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Copper content in Chinese chocolate standard

Some of the members of the Belgian Chocolate Association exporting to China inform us that imports of dark chocolate are obstructed due to nonconformity with the current Chinese copper limit for chocolate.

The Chinese Hygienic Standard for Chocolate (GB 9678.2-1994 and as replaced by GB 9678.22003) defines a maximum copper limit of 15 mg/kg in chocolate. This maximum level was taken over from the Codex Standard for chocolate and chocolate products (CODEX STAN 87-1981).

The Codex Committee on Cocoa Products and Chocolate (CCCPC) proposed in 1998 to remove the maximum limit for copper in cocoa and chocolate products to remove this limit in 1999 based on the following :

"27. The Committee decided to delete the maximum levels for copper and iron as it was agreed that they were not of health concerns. It also decided to delete the maximum level for arsenic as the use of lead arsenate on cocoa plants had been banned for years. This decision is applicable to all standards covered under this Agenda Item."

(See <http://www.fao.org/docrep/meeting/005/X0817E/x0817e07.htm>).

This was accepted at the 23rd Session of the Codex Alimentarius Commission (Rome, 28 June - 3 July 1999) and resulted in the Codex Standard for chocolate and chocolate products (CODEX STAN 87-1981, Rev. 1 - **2003**). This standard does no longer define a maximum limit for copper in cocoa and chocolate products.

Furthermore, also the old CODEX limit for cocoa mass (30 ppm) as defined in CODEX STAN 141-198 was deleted based on the above decision.

It is clear from the old limit for cocoa mass that for chocolate high in cocoa mass and/or cocoa powder, the limit of 15 ppm is not achievable. Indeed, the copper content in cocoa mass is 25 à 30 ppm.

Beginning of 2008, the European Commission has set a maximum limit for copper of 50 ppm in cocoa beans without shell (cocoa nibs) in the framework of the pesticides Regulation (EU Regulation 395/2006). This limit also takes into account the natural presence of copper.

The Regulation defines that the maximum copper limit for chocolate is derived from the maximum limit for the cocoa nibs taking into account the processing factors. As copper is concentrated in the fat free cocoa solids a chocolate high in cocoa mass and/or cocoa powder will have a higher limit than a chocolate low in fat free cocoa solids. For example for a standard chocolate with 44% cocoa mass a maximum copper limit of 22 ppm applies.



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The problem of the copper content in chocolate, especially in dark chocolate with a high cocoa content, has been notified already in 2009 to the Chinese competent authorities at different occasions by the Belgian authorities as well during the bilateral meetings within the SPS committee in Geneva as in letters addressed at the Director of the National Institute of Nutrition and Food Safety (Department of Food Standards and Control Techniques).

During these interventions the Belgian authorities detailed the relation of the copper content in chocolate and cocoa, the actual EU standards which guarantee the absence of negative effects on human health .

The Belgian authorities invited China to review the current Cu limits for chocolate by referring to the levels of copper found in cocoa and taking into account the maximum % of cocoa on some chocolate (up to 90%).

We were informed already some years ago that the Chinese authorities decided to remove the maximum copper level from the Hygienic Standard for Chocolate but this modified legislation is still not published ...

Until the publication of the new Standard, the maximum copper limit is applied by the Chinese control authorities resulting in chocolate products with high cocoa content rejected at import into China.