamyl	--	--	--	1	--	0.01	--	--	--
Paraquat dichloride	--	--	--	0.05	0.01	0.02	--	--	--
Piperonyl Butoxide	--	--	--	8	--	--	--	--	--
Propiconazole	--	--	--	4.5	0.02	0.05	--	--	--
Pyrethrins	--	--	--	1	--	1	--	--	--
Pyriproxyfen	0.2	--	--	0.3	--	0.05	0.2	--	0.05
Quizalofop-ethyl	--	--	--	0.1	--	0.05	--	--	--
Quizalofop-P-ethyl	--	--	--	0.1	--	0.05	--	--	--
Spinetoram	0.3	--	--	0.04	--	0.05	0.3	--	0.05
Spinosad	0.3	--	--	0.02	--	0.02	0.3	--	0.02
Triadimefon	--	--	--	2	5	3	--	--	--
Triflumizole	--	--	--	4	--	0.1	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Custard Apple (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Durian (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Jackfruit (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	0.05	--	--	--	2	--	0.05
Bifenazate	1.6	--	0.01	--	--	--	--	--	--
Buprofezin	0.3	--	0.05	--	--	--	--	--	--
Carfentrazone-ethyl	0.1	--	0.01	--	--	--	--	--	--
Chlorantraniliprole	4	--	0.01	--	--	--	--	--	--
Glyphosate	0.2	--	0.1	0.2	--	0.1	0.2	--	0.1
Imidacloprid	0.3	--	0.05	--	--	--	--	--	--
Mancozeb	3	--	0.05	--	--	--	--	--	--
Mefenoxam	0.2	--	0.05	--	--	--	--	--	--
Pyriproxyfen	0.2	--	0.05	--	--	--	--	--	--
Spinetoram	0.3	--	0.05	--	--	--	--	--	--
Spinosad	0.3	--	0.02	--	--	--	--	--	--

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Longan (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Sapodilla (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Sapote, Mamey (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006B)		
Compound	US	Codex	EU	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	--	2	--	--	2	--	0.05
Bifenazate	5	--	--	7	--	--	7	--	0.01
Boscalid	--	--	--	1.5	--	--	1.5	--	0.05
Buprofezin	--	--	--	0.9	--	--	0.9	--	0.05
Carfentrazone-ethyl	0.1	--	--	0.1	--	--	0.1	--	0.01
Chlorantraniliprole	4	--	--	4	--	--	4	--	0.01
Cyprodinil	2	--	--	1.2	--	--	1.2	--	0.05
Fenpropathrin	--	--	--	1	--	--	1	--	0.01
Fludioxonil	1	--	--	0.45	--	--	0.45	--	0.05
Glyphosate	0.2	--	--	0.2	--	--	0.2	--	0.1
Imidacloprid	3	--	--	1	--	--	1	--	0.05
Mancozeb	--	--	--	15	--	--	15	--	0.05
Mefenoxam	--	--	--	0.4	--	--	0.4	--	0.05
Methidathion	0.1	--	--	--	--	--	--	--	--
Methoxyfenozide	2	--	--	0.6	--	--	0.6	--	0.02
Myclobutanil	--	--	--	3	--	--	3	--	0.02
Pyraclostrobin	--	--	--	0.6	--	--	0.6	--	0.02
Pyridaben	--	--	--	0.1	--	--	0.1	--	0.5
Pyriproxyfen	--	--	--	1	--	--	1	--	0.05
Spinetoram	0.3	--	--	0.3	--	--	0.3	--	0.05
Spinosad	0.3	--	--	0.3	--	--	0.3	--	0.02
Spirodiclofen	0.3	--	--	1	--	--	1	--	0.02
Thiamethoxam	--	--	--	0.4	--	--	0.4	--	0.05
Trifloxystrobin	--	--	--	0.7	--	--	0.7	--	0.02
Triflumizole	--	--	--	2.5	--	--	2.5	--	0.1

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

Table 13. Residue Tolerances established on Assorted Tropical and Sub-Tropical Fruits – Inedible Peel Group 006 (continued)
(FASonline: mrldatabase.com; tolerances as of November 9, 2010)

	Soursop (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)			Sugar Apple (ppm) (Proposed Member Commodity; Medium To Large Fruits, Rough or Hairy Peel, Subgroup 006C)		
Compound	US	Codex	EU	US	Codex	EU
Azoxystrobin	2	--	0.05	2	--	0.05
Bifenazate	1.6	--	0.01	1.6	--	0.01
Buprofezin	0.3	--	0.05	0.3	--	0.05
Carfentrazone-ethyl	0.1	--	0.01	0.1	--	0.01
Chlorantraniliprole	4	--	0.01	4	--	0.01
Glyphosate	0.2	--	0.1	0.2	--	0.1
Imidacloprid	0.3	--	0.05	0.3	--	0.05
Mancozeb	--	--	--	3	--	0.05
Mefenoxam	--	--	--	0.2	--	0.05
Methidathion	--	--	--	0.2	--	0.02
Pyriproxyfen	0.2	--	0.05	0.2	--	0.05
Spinetoram	0.3	--	0.05	0.3	--	0.05
Spinosad	0.3	--	0.02	0.3	--	0.02

Note: That shaded cells indicate that the MRL is established for the respective crop group rather than for the individual commodity.

