

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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TO Codex Contact Points
Contact Points of international organizations having observer status with Codex

FROM Secretariat,
Codex Alimentarius Commission,
Joint FAO/WHO Food Standards Programme

SUBJECT **REQUEST FOR COMMENTS AT STEP 3 ON THE PROPOSED DRAFT CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN CONTAMINATION IN SPICES**

DEADLINE **20 March 2017**

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BACKGROUND

1. The 9th Session of the Codex Committee on Contaminants in Foods (March 2015) agreed to start new work on a code of practice for the prevention and reduction of mycotoxin contamination in spices with a structure having general guidance applying to all spices and annexes to address mycotoxin/spices or groups of spices combinations. The Committee agreed to establish an Electronic Working Group chaired by Spain and co-chaired by India and The Netherlands to carry out such work for comments and consideration at its 10th session.¹
2. The 38th Session of the Codex Alimentarius Commission (July 2015) approved the new work.²
3. The 10th Session of the Committee (April 2016) considered the COP as follows:

General Provisions (Body of the COP)

 - 3.1 The Committee agreed on a number of recommendations on the general provisions of the COP namely: (a) to limit the scope of work to spices only; (b) to include packaging technologies that ensure the maintenance of moisture as options for use in recognition that these technologies were expensive and not always practical for use by all countries; (c) to include smoke-drying processes widely used by countries; (d) to consider any ongoing work in the Committee³ and in other committees⁴ to ensure there was no overlap and inconsistencies between the various sets of work; (e) to include a reference to the Code of Hygienic Practice for Low Moisture Foods and its annex on spices and culinary herbs and not to repeat general guidance from this annex, but only in those cases where it was necessary to build on the measures already included in the aforesaid annex.

¹ REP 15/CF paras. 140 - 144

² REP 15/CAC, Appendix VI

³ Establishment of maximum levels for mycotoxins in spices (CCCF).

⁴ Categorization and prioritization of spices (CCSCH), revision of the Classification of Food and Feed (spices) (CCPR)

Specific provisions (Annexes of the COP)

- 3.2 The Committee noted that there was a need to further consider the approach to the annexes but that the proposed categories of spices⁵ were a useful starting point. In addition, there might not be a direct correlation of the grouping of spices for the annexes with the priority spices for the development of maximum levels as the intent of work on the annexes was to consider whether the same agricultural, production and handling measures could apply to groups of spices.
4. The Committee agreed to:
- Continue work on the general (body) and specific provisions (annexes) of the COP. The annexes will address two main group of mycotoxins (total aflatoxins and OTA) and will use the categories of spices as described in CX/CF 16/10/12, Appendix II, Part I as a starting point.
 - Issue a circular letter to request information on all available proven measures used in practice to reduce contamination by mycotoxins in spices that will help guide the development of possible annexes to the COP.
 - Re-establish the EWG, chaired by Spain and co-chaired by India and The Netherlands to continue the drafting of the COP and its annexes taking into account the discussion held and written comments submitted at CCCF10 as well as the information submitted in reply to the CL.
5. The EWG revised the COP as instructed by the Committee and provided a revised COP for comments by Codex members and observers and consideration by CCCF as contained in Appendix I.
6. In revising the COP, the EWG proposed a number of recommendations in relation to the general (body) and specific (annexes) provisions of the COP for consideration by CCCF. These recommendations are contained in paragraphs 3 and 7 of Appendix II.
7. The summary of the key points of discussion and decisions made by the EWG (including conclusions and recommendations for consideration by CCCF) are contained in Appendix II.
8. The List of Participants is provided in Appendix III.

REQUEST FOR COMMENTS

9. Codex members and observers are kindly invited to provide comments on the proposed draft Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Spices as contained in Appendix I.
10. In submitting comments, Codex members and observers are kindly invited to take into account the summary provided by the EWG in Appendix II in particular the recommendations in paragraphs 3 and 7.

⁵ CX/CF 16/10/12, Appendix II, Part I: This paper was considered by CCCF10 and identifies two main group of mycotoxins i.e. Aflatoxin (B1, B2, G1, G2) and Ochratoxin (Ochratoxin A – OTA) and main group of spices based on their morphology and the parts of plants used, as well as on their major utility and the terminology used in global commerce i.e. (1) Dried fruits and berries; (2) Dried roots, rhizomes, bulbs; (3) Dried seeds; (4) Dried floral parts; (5) Dried leaves; (6) Dried bark; (7) Others.

