

# codex alimentarius commission

FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD HEALTH  
ORGANIZATION

JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel.: +39(06)57051 Telex: 625825-625853 FAO I E-mail: Codex@fao.org Facsimile: +39(06)5705.4593

**Agenda Item 9**

**CX/PR 00/14**  
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## **JOINT FAO/WHO FOOD STANDARDS PROGRAMME**

### **CODEX COMMITTEE ON PESTICIDE RESIDUES**

#### **Thirty-Second Session**

**The Hague, The Netherlands, 1 - 8 May 2000**

### **PROBLEMS RELATIVE TO PESTICIDE RESIDUES IN FOOD IN DEVELOPING COUNTRIES**

(Prepared by South Africa)

#### **INTRODUCTION**

1. The Committee has considered questions of interest to developing countries relating to the work of the Committee since its 11th Session. At its 31st Session, the Committee recommended certain actions to be taken by the Committee and exporting and importing countries, including that a report should be submitted on the regional cooperation among developing countries on this subject at the 32nd Session.<sup>1</sup> This report is a follow-up on two previous papers prepared by Malaysia and WHO that identified specific pesticide/commodity problems facing developing countries and explores possible avenues to facilitate regional cooperation in the elaboration of Codex MRLs. For this purpose, information was obtained from various African countries *viz.* Kenya, Madagascar, Mauritius, Namibia, Tanzania, Uganda, Zambia and Zimbabwe on the problems they experience with pesticide residues and export food commodities, as well as the role marketing organizations play in alleviating this problem. Consideration was also given to the newly established International Tropical Fruits Network (ITFN).

#### **TRADE PROBLEMS OF DEVELOPING COUNTRIES**

2. Documents CX/PR 99/12 and CX/PR 99/13 indicated that commodities with which developing countries experience problems are mango, papaya, banana, peppers, chillies, paprika, chick peas and sesame seed. This can be ascribed to the lack of national or Codex MRLs. Most problems experienced in developing countries concern the export of these food commodities to developed countries such as the USA and Europe. Harmonization of MRLs within the EU has, however, increased the complexity of the problem for developing countries because only a few MRLs are supported.

3. Developing countries, as all other countries exporting produce to the EU, must now comply with MRLs or import tolerances established in EC legislation. Council directives 76/895/EEC, 86/362/EEC, 86/363/EEC and 09/642/EEC deal with MRLs in fruit, vegetables, cereals, products of animal origin, and in products of plant origin, including fruit and vegetables.

4. The lack of suitable Codex MRLs, EC MRLs or national MRLs for tropical and minor crops, such as mango, avocado and litchi is illustrated in Appendix 1 to 3. In some cases the MRL is set at the Limit of Determination (LOD) because there is no or insufficient data available. Manufacturers are also often unwilling to generate new data on these crops as it would be difficult to recover costs.

5. Information from a number of African countries regarding pesticide/commodity problems indicated that they adhere to Codex MRLs or to the requirements of the importing countries. In this

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<sup>1</sup> ALINORM 99/24A, para. 147.

regard marketing organizations play a major role. Some countries indicated that they were cooperating with marketing organizations to ensure that the requirements of importing countries are met. An example of such an organization is COLEACP (Europe-Africa-Caribbean-Pacific Liaison Committee for the Promotion of Tropical fruits, Off-season Vegetables, Flowers, Ornamental, Plants and Spices).

6. COLEACP is an independent EU/ACP (Africa, Caribbean and Pacific) trade association supported by the EU Commission. It represents the interests of private sector fresh produce exporters in all the ACP countries. COLEACP has established a Working Group with the UK Fresh Produce Consortium and other interested stake holders. Its primary aim is to assess how the changes in MRL regulations under the EU harmonization programme will affect the fresh produce industry and to identify ways to alleviate the problems that could arise from trade in general, but specifically for producers and exporters of tropical and subtropical crops in ACP countries.

7. The possibility to expand the above-mentioned initiatives to promote international cooperation should be seriously considered. In this regard the newly established ITFN could play a role. The methodology followed by COLEACP could then also be expanded to establish Codex MRLs.

### **ACP COUNTRIES AND REGIONAL COOPERATION**

8. COLEACP has initiated a process of cooperation among ACP countries to address the lack of suitable Codex and EU MRLs on food commodities produced for export. A work plan has been drawn up which consists of three phases.

9. The first phase comprises of the completion of an inventory of all active ingredients used on each tropical export crop. It will then be determined which active ingredients should be prioritized. The impact of the first EU regulation changes on ACP production and export of fresh fruit and vegetables, as well as on the import/distribution trade in Europe will be determined. The expected effect resulting from the extension of the harmonization process to new MRLs will also be addressed. Recommendations will be prepared for producers and their trading partners to adjust their agricultural and marketing practices to take into account the changes in regulations that have already taken place or that are imminent.