F.4. Characteristics (morphology, edible portions, growth habits, pest problems and livestock feed items) – Assorted Tropical and Sub-Tropical Fruits – Inedible Peel:

The majority of tropical fruits develop on trees or shrubs, while a small portion of tropical fruits grow on vines on trellises. Since tropical and sub-tropical fruits are grown in similar climates, these crops can be expected to have similar production methods. Environmental conditions in the tropics and sub-tropics are favorable for a wide range of weed, insect and plant diseases on a year-round basis. These diverse insects, weeds and pathogens often need to be controlled by herbicides, insecticides and fungicides.

There are no significant animal feed items associated with any of the commodities in the Assorted Tropical and Sub-Tropical Fruits – Inedible Peel group, except for pineapple process residue (includes pineapple tops, bottoms, peels any trimmings with peel cut up and left over pulp after squeezing for juice). A numberof tropical fruits (passionfruit, pineapple, pomegranate) with inedible peel are processed into juice.

F.5. Conclusion – Assorted Tropical and Sub-Tropical Fruits – Inedible Peel

Proposed representative commodities (Lychee, Avocado, Pomegranate, Atemoya, Pineapple, Dragon fruit, Prickly pear, Passionfruit and Muriti or Palmyra Palm) for Group 006 Assorted Tropical and Sub-Tropical Fruits – Inedible Peel were selected based on the principles in the Guidance document as follows:

(1) A representative commodity should be major in terms of production and/or consumption:

FAO reports (Table 12) the production of some of the proposed representative commodities (avocado and pineapple). Production of the other proposed representative commodities (lychee, pomegranate, atemoya, dragon fruit, prickly pear, passionfruit and muriti or palmyra palm) are less significant, but the production of these commodities are without a doubt greater than the member commodites of the proposed respective subgroups.

(2) A representative commodity should be likely to contain the highest residues:

A majority of EU tolerances for tropical fruits, inedible peel are based on inclusion in a Miscellaneous fruit or Fruit Fresh or Frozen; Nuts group. Many of the US tolerances are based on crop definitions for tropical fruits, but in general the proposed representative commodities are equal to or greater than the proposed member commodities in the respective subgroups. Tropical and subtropical fruits with inedible peels in subgroup 006A (small fruits) can be expected to have higher residues than the medium to large fruits in subgroups 006B and 006C because of the greater surface area to weight ratios.

(3) A representative commodity should be similar in morphology, growth habit, similar pest problems and edible portion to the related commodities within a group or subgroup:

The majority of tropical fruits develop on trees or shrubs, while a small portion of tropical fruits grow on vines on trellises or are palm fruits. Since tropical and sub-tropical fruits are grown in similar climates, these crops can be expected to have similar production methods. Environmental conditions in the tropics and sub-tropics are favorable for a wide range of weed, insect and plant diseases on a year-round basis. These diverse insects, weeds and pathogens often need to be controlled by herbicides, insecticides and fungicides.

ADDENDUM II, Background Information Regarding Representative Commodities

Background Information for the Draft Principles and Guidance on the Selection of Representative Commodities for the Extrapolation of MRLs to Commodity Groups

Background

1. Residue extrapolation is the process by which the residue levels on representative commodities are utilized to estimate residue levels on related commodities in the same crop group or subgroup for which trials have not been conducted, but would have similar residue levels. Representative commodities are chosen based on their commercial importance, similar morphology and residue characteristics. Ideally representative crops are the most economically important crops in production and/or consumption in a crop group and have a greater dietary burden and have residue characteristics similar to other members of the crop group or subgroup. Residue extrapolation is a common consideration utilised by regulators internationally for ensuring that data requirements are only at a level that is scientifically justified in conducting risk assessment and to ensure the regulatory process does not become unnecessarily burdensome. This is critical because it is not always economically attractive for a product manufacturer to conduct trials on the many crops which are grown in relatively small amounts/areas (minor crops), but which may nonetheless be scientifically supported via extrapolation. Residue extrapolation may be used to simply estimate the residue level of a commodity on the basis of data generated for a similar commodity or, as is currently extensively practiced, it may be used in conjunction with established crop groupings to establish residue levels for an entire commodity grouping or subgroup.

2. The Residue Chemistry Expert Group (RCEG) of the OECD (Final Report: OECD Residue Chemistry Expert Group Meeting, Paris, Jan. 22-24, 2008) drafted a Representative Crops and Extrapolation document (Annex I) that provided background, described national approaches, classification criteria and provided a table comparing representative crops for the US, EU, Australia and Japan. The OECG RCEG will adopt the new Codex Food and Feed Classification when it is finalized.

