

CODEX COMMITTEE ON CONTAMINANTS IN FOOD

15th Session

Agenda item 6:

Code of practice for the prevention and reduction of cadmium contamination in cocoa beans

(CX/CF 22/15/6 and CL 2022/15-CF)

Mixed Competence
Member States Vote

The European Union and its Member States (EUMS) welcome the work on the development of a Code of practice for the prevention and reduction of cadmium contamination in cocoa beans by the electronic Working Group chaired by Peru and co-chaired by Ghana and Ecuador.

The EUMS support the development of the Code of Practice because sufficient information on mitigation measures is available for field production and post-harvest processes.

The EUMS would like to suggest the following amendments to the document:

- In paragraph 11 a wide range of soil parameters is listed, which need to be determined before the establishment of a new plantation. It is proposed to focus in the Code of Practice only on those parameters, which are relevant for cadmium contamination.
- Paragraph 14: In a previous version of the document it was indicated that the soil cadmium should not exceed 0.4 mg Cd/kg soil if the soil pH=5 in order for the mean Cd concentration in cocoa beans not to exceed 1 mg/kg Cd. If the soil pH = 7, the Cd concentration in the soil should not exceed 1.0 mg/kg. In the current version it is stated that ‘when the soil pH = 7, the cadmium concentration in the soil could be higher 1.0 mg Cd/kg soil’. This should be modified to ‘when the soil pH = 7, the cadmium concentration in the soil should not be higher than 1.0 mg Cd/kg soil’. Furthermore the EU enquires why the statement that ‘the soil cadmium should not exceed 0.4 mg Cd/kg soil if the soil pH=5’ was removed?
- Paragraph 17: As it is concluded in paragraph 16 that agroforestry, compared to monoculture does not significantly change the cadmium concentration in cocoa beans, paragraph 17 with further recommendations for agroforestry, should be deleted.
- Paragraph 32 states that it is vital to add phosphate fertilisers because tropical soils have a very limited native phosphorous content. Because also by using organic fertilisers the phosphorous content of the soil can be improved, while these fertilisers typically contain less cadmium and they show a high phosphorous bioavailability, it is proposed to rephrase the paragraph:

‘For a successful cocoa production it is vital to supplement the soil with phosphate, because tropical soils have a very limited natural phosphate content. This can be best done via the use of organic fertilisers, which have a high phosphorous bioavailability and a low cadmium content. As phosphate fertilisers or sedimentary phosphorous rock may contain high cadmium concentrations, they should only be used when they have a demonstrated low cadmium content and they should in any case comply with cadmium limits established by national or regional competent authorities.’

- Paragraph 37 indicates that biochar reduces the bioavailability of cadmium in cocoa beans. It is proposed to rephrase to ‘Biochar has been shown to reduce the uptake of cadmium by cocoa beans’.
- Paragraph 47: it is proposed to explain why a longer fermentation time reduces the cadmium in the edible part of the cocoa beans. Therefore it is proposed to replace ‘A longer fermentation time than normal also may result in less Cd, based on research studies, but an optimal fermentation time for Cd is not known’ by:

The process of fermentation of cocoa beans may be useful to reduce the levels of Cd of the edible part of the cocoa beans. Cd can be redistributed from the nib (edible part) to the testa (inedible part). The Cd concentrations in the nibs can be reduced by a factor of 1.3 if the pH is sufficiently acidified during fermentation. In an experiment the migration of Cd from the nibs to the testa was only observed if the nib pH dropped below 5. This acidic pH resulted from longer fermentation times. Pre-drying and short fermentation times may reduce the extent of outward Cd migration.

Further information can be found in the reference to Vanderschueren *et al.* (2020).

- Paragraph 49: it is proposed to explain why *Saccharomyces cerevisiae* reduces the cadmium concentration in cocoa beans. Therefore it is proposed to rephrase as follows:

Saccharomyces cerevisiae is a yeast strain, which absorbs Cd during cocoa fermentation. Therefore increasing the concentration of Saccharomyces cerevisiae during the fermentation process can help to reduce the cadmium content in the beans.

The EUMS consider that, when taking into account the re-drafting suggestions, the Code of Practice could be adopted at step 8 by CAC45.