10. In the second phase tables will be compiled for each tropical crop. These tables will indicate the existing MRLs for each active ingredient under the EU programme, for every member state, and under Codex. An inventory will also be compiled of the EU member state rapporteurs responsible for the setting of MRLs, the lack of data which will result in the setting of MRLs at the LOD, MRLs not yet harmonized which will and will not be defended, and of the active ingredients that are likely to be banned as from 2003. Pesticide manufacturers will also be consulted on their current and foreseeable future position regarding MRL files for specifically minor crops in general and for tropical crops in particular. Data will be collected on FAO/Codex and various other national or international sources to support applications for the setting of MRLs or the granting of EU import tolerances.

11. The third phase will be the submission of a strategic proposal to the European Commission, ACP authorities and others involved. This proposal will be based on a fully-detailed document containing the combined data resulting from the first two phases. The proposal will reflect the following:

- The impact for ACP countries of current and expected regulation changes concerning MRLs for the fresh fruit and vegetable trade.
- The current situation and forecast for the next five years on the effective use of pesticides (generic pesticides as well as new active ingredients) on tropical fruit, green vegetables and root crops.
- A coherent action plan designed to reduce the risks currently encountered by the ACP-EU trade organizations, and to solve the recurring problems that will emerge with the continuation of the process of harmonization of MRLs within the EU up to 2003 and thereafter.

12. A supervisory mechanism should be established to ensure coordination of local, regional and international initiatives. Based on the COLEACP inventory of pesticides used under GAP in ACP export crops, a priority list has been established of crop/pesticide combinations for which MRLs should be applied for. The first priority should be for substances used in post-harvest treatments as indicated below.

<b>Active Ingredient</b>	<b>Main Crops</b>	<b>Use</b>
Carbendazim	Mango, legumes	Fungicide
Benomyl	Mango, avocado, papaya, sweet potato, yam, pineapple	Post-harvest fungicide
Dithiocarbamates	Mango, papaya, passion fruit, legumes	Fungicide
Ethepon	Pineapple	Growth regulator
Imazalil	Mango, pineapple, sweet potato, yam	Post-harvest fungicide
Prochloraz	Mango, avocado, papaya	Fungicide
Thiophanate-methyl	Papaya	Fungicide
Thiabendazole	Mango, avocado, papaya, sweet potato, yam	Post-harvest fungicide
Triademefon	Pineapple	Post-harvest fungicide

## **INTERNATIONAL TROPICAL FRUITS NETWORK**

13. The International Consultation on Tropical Fruits held in Kuala Lumpur (15 to 19 July 1996) recommended, among other actions, the establishment of an FAO-sponsored global Network on Tropical Fruits to promote international cooperation.

14. The ITFN was launched at the first session of the Intergovernmental Group (IGG) on Bananas and on Tropical Fruits held on the East Coast of Australia (4 to 8 May 1999). Sixteen producer and consumer countries attended this first session. Malaysia was elected to host the Network headquarters.

15. The Network will promote production, marketing, consumption and international trade in tropical fruits. Apart from these functions it will also assess the markets, support research and development of new technologies, expand markets, reinforce human resource development, evaluate the impact of various international agreements on tropical fruit trade and facilitate economic and technical exchanges between countries.

16. The Network could function as a centre for the coordination of information on pesticide/commodity problems and priorities, market trends and the generation of residue data for the elaboration of internationally acceptable MRLs. Information on tropical fruit markets would enable manufacturers to take informed decisions on whether it would be economically viable to support development work on certain pesticide/commodity combinations. Funding to generate the necessary data for the elaboration of suitable MRLs could also be addressed by the Network.

## **CONCLUSIONS**

17. Developing countries are experiencing problems with international trade as a result of the lack of national and Codex MRLs of pesticides for tropical and minor crops. In many instances manufacturers are not interested in these crops because of low volume sales or because generic pesticides are used.

18. Regional and international cooperation is needed to initiate short and long-term programmes to generate necessary data for Codex, EU or national MRLs. This will entail the identification of problems concerning pesticide and food commodities and the setting of priorities. Data requirements for each pesticide/commodity problem will have to be determined and funding obtained.

19. COLEACP and ACP countries are at the moment addressing these problems through short and long-term programmes which include alternative pesticides, adjusting the withholding periods, as well as the generation of new residue data. Further international cooperation is, however, necessary. Consideration should also be given to whether ITFN could facilitate international cooperation in the field of information collection on pesticide/food commodity problems, tropical fruit markets and funding.

