

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



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 ANNEX ON THE PREVENTION AND REDUCTION OF ERGOT AND ERGOT ALKALOIDS CONTAMINATION IN CEREAL GRAINS (FOR INCLUSION IN THE CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN CONTAMINATION IN CEREALS (CAC/RCP 51-2003))**

DEADLINE 20 March 2017

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BACKGROUND

1. The 10th Session of the Codex Committee on Contaminants in Foods (CCCF) (April 2016) agreed to establish an electronic working group (eWG) chaired by Germany and co-chaired by the United Kingdom to develop a new Annex 6 for the prevention and reduction of contamination by ergot and ergot alkaloids in cereal grains for inclusion in the *Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals (CAC/RCP 51-2003)* (COP).
2. Based on the Discussion Paper presented at CCCF10¹, comments submitted at the session and in reply CL 2016/10-CF (Part II), the eWG worked on a draft Annex for the prevention and reduction of contamination by ergot and ergot alkaloids in cereal grains. In addition, comments provided by members of the eWG during two round of comments were also considered in the drafting of the Annex.²
3. Provisions in the Annex are specific to the prevention and reduction of contamination of cereal grains with ergots and ergot alkaloids. These provisions supplement common provisions to contain mycotoxin contamination in cereals in the Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals Grains.
4. The proposed draft Annex on the prevention and reduction of ergot and ergot alkaloids contamination in cereal grains as revised by the eWG is presented in Appendix I. References to the Code of Practice refer to the "General Code of Practice". The Annex should be read in conjunction with the Code of Practice for the Prevention and Reduction of Mycotoxin Contamination in Cereals Grains³.
5. The List of Participants is presented in Appendix II.

REQUEST FOR COMMENTS

6. Codex members and observers are kindly invited to provide comments on the proposed draft Annex on the prevention and reduction of ergot and ergot alkaloids contamination in cereal grains (Appendix I).

¹ CX/CF 16/10/13

² REP15/CF, para. 103; REP16/CF, paras. 138-142 (Appendix V)

³ The COP is available on the Codex website: <http://www.fao.org/fao-who-codexalimentarius/standards/en/>

APPENDIX I**ANNEX 6 TO THE CODE OF PRACTICE FOR THE PREVENTION AND REDUCTION OF MYCOTOXIN CONTAMINATION IN CEREALS (CAC/RCP 51-2003)****PREVENTION AND REDUCTION OF CONTAMINATION BY ERGOT AND ERGOT ALKALOIDS IN CEREAL GRAINS****RECOMMENDED PRACTICES BASED ON GOOD AGRICULTURAL PRACTICES (GAP) AND GOOD MANUFACTURING PRACTICES (GMP)**

1. The recommended practices are in principle relevant for all cereals but in particular applicable to the crops most sensitive to ergot sclerotia contamination, such as rye, triticale, sorghum and pearl millet. The increased prevalence of ergot sclerotia in wheat may also be an emerging issue in some countries.
2. Good Agricultural Practices include methods to reduce *Claviceps* (mainly *C. purpurea*) infection and ergot alkaloids contamination of cereals during crop growth and development, harvest, storage, transport and processing. Besides the *Claviceps* species, other sources of ergot alkaloids are *Aspergillus fumigatus* and certain *Acremonium* and *Penicillium* species. These sources are not considered in this Code of Practice.

Planting and crop rotation

3. Refer to paragraph 11 in the general Code of Practice.

Tillage and preparing for seeding (Planting)

4. Refer to paragraphs 12-16 in the general Code of Practice.
5. Early and simultaneous flowering of the crop is the best way to counteract *Claviceps* infection. The following recommendations help to prevent *Claviceps* infection of cereals:
 - a. Ensure good establishment with optimum plant populations, applications of fertiliser and plant growth regulators and good drainage.
 - b. Ensure good control of grass weeds (especially those that are hosts to *Claviceps*) within a field. Particular attention should be paid to grass weed populations on the headlands of a field. Both cultural and chemical methods should be used.
 - c. The laying of sufficiently wide tramlines for agricultural vehicles to avoid the green shoots that increase the risk of infection, may be considered.
6. Where the preceding cereal crop had been infected with ergot disease (or where there is a substantial grass weed population that was infected with ergot disease):
 - a. The cultivation of the subsequent cereal crop should be by inversion ploughing.
 - b. Ploughing should not then be used in the subsequent cereal crop as this may return sclerotia to the land surface.
 - c. Where minimal cultivations are used, the seed depth should be at least 5 cm (0.16 ft).
 - d. Alternatively, the field should be kept free from cereal production in the second year.
 - e. Where low and zero tillage crop rotation practices are normally followed, other mitigation measures take on greater importance.

Pre-harvest

7. Refer to paragraphs 17-23 in the general Code of Practice.
8. Consider a partial harvesting of the crop as an option. Field/subsections with a high incidence of ergot, may be threshed separately, while ensuring the safety of humans and animals. More sclerotia can be found near a field margin (greater than 1 m) in comparison with zones deeper in the field (at least 30 m from field margin). Separate harvesting of field borders (3-4 m zone) could significantly decrease ergot sclerotia in the yield.

Harvest

9. Refer to paragraphs 24-27 in the general Code of Practice.
10. Air-stream cleaning should be used, as far as possible, to remove ergot sclerotia and dust.

Drying and cleaning before storage

11. Refer to paragraphs 28-33 in the general Code of Practice.

12. It is important that ergot sclerotia and dust particles are eliminated at each stage of the food processing chain to prevent carryover to the next stage of processing.

Storage after drying and cleaning

13. Refer to paragraphs 34-43 in the general Code of Practice.

Transport from storage

14. Refer to paragraphs 44-46 in the general Code of Practice.

Processing and cleaning after storage

15. Refer to paragraphs 47-54 in the general Code of Practice.
16. Colour sorting based on the clear-cut distinction between the colour of ergot sclerotia and that of cereal grain should be considered, since this is an efficient method to remove sclerotia. Other recommended separation techniques, such as weigh selectors, gravity tables or indented cylinder separators (trieurs) may also be used.
17. Following the use of the above-mentioned separation techniques, other processes that support the cleaning of the cereal (scrubbing, brushing, peeling and scouring) should be considered in order to remove the ergot dust on the surface.
18. Ensure that any dust is removed well before the milling process including, the option of removing and replacing the flour filter in the crusher area of the mill unit.
19. All waste material should be disposed of in a manner to prevent re-entry into the food or feed supply chain.

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