**PROPOSED DRAFT CODE OF PRACTICE FOR THE
PREVENTION AND REDUCTION OF MYCOTOXINS IN SPICES
(For comments)**

1. INTRODUCTION

1. The production, processing, packing and distribution of spices can be very complex. These processes can span long periods of time and possibly include a wide range of establishments. Dried product processing generally involves cleaning (e.g. culling, sorting to remove debris), grading, sometimes soaking, slicing, drying, and on occasion grinding/cracking. Some spices are also treated to mitigate microbial contamination. Processing and packing/repacking may also take place in multiple locations over long periods, since spices are prepared for different purposes.

A. Objectives

2. The objective of this document is to establish a general code of practice for the prevention and reduction of mycotoxins in spices in order to attain the lowest achievable level of these toxins by applying good practices throughout all the steps in the food chain, thus reducing consumers' exposure through preventive measures.
3. This code of practice addresses specific Good Agricultural Practices (GAPs), Good Manufacturing Practices (GMPs) and Good Storage Practices (GSPs) that would help minimize mycotoxin contamination throughout all stages of the production of spices from primary production to consumer use.
4. Good Agricultural Practices (GAPs), GMPs and GSPs are applied at the pre-harvest stage, and during processing and storage, respectively.

B. Scope, use and definitionsScope

5. This Code applies to spices - whole, broken, ground or blended. Dried aromatic herbs are not included under the scope of this COP.

Use

6. This Code should be used in conjunction with the [Code of Hygienic Practice for Low Moisture Foods \(CAC/RCP 75-2015\) and its annex on spice and culinary herbs](#).
7. This Code is a recommendation to which producers in different countries should adhere as far as possible taking into account the local conditions and difficulties in implementation of all the measures specified therein while ensuring the safety of their products in all circumstances. Flexibility in the application of certain requirements of the primary production of spices can be exercised, where necessary, provided that the product will be subjected to control measures sufficient to obtain a safe product.

Definitions

8. **Spices:** Dried components or mixtures of dried plants used in foods for flavouring, colouring, and imparting aroma. The term applies equally to spices in the whole, broken, ground and blended forms.
Spices may include the aril (e.g. the mace of nutmeg), bark (e.g. cinnamon), berries (e.g. black pepper), buds (e.g. clove), bulbs (e.g. garlic), (e.g. saffron) rhizomes (e.g. ginger, turmeric), seeds (e.g. mustard), flowers or stigmas (e.g. saffron), pods (e.g. vanilla), resins (e.g. asafoetida), fruits (e.g. chilli and plant tops).
9. **Source Plant:** plant (non-dried) from which the spice is derived.

2. RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)**2.1 Pre-harvest agricultural conditions**

10. Spices are susceptible to contamination by toxigenic fungi in the field. The use of appropriate good agricultural practices (GAP) to reduce the toxigenic fungi growth and dissemination is recommended.
11. It is also recommended to encourage research studies on the factors affecting the formation of mycotoxins.
12. A proper crop rotation or sequence should be applied in order to regenerate the soil fertility and reduce the inoculum load of the relevant toxigenic fungi, to minimize the carry-over of moulds from one year to the next.

13. Reduction of plant stress using irrigation, fertilization, pruning and pest and disease control should be implemented.
14. Insect damage which enhances to fungal infection in the vicinity of the crop can be minimized by proper use of registered insecticides and other appropriate practices within an integrated pest management program.
15. Recommended insecticides may be necessary to use, when conditions require, minimizing damage to fruits, which may later favour entry and development of toxigenic fungi; for example, through open galleries made by caterpillars.
16. Weeds around the crop should be controlled by use of mechanical methods or by use of registered herbicides or other safe and suitable weed eradication practices. It may also be useful to establish an appropriate planting density and prevent weed proliferation during plant development.
17. The use of recommended soil fungicides in the process of farm soil preparation may be beneficial to reduce the inoculum load of toxigenic fungi. At sowing, use disinfected seeds to prevent mold and insects and carefully choose the planting season so that the collection of fruits takes place in the driest season. This good practice is essential in areas with warm and humid climate.
18. The use of fungicides is a very effective practice to prevent fungal growth. However, fungicides must be applied with special care since some of them could lead to the reduction of certain non-toxigenic fungal flora and stimulation of other toxigenic fungi growth.
19. It is recommended that untreated organic waste should not be applied to soil surrounding the crop in the field as it could allow the proliferation of toxigenic fungi, human pathogens, food spoilage bacteria, and also weed seeds and other unwanted plants. Therefore, the use of properly treated organic waste ([compost](#)) is encouraged in order to improve soil fertility and increase competitive fungi.
20. Spray irrigation should be avoided during the flowering period for all the spices coming from aerial parts of the plant. This could increase both the rate of normal dispersion of spores and the chances of fruit infection with toxigenic fungi. It is recommended also to avoid flood irrigation because it could spread disease throughout the field.
21. Soil with good drainage must be chosen in order to avoid water logging.
22. It is recommended to remove diseased and injured plants or part of the plants from the field in order to reduce inoculum load of the relevant toxigenic fungi.