20. The generation of new residue data by COLEACP would also help in the elaboration of Codex MRLs.

**APPENDIX 1: MAXIMUM RESIDUE LIMITS FOR MANGO (in mg/kg or ppm)**

Active Ingredient	CODEX	BE <sup>2</sup>	CA	CH	DE	ES	FR	IE	IT	JP	NL	UK	US	EC
Benomyl (=Carbendazim)	2	0.1	5.0	3.0	0.1	0.1		0.1	0.1		0.1	0.1	3.0	0.1*
Bromopropylate		0.05	0.1	2.0	0.05	0.05	0.05	0.05	0.05		0.05			
Bromuconazole		0.05	0.1		0.05	0.01					0.05			
Bupirimate			0.1		0.01	0.05			0.01		0.05			
Carbaryl		1	0.1	1.0	1	1	0.05	5	1		1			
Carbosulfan		0.05	0.1		0.05	0.05	0.05	0.05	0.05		0.05	0.05		0.05*
Chinomethionate		0.3	0.1	0.3	0.3	0.3		0.3	0.3		0.3			
Copper ammonium carbonate		20^	50^	15	20	20^			20		20		Exempt	
Copper oxychloride		20^	50^	15	20	20^			20		20			
Cupric hydroxide		20^	50^	15	20	20^			20		20			
Cyproconazole		0.01	0.1	0.1	0.05	0.01			0.01		0.05			
Deltamethrin		0.05	0.1	0.1	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05*
Esfenvalerate		0.05	0.1	0.1	0.05	0.05			0.05		0.05			
Fenthion		0.05	0.1		2	0.05	0.02		0.01		0.05			
Fenvalerate		0.05	0.1	0.5	0.05	0.05		0.05	0.05	1.0	0.05	0.05	0.05	0.05*
Hexaconazole		0.01	0.1	0.1	0.01	0.05	0.01				0.05			
Imazalil		0.02	0.1		0.02	0.02		0.02	0.02	2.0	0.02	0.02		0.02*
Mancozeb	2	0.05	0.1	2.0	0.05	0.05		0.05	0.05		0.05	0.05		0.05*
Mercaptothion			0.1	0.5	0.01			0.5	0.5		0.5		8.0	
Methamidophos		0.01	0.1	0.1	0.01	0.01	0.01	0.01	0.01		0.01	0.01		0.01*
Methiocarb		0.05	0.1	0.05	0.1	0.05			0.01	0.05	0.05			
Monocrotophos		0.02	0.1		0.01	0.02			0.01		0.05			
Paclobutrazol			0.1		0.05					0.01	0.05			
Parathion		0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	(0.2)^^^	0.50		1.0	
Phenthoate			0.1		0.01	0.05					0.05			
Prochloraz	2	0.01	0.1		2	5	0.02		0.01		5			

<sup>2</sup> BE, Belgium; CA, Canada; CH, Switzerland; DE, Germany; ES, Spain; FR, France; IE, Ireland; IT, Italy; JP, Japan; NL, The Netherlands; UK, United Kingdom; US, United States of America; EC, European Community.

Active Ingredient	CODEX	BE <sup>2</sup>	CA	CH	DE	ES	FR	IE	IT	JP	NL	UK	US	EC
Procymidone		0.02	0.1		0.02	0.02		0.02	0.02		0.02	0.02		0.02*
Propiconazole	0.05	0.05	0.1		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05*
Prothiofos			0.1		0.01	0.02					0.02			
Pyrazophos		0.1	0.1		0.01	0.01			0.01		0.02			
Pyrifenox		0.05	0.1		0.05	0.05			0.01	2.0	0.05			
Pyriproxyfen			0.1		0.01	0.01					0.02			
Sulphur		50		50	50	50	50		50		50			
Tebuconazole		0.05	0.1		0.05	0.05			0.05		0.05			
Thiabendazole		0.05	0.1		0.05	0.05	0.05	0.05	0.05		0.05	0.05	10.0	0.05*
Triadimefon	0.05	0.05	0.1		0.1	0.05	0.05		0.01		0.05			
Triadimenol	0.05	0.05	0.1		0.1	0.05	0.05		0.01		0.1			
Trichlorfon		0.5	0.1	0.5	0.5	0.5	0.05	0.5	0.5	0.50	0.5			
Tridemorph		0.05	0.1		0.1	0.05			0.01		0.05			
Triflumuron			0.1		0.05	0.05			0.01					
Triforine		0.5	0.1		0.05	0.05	0.02	0.05	0.05		0.05	0.05		0.05*
Uniconazol			0.1		0.01									

^ = inorganic copper; ^^ = for parathion-methyl

Notes:

- 1: Canada has a general default value of 0.1ppm for pesticide residues on foods so that even though no explicit MRL has been established for a number of pesticides on mangoes, this value would apply. MRL 2.00ppm for triazolyl alanine (TA) plant metabolite from triazolyl fungicides.
2. \* indicates Limit of Determination (LOD)
3. There are a number of MRLs established in Japan for pesticides not included in this list.

