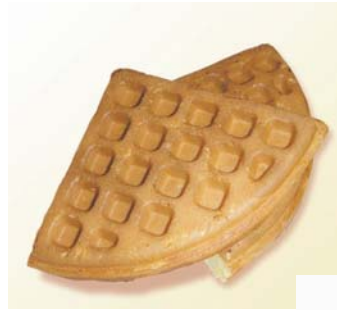


Implementation of Guidelines on the Use of Aluminium- containing Food Additives



Trade Consultation Forum Meeting

7.11.2012

Content

- **Regulatory control on aluminium-containing food additives**
- **Risk assessment study on aluminium in food**
- **Guidelines on the Use of Aluminium-containing Food Additives and relevant follow-up work**



Regulatory Control on Aluminium-containing Food Additives (1)

Safety reference value

- JECFA re-evaluated the safety of aluminium in 2006 and concluded to lower the provisional tolerable weekly intake (PTWI) from 7 mg/kg body weight (bw) to 1 mg/kg bw for aluminium from all sources
- JECFA further evaluated aluminium in 2011, and relaxed the PTWI for aluminium to 2mg/kg bw

JECFA: The Joint Food and Agriculture Organization / World Health Organization Expert Committee on Food Additives



Regulatory Control on Aluminium-containing Food Additives (2)

International arena

- Some aluminium-containing food additives are generally permitted to be used in food in many countries
 - e.g. US, EU, Australia, New Zealand, Japan and Mainland China
- Codex
 - Some aluminium-containing food additives have been included in the Codex General Standard for Food Additives (GSFA), and some are in the reviewing stage



Update on Codex Latest Development

- In response to the latest revision of PTWI for aluminium to 2 mg/kg bw by JECFA (2011), there was a need to review the provisions for aluminium-containing food additives in the GSFA to ensure that their maximum use levels are compatible with the PTWI
- **Codex Committee on Food Additives**
 - Only numerical maximum levels (MLs) (expressed as aluminium basis) should be set for aluminium-containing food additives
 - Revoked provisions and discontinued work on draft provisions for some aluminium-containing food additives



Regulatory Control on Aluminium-containing Food Additives (3)

Situation in HK

- Public Health and Municipal Services Ordinance
 - All food for sale in HK must be fit for human consumption
- No specific standards have been set for the use and use level of aluminium-containing food additives



Regulatory Control on Aluminium-containing Food Additives (4)

Situation in HK

- **Food and Drugs (Composition and Labelling) Regulations**
 - If a prepackaged food contains a food additive including aluminium-containing food additive, such additive should be specified on the label accurately in the prescribed manner stipulated in the Regulations
 - List out the specific name or INS number, and functional class of the food additives being used



Risk Assessment Study on Aluminium in Food (1)

- CFS released the report of a RA study on Aluminium in Food in May 2009
- **Summary of study findings**
 - Aluminium-containing food additives are widely used in the production of steamed bread/bun/cake, some bakery products and jellyfish
 - The average dietary exposure to aluminium of a 60-kg adult was estimated to be 0.60 mg/kg bw/week



Aluminium in Food (2)

| Food groups | No. of samples taken | Mean aluminium level (mg/kg) [range] |
|----------------------------------|----------------------|--------------------------------------|
| <u>(i) Bakery product</u> | 97 | |
| ♦Bread /roll | 15 | 5 [1 – 28] |
| ♦Tart other than coconut tart | 16 | 12 [1 – 87] |
| ♦Cookies/biscuits | 15 | 16 [1 – 88] |
| ♦Chinese pastry | 10 | 33 [1 – 180] |
| ♦Doughnut | 5 | 59 [1 – 160] |
| ♦Cake | 15 | 91 [1 – 220] |
| ♦Coconut Tart | 6 | 120 [65 – 180] |
| ♦Pancake / Waffle | 10 | 160 [1 – 710] |
| ♦Muffin | 5 | 250 [6 – 510] |



Aluminium in Food (3)

| Food groups | No. of samples taken | Mean aluminium level (mg/kg) [range] |
|--|----------------------|--------------------------------------|
| <u>(ii) Steamed bread/bun/cake</u> | 61 | |
| ♦ Steamed bread (without filling) | 14 | 100 [3 – 230] |
| ♦ Steamed bun (with filling) | 36 | 130 [4 – 270] |
| ♦ Steamed cake | 11 | 320 [200 – 570] |
| <u>(iii) Jellyfish (ready-to-eat form)</u> | 15 | 1200 [400 – 1800] |
| <u>(iv) Snack including fried snack product</u> | 30 | |
| ♦ Leavening products | 15 | 20 [1 – 110] |
| ♦ Deep fried dough | 15 | 46 [2 – 330] |



Risk Assessment Study on Aluminium in Food (4)

Conclusion

- Unlikely to cause adverse health effect of aluminium for the general population
- Cannot rule out adverse health effect of aluminium for some population who regularly consume foods added with aluminium-containing food additive such as steamed bread/bun/cake, bakery products and jellyfish
- Efforts should be made to reduce exposure to aluminium to protect public health



Follow-up Work (1)

Working with the Trade to reduce exposure to aluminium for the public

- A Working Group has been set up
 - To establish Guidelines for Traders' reference
 - Comprising representatives from the Trade and Academia
- Collect Traders' feedback on the draft Trade Guidelines via Trade Consultation Forum and CFS website
- Issued Trade Guidelines in June 2009