2.2 Post-harvest agricultural conditions

2.2.1 Harvest

23. During the harvesting operation, the moisture content should be determined in each load of the harvested commodity since it affects drying times. To the extent possible, avoid harvesting crops with high moisture content (for instance, due to precipitation or morning dew and/or during late afternoon) as it takes a longer time to dry thus fungus growth and mycotoxin formation may occur.
24. Mechanical damage, a type of stress that occurs during the post-harvest manipulation of crops, which is accompanied by physiological and morphological changes that increase the possibility of subsequent contamination, should be avoided.
25. Fruits and other spice components that have fallen to the ground are known to be exposed to mould growth. Crops that are affected by mould or infected should be removed. Alternatively, the source plant that has fallen to the ground can be collected separately, if it is washed, cleaned, dried and evaluated for contamination prior to any inclusion within the main lot.
26. The soil under the plant should be covered with a clean sheet of plastic during picking to avoid commodities from getting contaminated by dirt or mixed up with mouldy parts of the plant that have fallen prior to harvesting.
27. Wherever possible a system for differential harvesting should be applied, so that once products are ripe they are harvested. This ensures good quality and helps prevent mould growth and mycotoxins production from overripe crops.
28. Drying of crops should begin immediately after harvest and farmers should not hold the crop in piles or in bags for any period of time and when necessary plastic sheets should be used to cover the crop in the event of rain during the drying process.

29. The harvesting procedures implemented each season should be documented by making notes of measurements (e.g., temperature, moisture, and humidity) and any deviation or changes from recommended practices. This information may be very useful for explaining the cause(s) of fungal growth and mycotoxin formation during a particular crop year and may help to avoid similar mistakes in the future.

2.2.3 Transport

30. Containers and transportation devices (e.g. wagons, trucks) to be used for collecting and transporting the harvested commodity from the field to drying and storage facilities after drying, should be clean, dry and free of crop residues, old plants, plant dust, insects and visible fungal growth before use and re-use.
31. Harvested commodities that have not been dried to a safe storage moisture level should not be stored or transported in closed bins, wagons or trucks. When necessary, it is recommended that the trucks and containers should allow appropriate aeration and minimise the condensation effects, under conditions protected from rain (e.g. lateral openings).

2.2.4 Storage (source plant)

32. Fresh material for spices or source plants should be processed as quickly as possible. Avoid storage of source plants as any period of storage (in a bag or in a pile) increases the likelihood of mould growth. Wherever possible, start drying on the day of harvesting. Source plants should be packed in bags made of porous material such as jute bags or woven plastic bags. Avoid non-porous plastic bags for packing of dried products.
33. Gunny bags should be stored off the floor (on pallets) and away from the walls (at least 30 cm) so that any potential condensation does not cause the product to become wet and to avoid the chance of moisture entering through the wall. Internal walls, floor surfaces, the junctions of the floor with the walls and the junctions between two walls should be made with a smooth, water-proof, non-absorbent, washable and non-toxic material.
34. Control of insect and rodent activity and maintenance of appropriate moisture levels and temperature in the storage room is essential. Insects and rodents can spread contamination and spoil the crop. If possible, only the amount that can be processed in a timely manner should be picked in order to minimize growth of toxigenic moulds prior to processing.
35. Storage facilities should include dry, well-vented structures that provide protection from rain, drainage of surface water, protection from entry of rodents and birds, and minimum temperature fluctuations.
36. The storage facilities should be cleaned and disinfected with appropriate substances (which should not cause off-odours, flavours or contaminate the crop). The use of registered fumigants or insecticides within the permissible level may be useful.
37. Store fresh material for spices or source plants in controlled temperature storage of 5 to 8 degrees Celsius. Care must be taken in cold storage to prevent condensation from the chiller units falling onto the product.
38. Relative humidity of storage conditions should be less than 75 %.