**APPENDIX 2: MAXIMUM RESIDUE LIMITS FOR AVOCADO** (in mg/kg or ppm)

Active Ingredient	CODEX	BE <sup>3</sup>	CA	CH	DE	ES	FR	IE	IT	JP	NL	UK	US	EC
Benomyl (=Carbendazim)	0.05	0.1	0.1		0.1	0.01		0.1	0.1		0.1	0.1	3.0	0.1*
Beta-cyfluthrin		0.02	0.1		0.02	0.02		0.02			0.02			0.02*
Buprofezin		0.05	0.1		0.02	0.01			0.01		0.05			
Chinomethionat	0.1	0.3	0.1		0.3	0.3		0.3	0.3	0.1	0.30			
Copper ammonium carbonate*		20^	50	15	20	20^			20		20		Exempt	
Copper oxychloride*		20^	50	15	20	20^			20		20			
Cupric hydroxide*		20^	50	15	20	20^			20		20			
Cypermethrin		0.05	0.1	1.0		0.05	0.05	0.05	0.05		0.05	0.05		0.05*
Endosulfan		0.05	0.1	1.0	0.05	0.05		0.05	0.05		0.05	0.05		0.05*
Fosetyl-Al		2	10		0.2	0.2			0.01		0.2		25	
Imazalil		0.02	0.1		0.02	0.02	0.02	0.02	0.02	2.0	0.02	0.02		0.02*
Mancozeb		0.05	0.1	2.0	0.05	0.05		0.05	0.05		0.05	0.05		0.05*
Mercaptothion			8.0	0.5	0.01			0.5	0.5		0.5		8.0	
Metalaxyl	2	0.05	4.0	1.0	0.05	0.05	0.05	0.05	0.05		0.05		4.0	
Methyl bromide	75^^	0.05^	0.1		0.05	50^^	20^^	0.05	0.05	75^^	0.05	0.05	75	0.05*
Phosphorus acid		20	0.1		0.01									
Prochloraz	5	0.01	0.1		2	5			0.01		5			
Propiconazole		0.05	0.1		0.05	0.05	0.05	0.05	0.05		0.05	0.05		0.05*
Pyriproxifen			0.1		0.01	0.01					0.02			
Sulphur		50	0.1	50	50	50	50		50		50			
Thiabendazole		0.05	0.1		0.05	0.05	0.05	0.05	0.05		0.05		10.0	0.05*
Uniconazole			0.1		0.01									

^ = inorganic copper      ^^= inorganic bromine

Notes:

1: Canada has a general default value of 0.1ppm for pesticide residues on foods so that even though no explicit MRL has been established for a number of pesticides on avocados, this value would apply. MRL 2.00ppm for triazolyl alanine (TA) plant metabolite from triazolyl fungicides.

2: \* indicates Limit of Determination (LOD)

3. There are a number of MRLs established in Japan for pesticides not included in this list.

<sup>3</sup> BE, Belgium; CA, Canada; CH, Switzerland; DE, Germany; ES, Spain; FR, France, IE, Ireland; IT, Italy; JP, Japan; NL, The Netherlands; UK, United Kingdom; US, United States of America; EC, European Community.

**APPENDIX 3: MAXIMUM RESIDUE LIMITS FOR LITCHI (in mg/kg or ppm)**

Active Ingredient	CODEX	BE <sup>4</sup>	CA	CH	DE	ES	FR	IE	IT	JP	NL	UK	US	EC
Carbaryl		1	0.1	1.0	1	1	0.05	5.0	1		1			
Fenamiphos		0.05	0.1		0.05	0.02			0.01		0.05			
Sulphur			0.1	50	50	50	10.0 <sup>^</sup>							10.00 <sup>^</sup>
							250.0 <sup>^^</sup>							250.00 <sup>^</sup> ^
Teflubenzuron		0.05	0.1	0.3	0.05	0.05			0.01		0.05			
Trichlorfon		0.5	0.1	0.5	0.5	0.5		0.5	0.5	0.50	0.5			
Triflumuron			0.1		0.05	0.05			0.01					

<sup>^</sup>=in flesh

<sup>^^</sup>=on outer skin

Notes:

1: Canada has a general default value of 0.1ppm for pesticide residues on foods so that even though no explicit MRL has been established for a number of pesticides on litchi's, this value would apply.

<sup>4</sup> BE, Belgium; CA, Canada; CH, Switzerland; DE, Germany; ES, Spain; FR, France; IE, Ireland; IT, Italy; JP, Japan; NL, The Netherlands; UK, United Kingdom; US, United States of America; EC, European Community.