

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
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JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

**Agenda Item 12**

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## **JOINT FAO/WHO FOOD STANDARDS PROGRAMME**

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

#### **THIRTY-FIFTH SESSION**

**ROTTERDAM, THE NETHERLANDS, 31 MARCH-5 APRIL 2003**

### **CONSIDERATION OF THE ELABORATION OF MRLS FOR SPICES**

*Prepared by South Africa in collaboration with its drafting partners including the  
Organization of Spice Trade Association*

#### **Background**

1. Since its 31<sup>st</sup> Session, the Committee has had discussions on trade problems experienced by developing countries due to lack of Codex MRLs on spices. Spices are grown in and exported almost exclusively from developing countries. In view of the very small consumption of spices, consumer health and safety problems are not expected; however, disruptions in international trade continue due to lack of MRLs on spices.
2. The different Sessions analyzed various aspects of the problems, reviewing the agricultural practices associated with the growing of spices, the manner in which pesticide residues would result in spices, and availability of information on GAPs and corresponding field trials. The consensus was that there was an immediate need to establish MRLs on spices; however, due to the large number of different spices available in trade, the number of different pesticides that can be used for each spice and the way spices are grown and treated with pesticides, it was neither practical nor cost effective to conduct supervised trials and establish GAPs for each pesticide/spice combination. The use of monitoring data to set MRLs for spices instead of the conventional method based on supervised trials conducted according to the GAP was considered and supported by the developing countries.
3. The 34<sup>th</sup> Session of the Committee accepted, in principle, the elaboration of MRLs for spices based on monitoring data provided by the producing country, and agreed that criteria needed to be elaborated for the development and use of such data, restricting the application to pesticides included in the Codex system. The Committee also agreed that for the time being, the approach should be limited to spices as defined in Codex group 028.
4. On this basis, the Committee invited the Delegation of South Africa and its drafting partners, including the International Organization of Spice Trade Associations (IOSTA), to prepare a paper giving further details of the definition of spices based on the Codex Classification and on the criteria to be applied for the use of monitoring data to establish MRLs on spices. It also requested that the paper include a discussion on the type and origin of extraneous residues of persistent pesticides found on spices. This document was prepared to address the requests of the Committee.

## Definition of Spices

5. In the Codex Classification of Foods and Animal Feeds (FAO, 1993<sup>1</sup>), spices are classified as Group 028 under Type 05 (herbs and spices) of Class A commodities (primary food commodities of plant origin).

6. The Codex Classification defines spices (Group 028, Code Letter HS) as consisting of dried aromatic seeds, roots, berries or other fruits from a variety of plants, which are used in small quantities to flavor foods. They are consumed primarily in the dried form after being added to or sprinkled on foods. The portion of the commodity to which the MRL applies (and which is analyzed) is the whole commodity as marketed, mainly in the dried form.

7. The spices in Codex Group 028 (Letter Code HS) are:

Code No.	Commodity	Code No.	Commodity
HS 93	Spices	HS 783	Galangal, rhizomes
HS 4769	Allspice fruit, see Pimiento	HS 784	Ginger root
HS 720	Angelica seed	HS 785	Grains of paradise
HS 4771	Angelica root	HS 4779	Horseradish
HS 771	Anise seed	HS 786	Juniper
HS 772	Calamus, root	HS 4781	Liquorice
HS 773	Caper buds	HS 787	Liquorice roots
HS 774	Caraway seed	HS 735	Lovage seed
HS 775	Cardamom seed	HS 788	Mace
HS 4775	Cassia, bark	HS 739	Nasturtium pods
HS 776	Cassia, buds	HS 789	Nutmeg
HS 624	Celery seed	HS 790	Pepper, black & white
HS 777	Cinnamon bark	HS 791	Pepper, Long
HS 778	Cloves, buds	HS 792	Pimiento, fruit
HS 779	Coriander seed	HS 4783	Poppy seed
HS 780	Cumin seed	HS 4785	Sesame seed
HS 730	Dill seed	HS 4787	Tamarind
HS 781	Elecampane root	HS 370	Tonka bean
HS 731	Fennel seed	HS 794	Turmeric root
HS 782	Fenugreek seed	HS 795	Vanilla beans

8. Chili pepper (dried), one of the most commonly used spice, is not in Group 028 of the Codex Classification. For purposes of the criteria being developed, the definition for spices should be expanded to add dried chili pepper to those currently in Group 028.