2.3 Industrial processing conditions

2.3.1 Sorting

39. It is necessary to separate the raw material upon receipt, to prevent any cross-contamination during the cleaning, washing, and processing stages.
40. Raw materials should be inspected and sorted prior to introduction into the processing line. The inspection may include visual inspection and removal of foreign material, the absence of any musty odours and analytical tests for mycotoxin contamination.
41. When necessary, prior to drying, the harvested products should be sorted to remove any visible organic debris or moldy products before washing with potable water. Prior to washing, there should be a selection process to eliminate any fresh source plant showing symptoms of fungal infection, and small portions of any contaminated fruit should be removed, because they can contaminate a whole batch. This procedure can be carried out on the farm. The discarded materials should be properly disposed of in order to avoid the recontamination of the clean material.

2.3.2 Processing

42. The time between harvesting and drying should be as short as possible, including transport from the field to post-harvest facilities.

43. Drying should be done on a concrete surface, preferably a raised platform. Whenever possible, avoid drying on plastic sheets or tarpaulins as the moisture remains in contact with the source plants during the drying process. In case those plastic sheets or tarpaulins are used, extra care should be taken for homogeneous drying by shifting the spices on regular intervals.
44. Proper storage is necessary to prevent biological activity through adequate drying to an appropriate moisture level for the spice. The raw material for spices should be covered with plastic sheets at night to avoid having dew come in contact with the raw material. Care must be given to minimize moisture condensation. Growth of mould prior to, during and after drying may result in mycotoxin production. Inappropriate handling of raw materials may support the growth of several spoilage and toxigenic moulds prior to drying. Proper drying of spices to achieve a water activity below 0.60 is adequate to prevent mycotoxin production. Below a water activity of 0.60, there is hardly any mould growth.
45. The drying area should be elevated to prevent pest ingress and potential flooding, and should be constructed of a material that can easily be cleaned and that will not contaminate the stored spices.
46. A concrete pad can serve this purpose and in this case it should have a slightly sloping surface to allow water runoff from the product and should have a perimeter fence to prevent farm animals, pets, pests, etc. from accessing the source plant or raw material for spices as it is drying.
47. It is important to ensure that the drying yard is cleaned prior to use.
48. Drying methods:
 1. Sun drying
 - a. Drying should not occur directly on the ground. Use trays, tarpaulins, bamboo mats or drying yards, and make sure that these are clean as it is known that mould spores from previous use could re-contaminate product during drying. Techniques for cleaning all of the above should be taught to farmers. Never use cow dung paste in bamboo mats to fill the holes.
 - b. The availability of additional tarpaulins should be ensured to cover the source plant (raw material) in case of any unexpected rain. When using tarpaulins, care should be taken that condensation of water is prevented, e.g., by keeping lateral holes to increase ventilation.
 - c. Drying areas should be raised from the ground to prevent water or pests from entering. Sun drying by using trays put on racks at a sufficient distance from soil may be applied. This practice allows air circulation to accelerate the drying.
 - d. Pathways should be made in the drying area to prevent walking on the source plant, as this can damage the source plants and leads to mould growth.
 - e. In the case of spices coming from fruits, for instance, the layer of drying fruits should not be more than 4 cm thick, the drying fruits must be regularly raked (5-10 times per day) and fruits should be protected during drying from rain and night dew. Fruits should not be allowed to get re-wet during storage or any other time.
 2. Controlled drying
 - i. A controlled drying system can be employed to give better quality, reduced fungal contamination and ensure less risk of mycotoxin production.
 - ii. Solar drying is one method, where raw material are protected in polythene tunnels and the temperature is controlled through the use of air circulation. Such tunnels should be designed so that the risk of condensation on the crop is eliminated.
 - iii. Hot air drying can also be employed and care should be taken to ensure that there is no risk of fumes from the fuel coming into contact with the product. This can be best achieved through the use of a heat exchanger so that only clean air comes into contact with the product.
 - iv. A solar heat exchanger can also be used where hot air is generated from the sun's rays.
 - v. The recommended optimum drying temperature is 50-60 Celsius degrees and relative humidity in the drying chamber should be reduced to 12-14 % moisture level.
 3. Smoke drying
 - a. Refer to the *Code of Practice for the Reduction of Contamination of Food with Polycyclic Aromatic Hydrocarbons (PAH) from Smoking and Direct Drying Processes* (CAC/RCP 68-2009).

