

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
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ORGANIZATION



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Agenda Item 16 E

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES AND CONTAMINANTS

Thirty-fifth Session

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COMMENTS SUBMITTED ON THE PROPOSED DRAFT MAXIMUM LEVELS FOR TIN IN RESPONSE TO CL 2002/10-FAC

The following comments have been received from Denmark, European Community:

DENMARK:

Tin is often used in cans as part of the alloy. Migration of metals can be reduced by the use of lacquered cans and possibly by other means. However, tin has also a desired function in preventing decolourisation of canned vegetables and fruits. Tin salts has been and used as direct additive in some countries. The technological function is in some cases desirable from the food producers point of view and can producers might aim for cans with a higher migration of tin. Such food contact materials are know as active packaging. The addition of tin to food would fall under the definition of direct food additives, and should in Codex be included in the GSFA. We find that high tin levels is caused by intentional addition via the packaging. This way of adding tin will in most cases not be labelled at the ingredients list.

Based on the above mentioned views, Denmark finds the proposed draft maximum levels for tin at step 3 of 200 mg/kg in liquid canned foods and 250 mg/kg in solid canned foods is too high.

The 55th meeting of JECFA maintained the PTWI of 14 mg/kg. JECFA reiterated the conclusion from 1989 that the limited human data available indicated that concentrations of 150 mg/kg in canned beverages and 250 mg/kg in other canned foods may produce acute manifestations of gastric irritation in certain individuals.

We question the need for limits at high at the proposed of 200 mg/kg in liquid canned foods and 250 mg/kg in solid canned foods.

In Denmark we have had regulation on tin since 1980'ties with the limits listed below:

	Maximum limit (mg/kg)	Guideline limit (mg/kg)
Children food	50	-
Beverages, incl. Fruit and vegetable juice	50	-
Foodstuffs in cans	150	-
Other foodstuffs	-	50

Denmark finds it of importance to recognise the fact that several canned products often will contain high amounts of tin, possible due to the mentioned intentional migration. However, taken the JECFA evaluation into considerations it makes these products unfit for human consumption. This problem could be solved by

- Using other techniques than canning techniques for these products. In Denmark asparagus are sold in glasses as well as in cans.
- Have a reduced shelf life for the products causing problems (1-1½ years instead of 2½ years for fruit, tomatoes, asparagus).
- Use lacquered cans and then add to the foodstuff an antioxidant which fulfils the specifications for food additives.

We enclose some Danish data on tin in canned food. The data originate from one of the major retail businesses in Denmark. The laboratory that performed the analysis is accredited to make tin analysis.

This particular retail business has made in-house control limits of tin at the time of import. They operate with a general limit of 100 mg/kg for canned foodstuff – but with a limit of 120 mg/kg for pineapple, and with a shelf life of 15 months.

For pineapple they have given data for 247 lots of which they have analysed 5 cans from each lot – in total 1235 samples – since January 1998.

In 1998-99 they rejected 18 lots of pineapple containing more than 120 mg/kg. However, there have not been problems before or after. The explanation they were given was that a hurricane caused an increased content of nitrate. The company have not been able to find a relation between the content of nitrate and tin. They find a relation between the content of tin and the quality of the can. Since 1999 they have not rejected any lots of pineapple.

1. Danish data from 2000 and 2001:

Product	Country of origin	Number of samples	% < 20 mg/kg	% < 50 mg/kg	% < 100 mg/kg	% < 150 mg/kg	% < 200 mg/kg	% > 250 mg/kg
Peach	Greece	2			100			
Mandarin	Spain	1		100				
Pear	Australia	1		100				
Apricot**	South Africa	7	0	?	100			
Pineapple*	Thailand, Indonesia, Kenya, China	248	1	46	93	99	100	
Fruit cocktail**	South Africa	15	0	?	100			
Tropical fruit cocktail**	Indonesia	5	0		100			
Asparagus	China	9	100					
Bamboo shoot	Thailand	4	100					
Beans in sauce	UK and Italy	16	100					
Sprouts	Thailand	12	0	?	42	92	100	
Sprouts**	Thailand	10	10	?	80	90	100	
Corn of maize	USA	8	100					
Mini-maize	Thailand	3		?	100			
Oriental vegetables	Thailand	2	100					
Artichoke bottom		8		?	100			
Tomatoes in <u>un-lacquered</u> ** cans	Italy	64	34	?	92	98	100	
Tomatoes in lacquered cans	Italy	15	100					

*Each sample represents the average of 5 individual samples from the same lot.

** Each sample represents a pooled sample of 5 cans from the same lot

EUROPEAN COMMUNITY:

The European Community submitted comments on this item for the 34th CCFAC, although they were not taken into account. Therefore the comments are reiterated at this time. More specific comments on limit values are likely to follow in advance of the 35th CCFAC meeting.

The European Community has examined the proposed maximum levels for tin in foodstuffs and agrees that maximum levels should be set. JECFA (June 2000) concluded that tin can cause gastric irritation in some individuals when present in beverages at 150 mg/kg and when present in other canned foods at 250 mg/kg. The EU Scientific Committee on Food (December 2001) concurred with this view.

The European Community wishes to assess all available information on levels of tin in foods before concluding on the most appropriate maximum levels. However, at this time it has been possible to conclude on the following points to ensure the safety of consumers:

1. The proposed maximum level of 250 mg/kg in solid canned foods is too high; a separate maximum level of 200 mg/kg in canned liquid foods/ beverages would be too high.
2. If separate maximum levels are set for liquid and solid foods, the categories should be 'canned beverages' and 'canned foods other than beverages'. The proposal to list 'liquid canned foods' is too vague. Confusion could arise, for example for relevant foods such as fruits canned in juice.
3. Maximum levels should be set in line with the scientific advice, to protect the safety of consumers and in particular those individuals who may be sensitive to tin.
4. A separate maximum level might be necessary for tin in canned foods for infants.