## Proposed Criteria for the Use of Monitoring Data to Set MRLs for Pesticides on Spices

9. In order to use available monitoring data for the elaboration of Codex MRLs on spices, the following criteria are proposed for consideration of the Committee:

9.1 Minimum data requirements

a. Scope

<sup>1</sup> Codex Classification of Foods and Animal Feeds, Pesticide Residues in Food, Codex Alimentarius Volume 2, page 274. FAO, Rome, 1993.

Monitoring data should be limited only to spices in Codex Classification Group 028 plus dried chili pepper. Only pesticides already in the Codex system should be proposed for MRLs for spices.

b. Number of observations

Just as the conventional method requires minimum number of trials, in the case of spices, an extensive database for each pesticide of concern is necessary. As a general rule, the MRL should cover >95% of the residue population with 99% confidence level. Therefore, it is proposed that a minimum of 100 observations from as many countries as possible should be available. The monitoring database should include a minimum of 3 different spices from at least 2 producing countries for each pesticide under evaluation. The residue levels should be at approximately comparable levels, i.e., no one spice should give a particularly high residue compared to the rest.

c. Data source

Data from both exporting and importing countries should be considered, specifying in all cases, the producing country. Data collected by the spice trade associations, submitted through their respective Country Delegations, should also be considered.

d. Type of data required

All relevant and geographically representative data (raw data), including the non-detectable residues (residues at or below the limit of determination) are required to estimate levels that cover international trade. The monitoring data should be consistent with the definition for spices and should be reported on dry weight basis.

e. Timeframe of data collection

More recent data would be more meaningful in providing an indication of current residue situations relevant to spices moving in international trade. It is proposed that data should have been generated within the last 5 years. Data older than that would be useful as supplemental information.

f. Sampling information, analytical procedures used

A description of the sampling procedures, analytical method(s) used, including residue definition, % recoveries, and the limit of determination should be provided together with the monitoring data.

g. Dealing with data variations and outliers

In some cases, there may be considerable variations in residue levels in the database. Outliers may also be observed. It is proposed that a method for dealing with these outliers be considered by the Committee.

## 9.2 Estimating the MRLs based on monitoring data

a. Group MRL for spices (HS 93)

A group MRL for spices should be established for each pesticide of concern, instead of setting MRLs for each of the pesticide/spice combinations.

b. MRL on dry weight basis

Since the spices in Group 028 are all marketed dried, the MRL should be proposed on dry weight basis. The industry practice is to use an average “dehydration factor” of 10 i.e., assuming 90% dry matter if the moisture content is not declared.

c. Setting the MRLs

The procedure for setting MRLs currently employed by JMPR should be followed, using the highest residue value from the monitoring data for each pesticide found on spices, and proposing the MRL based on an approximate geometric progression.

d. Acceptable dietary exposure estimates

The MRLs established for spices based on monitoring data should result in chronic and acute dietary exposures below the ADI and ARfD (if applicable), for each pesticide of concern.

### **Persistent Pesticide Residues Found in Spices**

10. The 34<sup>th</sup> Session noted the request of some Delegations to also establish EMRLs for persistent pesticides found in spices such as DDT, lindane, and BHC. These pesticides have all been banned for use in agriculture in the spice producing countries. However, they are still being used for public health purposes, where they are sprayed, possibly near agricultural fields. Although residues in spices could result from environmental contamination due to previous uses of these persistent pesticides in agriculture, residues could also come from drift in present-day spraying for public health purposes. Strictly speaking, these residues could not be considered as extraneous residues as the persistent pesticides are still being used, even if not for agricultural purposes.

11. Residues of DDT, BHC, and lindane have been found in spices as evidenced by available monitoring data. It is suggested that for these compounds, MRLs instead of EMRLs be established in the same manner as for other pesticides on spices, following the same criteria as proposed above.

### **Recommendations:**

12. The Committee is invited to consider the criteria for the use of monitoring data for elaboration of MRLs on spices as proposed above. The Committee is further requested to:

- Schedule for JMPR review, the establishment of MRLs on spices for pesticides already in the Codex system, beginning in the 2003 meeting of JMPR;
- Ask governments, spice trade industry, and interested parties to organize the monitoring data on spices according to the format prescribed by the JMPR and to send the data to South Africa who will then collate the information and submit the consolidated data to JMPR as soon as the schedule for evaluation has been set;
- Consider the inclusion of spices among the commodities for which MRLs should be established, whenever a pesticide is evaluated under the periodic review process, if the pesticide is one of those observed on spices in the monitoring process.

13. It is also recommended that governments and the spice trade industry continue to collect monitoring data for pesticides on spices on a regular basis, following agreed criteria and other JMPR requirements for data submission, in order to keep the database updated for future review.