3. JMPR currently uses representative commodities for estimation of MRLs for commodities of minor crops or crop groups on a case-by case basis according to the paragraph “Estimation of group maximum residue levels” of the *FAO manual on the submission and evaluation of pesticide residues data for the estimation of residue levels in food and feed*, 2002, page 58. The lack of formal criteria or an agreed mechanism to determine the members of a group for which data are needed before a group MRL can be established at the international level limits the ability of the JMPR to apply extrapolations on a regular basis. Extrapolations to group Codex MRLs have historically been limited to a few groups: citrus fruit, pome fruit, stalk and stem vegetables, cereal grains, and stone fruit (*IR-4/USDA International Croup Grouping Symposium Proceedings*, 2002, page 51).

4. JMPR gave their view on estimating group MRLs in the paragraph “Estimation of group maximum residue levels” of the FAO manual and some of the relevant listed principles are summarised below:

- The Codex Classification is the basis for recommending MRLs for individual and grouped commodities.
- In the absence of sufficient data for one commodity, data from a similar crop for which GAP is similar may support the estimation of MRLs.
- Data on residues in all or most of the major commodities with the potential for high residues within a group may allow estimates of MRLs to be extrapolated to other crops in the group.
- In order for a group limit to be proposed, not only must residue levels in the major commodities in the group not to be different, but the physical nature and other characteristics of the crops that might influence residue levels, as well as cultural practices and GAP for the individual commodities, must also be taken into account.

The premise of this approach is that if data are available for representative crops, and if GAP and cultural practises among the individual members are similar, the residue levels will not vary widely and a maximum residue level can be estimated that will suffice for other members of the group for which no data are available.

JMPR further addressed the issue of representative crops and crop groups in General Consideration 2.8 of the 2006 Report (Updating the Principles and Methods of Risk Assessment).

Codex MRLs are used as trade standards. MRLs for control-of-use are parochial (national, local), whereas MRLs for trade purposes should be global.

From the trade perspective, it is preferable to have an MRL than no MRL if residues are likely in the food/feed commodity. A more liberal policy is needed for extrapolation of MRLs to groups, and JMPR recommends the following scientific minimum conditions for group MRLs: (1) The pesticide is registered or authorized for use on the crop group [or many individual members of the group and (2) Relevant and adequate residue data are available for at least one major commodity of the group. All relevant data for commodities of the group should be considered.

5. Residue extrapolation was included in the scope of the work in the extended revision of the Codex Classification of Foods and Animal Feeds, approved by the CAC 2006.

6. The CCPR 2007 in Beijing, China agreed that the Electronic Working Group of the Codex Classification of Foods and Animal Feeds, led by The Netherlands and the United States, should prepare a draft document outlining the principles of and guidance on the selection of representative crops for the purpose of extrapolation of MRLs. It was agreed that the guidance on selection of representative crops should be developed as a separate document to be provided to the JMPR rather than as a part of the Codex Classification itself (ALINORM 07/30/24, paragraphs 142 – 152).

7. At the CCPR 2008 in Hangzhou, China, the Delegation of the USA presented Addendum II on the selection of representative crops. This document considered the available information on the use of representative commodities by international regulatory authorities and noted that the principles were generally similar. It was also noted that the selection of suitable representative commodities should be flexible to account for differences in worldwide production. For the purpose of residue extrapolation, the US proposed that the principles presented in Addendum II would be used and that representative commodities would be selected in parallel with the revision of the respective crop grouping classification. The guidance document on the selection of representative commodities will be a separate document from the Codex Classification of Foods and Animal Feeds. The Meeting requested that the JMPR comment upon Addendum II (ALINORM 08/31/24, paragraphs 113 – 115).

8. The 2008 JMPR considered Addendum II (Report 2008, General Item, The Meeting offered the following comments: (1) Groupings should be formed so that members would be (typically) subject to the same GAP and would form a group with similar residue characteristics and (2) Representative commodities should be chosen according to (1) commercial importance and (2) residue characteristics.

Criteria (1) and (2) may conflict, that is, the most important commercial crop may not be the most important from a residue perspective, e.g., chilli peppers and sweet peppers. The JMPR considers all available data; the residue data driving the group MRL will not necessarily be from the suggested ”representative” commodities.

A group MRL should normally not be set based only on data from a minor crop. The selection of representative crops and corresponding commodities for particular crops and commodity groups “would be very valuable to proponents planning residue trials.”

9. Conclusion of JMPR 2008: The JMPR looks forward to further progress with commodity grouping and representative commodities. Careful attention to grouping will assist the JMPR to propose group MRLs more often.

10. At the CCPR 2009 in Beijing, China, the Delegation of the USA presented the Draft Principles and Guidance on the Selection of Representative Commodities for the Extrapolation of MRLS to Commodity Groups as a separate document. A number of comments were received and the Committee agreed to return the proposed draft Principles and Guidance to Step 2 for redrafting by the Delegation of the USA in order to take into account the comments made at the Forty first session.

11. At the CCPR 2010 in Xian, China, the Delegation of the United States of America noted that it would be most efficient to concentrate on the proposals for the “Fruit Types” in order for these to be completed when the revision to the classification for “Fruit Types” is completed. Addendum I and II were returned for revision and were revised to propose representative commodities for the “Fruit Types”.