- b. This type of controlled drying must be carried out in drying houses. Drying houses have a variable size, but the structure is either rounded or squared, around five meters high. The material used to build the drying house is terracotta or bricks. The smoke is produced with wood and the temperature must be under control.
 - c. This system is conducive to slow, gentle, non-aggressive drying so that within 10 to 15 days the water content of the fruit falls from 80 % to under 15 %. The final product obtained has a smoky taste and aroma and a very stable colour.
49. Drying of source plants may be performed mechanically (for rapid drying) or naturally (e.g. slower drying under the sun for several days). Both processes are detailed in the Code of Hygienic Practice for Low-Moisture Foods (CAC/RCP 75-2015), ANNEX III, Annex on Spices and Dried Aromatic Herbs, as well as in the IOSTA (International Organisation of Spices Trade Associations) Guidelines for Good Agricultural Practices for Spices. For instance, mechanical drying is recommended for plant sources such as nutmeg as the harvest occurs during the rainy season.
50. Before grinding the source material, a cleaning step can be applied as an optional choice.
51. Sterilization processes are effective in reducing the mould load in spices. These mould-reducing processes should be considered once the spice is dry (final processing). There is at least one process authorized for reduction of fungal growth in spices (gamma irradiation) in some countries/regions. It has been proven to be efficient in eliminating fungi in chilli, coriander, cumin, turmeric and Ashanti pepper. Moreover, other treatments, such as UV, can be utilized to reduce or eliminate toxigenic fungal spores in spices

2.3.3 Storage after Drying and Cleaning

52. Fungal growth on stored spices is mainly influenced by temperature and relative humidity of the storage facility and the moisture content of the spice.
53. Temperature levels within large warehouses can be ideal for mould growth, particularly towards the roof, thus suitable ventilation should be provided in order to ensure proper management/control of both temperature and humidity.
54. Specific conditions to be utilized include the use of local ventilation systems that force the production of currents of cold, dry air to assure good ventilation, storage in a clean, dry place, and protection from dust, debris, insects and rodents. Product should be stored in well maintained warehouses that do not allow the ingress of water whether through leaks in the roof or walls or under doors, through open windows, etc.
55. Spices should not be stored with other food commodities (such as fruits, vegetables, fish) and non-food products (such as kerosene, lubricating oils) that may affect the moisture content (e.g., increase in moisture for growth of mycotoxin producing fungi), as well as flavor or color of the spice.
56. Spices should be kept in areas where contact with water or moisture is minimized.
57. It is also important to ensure that product is stored off the floor and away from the walls so that any potential condensation does not cause the product to become wet. In addition, there should be good air circulation through the warehouse to prevent condensation and mould growth.
58. To the extent possible, storage locations should prevent access by rodents or other animals and birds and should be isolated from areas of excessive human or equipment traffic.
59. Practices should be in place to minimize insect infestation in the spices at all stages of production, particularly during storage. Increased insect populations raise both the temperature and moisture content of the spices allowing for the subsequent growth of moulds and production of mycotoxins. The movement of insects through the spices facilitates the distribution of the moulds and mycotoxins throughout the product.
60. The effectiveness of the use of chemical compounds to prevent fungal growth and mycotoxin production has to be demonstrated. If allowed, treatments with approved chemicals including sodium bisulfite, ozone, or acids and bases represent an opportunity to control fungal growth and mycotoxin biosynthesis in stored spices. The use of bases like ammonia can affect the aroma of spices. Hence it should not be recommended.
61. The storage procedures implemented each season should be documented by making notes of measurements (e.g., temperature, moisture, and humidity) and any deviation or changes from recommended practices. This information may be very useful for explaining the cause(s) of fungal growth and mycotoxin formation during a particular crop year and may help to avoid similar mistakes in the future.

2.3.4 Transport from Storage

62. It is important that the operator select reliable transport service-providers that adopt this code of practice and ensure appropriate transport conditions.