Guidelines on the Use of Aluminium- containing Food Additives



Released in June 2009

Guidelines on the Use of Aluminium-containing Food Additives (1)

*Applicable to all manufacturers and producers
(including restaurants and bakeries)*

Basic Principles

Principle 1:

- The use of aluminium-containing food additives should be **reduced or replaced with other alternatives** in preparing food as far as possible



Guidelines on the Use of Aluminium-containing Food Additives (2)

Basic Principles

Principle 2:

- **Alternative techniques** for food processing should be developed to reduce the use of aluminium-containing food additives



More Information

- Risk Assessment Study on Aluminium in Food
 - http://www.cfs.gov.hk/english/programme/programme_rafs/programme_rafs_fa_01_06.html
- Guidelines on the Use of Aluminium-containing Food Additives
 - http://www.cfs.gov.hk/english/programme/programme_rafs/files/Guidelines_on_the_use_of_Al_additives_e.pdf
- Codex General Standard for Food Additives (GSFA)
 - <http://www.codexalimentarius.org/standards/gsfa-online-food-additives/en/>



Thank you



Regulatory Control on Food Additives

- **In HK, use of food additives is subject to**
 - **Public Health and Municipal Services Ordinance (Cap. 132)**
 - All food for sale in HK must be fit for human consumption
 - **Relevant subsidiary legislation**
 - Colouring Matter in Food Regulations (Cap.132H)
 - Sweeteners in Food Regulations (Cap.132U)
 - Preservatives in Food Regulation (Cap.132BD)
 - Food and Drugs (Composition and Labelling) Regulations (Cap.132W)



Regulatory Control on Food Additives

- **Colouring Matter in Food Regulations**
 - Aluminium salts (lakes) of any of the permitted water-soluble colours
 - Aluminium in leaf or powder form solely for external colouring of dragees and decoration of sugar-coated flour confectionery



Aluminium-containing Food Additives (1)

- Have been used in food processing for over a century
- **Baking powder** is commonly used as a raising agent in the production of bakery products
 - Formation of gas from chemical reaction, making the products fluffy
 - The rate of gas formation is faster than yeast fermentation
 - Due to the use of aluminium-containing food additives, the finished products are expected to contain relatively high levels of aluminium, and the residual levels are dependent on the use levels
 - Examples: steamed bun, steamed bread, “Mai Lai” cake, cake, muffin, pancake



Typical Ingredients of Baking Powder

Alkaline

e.g. Sodium hydrogen carbonate (INS500(ii)), also known as baking soda

Acid

Fast acting

Slow acting

Filler

Aluminium-containing food additives
Aluminium sodium sulphate (INS521)
Sodium aluminium phosphate (acidic) (INS541(i))

Use levels range from 21%-26%



Aluminium-containing Food Additives (2)



- **Aluminium potassium sulphate(INS522)**
 - Also known as alum
 - Commonly used to produce salted jellyfish
- **Traditional processing of salted jellyfish**
 - Apply a mixture of salt and alum to fresh jellyfish to reduce the water content and firm its texture
 - A multi-phase processing procedure
 - Jellyfish dish is prepared from salted jellyfish by desalting and rehydrating in water
 - Extremely high level of aluminium is retained in the jellyfish dish



Advice to the Trade (1)

Product Development

- **Limit the application of aluminium-containing food additives in food products**
- **Limit the quantities of aluminium-containing food additives**
 - **To the lowest possible level necessary to accomplish its desired effect**
 - **Quantities added should present no appreciable health risk to consumers**



Advice to the Trade (2)

Product Development

- **Obtain information or specification of all ingredients from the suppliers about their components and check the components of each ingredient used carefully to see if they contain aluminium-containing food additives**
- **Consider to use other alternatives, as far as possible, to replace aluminium-containing food additives in preparing food**
- **Develop alternative techniques to reduce the use of aluminium-containing food additives, such as alum, during the production of salted jellyfish**



Advice to the Trade (3)

Food Production

- **Check the identity of ingredients added in accordance with the recipe**
- **Add the required amount of food additives accurately**

Food Labelling

- **Ensure to provide accurate information on prepackaged food label including specific food additives used**



Update on Codex Latest Development

- **GSFA (2012)**

<http://www.codexalimentarius.org/standards/gsfa/en/>

ALUMINIUM AMMONIUM SULFATE

INS 523 Aluminium ammonium sulfate Functional Class: Acidity regulator, Colour retention agent, Emulsifier, Humectant, Raising agent, Sequestrant, Stabilizer, Thickener

| FoodCatNo | FoodCategory | MaxLevel | Notes | Year Adopted |
|-----------|--|-----------|-------|--------------|
| 09.2.4 | Cooked and/or fried fish and fish products, including mollusks, crustaceans, and echinoderms | 200 mg/kg | 6 | 2001 |



Update on Codex Latest Development

- **GSFA (2012)**

<http://www.codexalimentarius.org/standards/gsfa/en/>

SODIUM ALUMINOSILICATE

INS 554 Sodium aluminosilicate Functional Class: Anticaking agent

| FoodCatNo | FoodCategory | MaxLevel | Notes | Year Adopted |
|-----------|--|-------------|-------|--------------|
| 01.8.2 | Dried whey and whey products, excluding whey cheeses | 10000 mg/kg | | 2008 |

