codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 10 **CX/PR 01/16**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON PESTICIDE RESIDUES
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The Hague, The Netherlands

CONSIDERATION OF ELABORATION OF MRLS FOR SPICES

(Prepared by South Africa)

BACKGROUND

1. At the 32nd Session the Committee considered a paper (prepared by India) proposing to establish MRLs/EMRLs for spices. The Committee agreed that a circular letter be sent to governments to seek information on: (i) pesticides used on spices, their GAPs and the availability of monitoring and residue trial data; (ii) compounds not registered for use on spices but frequently detected in spices and the availability of monitoring and toxicological data (if no PTDI had been established); and (iii) national policy for regulating pesticide residues in spices, such as setting MRLs. In response to CL 2000/27 - PR India, Mexico, Thailand and the United States of America submitted comments to South Africa to prepare a summary document.

PESTICIDES USED ON SPICES

NAMES OF PESTICIDES

2. In India a large number of pesticides are used on spices. A total of 36 active ingredients are involved. The following pesticides are used on four or more different spices: carbaryl, carbendazim (benomyl), carbofuran, copper oxychloride, dicofol, dimethoate, endosulfan, mancozeb, monochrotophos, phorate, phosphamidon, quinalphos and sulphur. The other pesticides are acephate, aldicarb, Bordeaux mixture, captafol, captan, chlorpyrifos, cypermethrin, demeton-S-methyl, dichlorvos, EDB, ethion, formothion, malathion, metalaxyl, methyl bromide, methyl parathion, mercury compounds, thiram and zineb. Not all of these uses are, however, approved uses.

3. Mexico reported that there are presently no pesticides registered on spices. Thailand indicated that metalaxyl, benomyl, cadusafos, carbofuran, fenamiphos, phosphorus acid, prochloraz and petroleum oils are used.

4. The United States of America reported that the following pesticides (including post-harvest fumigations) are used on spices: methyl bromide, ethylene bromide, 1,2-dibromo 3-chloropropane, endosulfan, ethylene oxide, fludioxonil, glyphosate, hydrocyanic acid, mancozeb, methyl parathion, paraquat dichloride, prometryn, propylene oxide and phosphine.

NAMES OF SPICES ON WHICH THESE PESTICIDES ARE USED

5. India indicated that these pesticides are used on chilli, pepper, turmeric, ginger, coriander, fennel, fenugreek and cumin. In Thailand almost all the pesticide usage is on pepper (black, white) except petroleum oils which are used on turmeric root. In the United States of America MRLs have been established for allspice, anise, caraway, cassia, celery seed, cinnamon, clove, coriander, cumin, dill (seed), fennel, spices, mace, mustard (seed), nutmeg, pepper (black, red, white) and poppy (seed). Most of these MRLs are for post-harvest fumigation.

GOOD AGRICULTURAL PRACTICE (GAP)

6. India has indicated that it can provide the GAPs for the pesticides used on spices. Thailand provided information on GAP (dose rate and use pattern *viz.* soil application, ground application) in its response to CL 2000/27 - PR. The United States of America did not submit any GAP information.

THE AVAILABILITY OF RESIDUE TRIAL AND MONITORING DATA

7. India regularly conducts monitoring for pesticide residues in spices and spice products. The following pesticides are included in the monitoring programme: endosulfan, chlorpyrifos, dimethoate, ethion, methyl parathion, phorate, quinalphos and cypermethrin. The monitoring data can be supplied to the JMPR but no residue trial data are available. The United States of America indicated that residue trial data were not submitted and that no FDA monitoring data are available.

PESTICIDES NOT REGISTERED FOR USE ON SPICES BUT FREQUENTLY DETECTED IN SPICES

NAMES OF PESTICIDES

8. India reported that BHC, DDT and lindane are frequently detected in spices. Endosulfan, ethion, chlorpyriphos and cypermethrin were also found on spices on which these compounds were not registered. In Mexico endosulfan and methamidophos are frequently detected on chillies. The United States of America frequently found diazinon, lindane, carbaryl, ethion, thiabendazole, chlorpyrifos, methamidophos, acephate, profenofos, procymidone, cypermethrin, quinalphos, endosulfan and BHC on spices.

NAMES OF SPICES IN WHICH THE ABOVE PESTICIDES ARE FREQUENTLY DETECTED

9. India found unregistered pesticides on pepper, chilli, cumin, coriander, fennel, ginger and turmeric. Mexico reported unregistered pesticides on whole dry chillies (whole spices, capsicums). In the United States of America unregistered pesticides were found on cilantro and black pepper.

AVAILABILITY OF MONITORING DATA

10. India and the United States of America indicated that monitoring data are available.

AVAILABILITY OF TOXICOLOGICAL DATA (IF NO PTDI/OR ADI HAS BEEN ESTABLISHED)

11. Most of the pesticides referred to above have been evaluated by JMPR. None of the reporting countries gave any indication on the availability of toxicological data on other pesticides.

NATIONAL POLICY FOR REGULATING PESTICIDE RESIDUES IN SPICES, SUCH AS SETTING MRLs

12. From the country comments it would seem that only the United States of America have official MRLs for spices. Mexico indicated that the same trial requirements, as established for conventional crops, would apply to the establishment of MRLs in spices but to date no applications have been received. Only the United States of America provided information on the field trial requirements. Since spices are produced and consumed in relatively small quantities the field trial requirements for MRLs are minimal. An MRL for a specific pesticide on all spices necessitates conducting field trials on black pepper and celery seed or dill seed. Three trials must be conducted on each commodity, for a total of six trials.

CONCLUSIONS

13. Since registered and unregistered pesticides are regularly used and detected on spices there is a need for the elaboration of MRLs (and possibly EMRLs) on spices. Although a large number of pesticides are regularly used on many spices it would seem that only the United States of America has officially established MRLs. The many spice/pesticide combinations currently being used in spice-producing countries also add to the complexity of the problem.

14. It would seem that very little residue trial data are available although two countries did indicate that trials must be submitted when application is made for a national MRL. Only one country had specific guidelines for spices. These guidelines take into account that spices are produced and consumed in relatively small quantities.

15. Some countries indicated that GAP and monitoring data could be made available to the JMPR for consideration for the elaboration of Codex MRLs. At this stage it is difficult to determine which spice/pesticide combinations should receive priority or to express an opinion on the quality and quantity of the data that could be submitted.

POSSIBLE OPTIONS

15. The Committee could consider the following options:

(i) Refer the matter to the JMPR for consideration, taking into account that spices are produced and consumed in relatively small quantities, whether the elaboration of Codex MRLs could be considered using only GAP and monitoring information.

(ii) Request spice-producing countries to prepare a submission to the JMPR, giving details on the GAP and monitoring data for different spice/pesticide combinations, for consideration if this information would be acceptable for the elaboration of Codex MRLs.

(iii) Request the JMPR to give guidance to member countries on trial requirements for spices, taking into account that spices are produced and consumed in relatively small quantities.