2.3.4.1 Preventing moisture content

63. When the commodity is moved into or out of the warehouse, ensure that it is protected from the rain.
64. During transportation, attention should be given to avoid re-entering of water/moisture into the commodity and to ensure that pests or debris cannot penetrate into the commodity.
65. Regular checks should be made to ensure that the truck is covered and that there are no rips in the covers and no leaks on the undersides of trucks which could allow water from the road to get into the truck. Check from the inside by closing all doors and looking for holes where daylight is visible.
66. Trucks must be clean, dry and odour-free which helps to prevent cross contamination from previously transported products.
67. The pallets or wooden floors of transport containers should be dry. For products that require a long period of transportation, temperature and humidity should be monitored, where appropriate. Spices absorb moisture quickly if the bags get wet and as a result the moisture content increases considerably.

2.3.4.2 Hygiene practices during transportation

68. Refer to the Code of Hygienic Practice for Low-Moisture Foods (CAC/RCP 75-2015), ANNEX III, Annex on Spices and Dried Aromatic Herbs.
69. Bags should preferably be placed on a layer of pallets to avoid contact with the floor where condensation from the ceiling and walls may gather. If available, fully ventilated containers are preferable for spices in bags, especially if shipped from a high humidity origin.
70. Ventilation holes in the container are to be kept clear. Do not cover with tape.
71. Desiccant boxes filled with calcium chloride can absorb around 100 % of their own weight in moisture and may be used for added protection.
72. It is important that care is taken not to damage these dry-bags and any spillages should be cleaned up immediately.
73. Ample top space between bags and the roof is important to be maintained. Use the saddle stow method, which minimises side contact and maximises airflow between the bags.

2.3.5 Packaging

74. Because dried spices are hygroscopic, they must be packaged quickly after processing using a material that serves as a barrier to moisture. The use of packaging technologies that ensure the maintenance of moisture, such as vacuum or modified atmosphere, with the use of the appropriate packaging material is an option of use.
75. Use of appropriate packaging can help to prevent insect contact with the commodity and therefore, limits mould growth. Packaged commodities should be kept free of moisture or humidity.
76. Packing activities can occur in the growing/harvest area. Such packing operations should include the same sanitary practices, where practical, as packing spices in establishments or should be modified as needed to minimize risks. To prevent germination and growth of spores, the products must be dried to a safe moisture level prior to packing.
77. New bags should be used when packing spices in the growing/harvest area for transport, storage, or for further sale, to prevent the potential for microbial, physical and chemical contamination.
78. Containers should be inspected immediately before use to ensure that they are in a satisfactory condition, as defined by the manufacturer, and where necessary, cleaned and/or disinfected; when washed, they should be well drained and dried before filling.
79. Removal of discarded plant material should be done on a regular basis in order to avoid accumulation that could promote the presence of pests.

2.3.6 Labeling and distribution/information to consumers

80. The manufacturer may indicate the best-before date of the commodity. This date will be justified by completing appropriate studies that take into account the characteristics of the packaging, examining unfavourable conditions that may promote mould growth and verifying the quality of the final product in order to give assurance that no mycotoxins contamination will occur until the end of the shelf-life indicated for consumption of that commodity.

81. The manufacturer should indicate specific storage instructions to include but not be limited to storage in a cool, dry, well-ventilated area away from heat sources such as ovens and areas with high humidity; avoid storing in a refrigerator to prevent condensation, etc.
82. The manufacturer should specify tips for good use by the consumer to minimize the risk of mycotoxins contamination which include avoiding contact with wet utensils and wooden spoons, closing containers tightly immediately after use, avoiding unnecessary stockpiling and checking the best-before date.

SUMMARY REPORT
For information by Codex Members and Observers
when considering the COP in Appendix I
(Paragraphs 3 and 7 will be considered by CCCF)

**GENERAL PROVISIONS TO PREVENT AND REDUCE MYCOTOXIN CONTAMINATION IN SPICES -
CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN
CONTAMINATION IN SPICES**

1. The EWG prepared a new draft following directions given by the Committee for its content. The revised COP (now presented in Appendix I to this CL) was elaborated on the basis of the paper presented for discussion at CCCF10 (CX/CF 16/10/12, Appendix I).
2. In revising the COP, the EWG came to the following conclusions:
 - In general, the EWG reached consensus on the revised COP as presented in Appendix I. The following were the main specific aspects discussed in the EWG:
 - i. The scope of the COP (Part B of the Introduction) has been narrowed to “Spices” (as opposed to “dried aromatic herbs or culinary herbs”) by deleting “leaf/leaves or herbs” in accordance with the discussion held at CCCF10 and the Classification of Food and Feed (CAC/MISC 4-1989).

In fact, the term “spice” (Type 005-Group 028) applies to the seeds, roots, berries or other fruits, flowers or stigmas in the revised group of spices of the Classification (REP11/PR, Appendix VI – to be adopted by CAC).

Besides, although no cross-reference can be made at this stage to the grouping of spices (which is still under consideration by the Codex Committee on Spices and Culinary Herbs in CX/SCH 17/03/9), the term “culinary” has been referred to as the leafy green part of a plant, which is in line with the definition of “aromatic herb”.
 - ii. In paragraph 19 (reference to the term “compost”), most of the EWG members, except for one, were in favour of keeping this paragraph as it is in the text because it is coherent and useful for the purpose of the COP.
 - iii. In paragraphs 37 and 38 (conditions for temperature and humidity during storage of fresh material for spices), most of the EWG members, except for one, were in favour of including these conditions in the text.
 - iv. In paragraph 47, point 3 (“Smoke drying”), there was agreement in including the details on the material to be used in this type of processing step.
 - v. In section 2.3.4.2 (hygiene practices during transportation), it was agreed to keep only the management practices directly related to mycotoxins and to delete the general practices related to hygiene which appeared in paragraphs 63 to 69 of the former COP (CX/CF 16/10/12, Appendix I).
 - vi. In section 2.3.5 (packaging), it has been agreed to keep only the management practices directly related to mycotoxins and to delete the general practices related to hygiene which appeared in paragraph 78 of the former COP (CX/CF 16/10/12, Appendix I).
 - vii. The last part of section 2.3.6 (labelling and distribution/information to consumers) was revised taking into account the documentation from the Codex Committee on Food Labelling. In this sense, the term “best-before date” has been adopted because it is more appropriate for spices and is the term currently under discussion in CCFL (Revision of the General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985)), i.e. the aim is to keep the quality and texture at its best.

RECOMMENDATIONS

3. The EWG makes the following recommendations to CCCF:

- To propose the Committee to consider the proposed draft code of practice for the prevention and reduction of mycotoxins in spices for advancement in the step procedure.
- To propose the Committee on Food Hygiene to consider the possibility of including some general practices for spices on hygiene (Section 2.3.4.2) and packaging (Section 2.3.5) mentioned in paragraph 2 (points V and VI) within the Code of Hygienic Practice for Low Moisture Foods, Annex III on spices and dried aromatic herbs (CAC/RCP 75-2015).
- To propose the Committee on Food Labelling to endorse the part of this COP dealing with Labelling and distribution/information to consumers (Section 2.3.6), already mentioned in paragraph 2 (point VII).

SPECIFIC PROVISIONS TO PREVENT AND REDUCE MYCOTOXIN CONTAMINATION IN SPICES: ANNEXES TO THE CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN CONTAMINATION IN SPICES

4. The development of the “specific provisions to prevent and reduce mycotoxin contamination in spices” was assessed on the basis of the information contained in the paper presented for discussion at CCCF10 (CX/CF 16/10/12, Appendix II) and all information gathered by CL 2016/21-CF⁶ ‘Request for information on management practices for the prevention and reduction of mycotoxin contamination in spices’.
5. The work plan of the EWG in this regard has been:
- a. To compile and discuss the information received in response to the CL 2016/21-CF.
 - b. If appropriate, to develop proposals for Annexes for consideration by the Committee.
6. The EWG came to the following conclusions:
- Only two replies were received to the CL 2016/21-CF, but no comments were made on specific management practices for the prevention and reduction of mycotoxin contamination in spices. Therefore, it was not possible to develop proposals for Annexes to the COP on mycotoxins in spices.
 - All the EWG participants, except for one, agreed to stop working on the annexes to the general COP because the information available up to date seems not to be sufficient.

RECOMMENDATIONS

7. The EWG makes the following recommendations to CCCF:

- There are no grounds for developing specific Annexes to the general provisions (body) of the COP as there is no new information on specific management practices for the prevention and reduction of mycotoxin contamination in spices.
- The EWG therefore proposes the Committee to stop working on the annexes at this stage until more information on specific management practices becomes available.

⁶ Comments and information submitted in reply to CL 2016/21-CF are available upon request from the Codex Secretariat.

**APPENDIX III:
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