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Investigate, evaluate, protect

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37th FP meeting, 3-4 October 2018, Bratislava

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Situation in France regarding bitter apricot kernel poisoning

Published June 2018

https://www.anses.fr/en/content/apricot-kernels-pose-risk-cyanide-poisoning

Background and subject of the mandate

Background

- Bitter apricot kernels have been on the market with claims of "*anti-cancer*" properties.
- Cases of bitter **apricot kernel poisoning** have been reported across Europe in recent years, leading to a **warning** being issued by the European Food Safety Authority (**EFSA**)
- Kernels contain amygdalin, a cyanogenic glycoside, which releases highly toxic hydrocyanic acid (**cyanide**) during digestion.
- Symptoms cyanide poisoning:
  - **Low doses**: fever, headache, nausea, insomnia, lethargy, joint and muscle pain, and a drop in blood pressure.
  - **High doses**: convulsions, respiratory problems, decreased heart rate, loss of consciousness and even coma.

ANSES Self-task

To better understand the situation in France regarding bitter apricot kernel poisoning, the French Poison Control Centres (CAPs) and ANSES examined the cases reported to the CAP network.

Methodology of expertise

Consultation of the French poison control centres (CAPs) & the national Toxicovigilance network

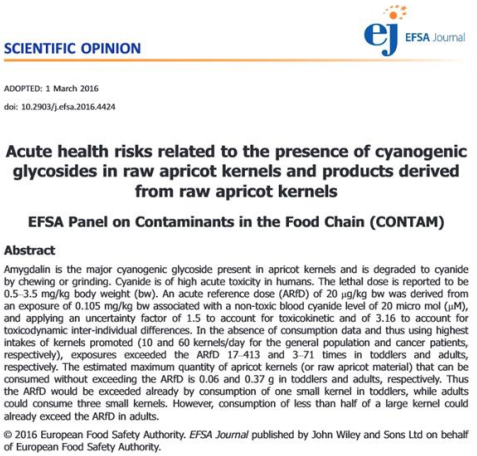
Exposure cases were extracted from the CAP National Database of Poisoning Cases (BNCI) between 1 January 2012 and 11 October 2017.

→ Symptomatic cases were defined as relating to individuals who experienced one or more symptoms within 12 hours of when they last ingested kernels.

→ Asymptomatic cases were also included to document ingested doses that did not result in any clinical signs.

Acute exposure case: as resulting from a single dose

To analyse cases according to the amount of cyanide ingested, the maximum amount of cyanide per kernel was estimated at 3.8 mg/g of apricot kernel (EFSA Panel on Contaminants in the Food Chain, 2016. Scientific opinion)



SCIENTIFIC OPINION

EFSA Journal

ADOPTED: 1 March 2016

doi: 10.2903/j.efsa.2016.4424

Acute health risks related to the presence of cyanogenic glycosides in raw apricot kernels and products derived from raw apricot kernels

EFSA Panel on Contaminants in the Food Chain (CONTAM)

Abstract

Amygdalin is the major cyanogenic glycoside present in apricot kernels and is degraded to cyanide by chewing or grinding. Cyanide is of high acute toxicity in humans. The lethal dose is reported to be 0.5–3.5 mg/kg body weight (bw). An acute reference dose (ARfD) of 20 μg/kg bw was derived from an exposure of 0.105 mg/kg bw associated with a non-toxic blood cyanide level of 20 micro mol (μM), and applying an uncertainty factor of 1.5 to account for toxicokinetic and of 3.16 to account for toxicodynamic inter-individual differences. In the absence of consumption data and thus using highest intakes of kernels promoted (10 and 60 kernels/day for the general population and cancer patients, respectively), exposures exceeded the ARfD 17–413 and 3–71 times in toddlers and adults, respectively. The estimated maximum quantity of apricot kernels (or raw apricot material) that can be consumed without exceeding the ARfD is 0.06 and 0.37 g in toddlers and adults, respectively. Thus the ARfD would be exceeded already by consumption of one small kernel in toddlers, while adults could consume three small kernels. However, consumption of less than half of a large kernel could already exceed the ARfD in adults.

Keywords: cyanogenic glycosides, cyanide, apricot kernels, acute reference dose

Requestor: European Commission

Question number: EF

Correspondence: cont

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ANSES Results & Conclusions

Results

Among the cases of acute exposure n=61, Table 1 shows the number of apricot kernels consumed according to the clinical situation

		Asymptomatic cases (n=40)	Symptomatic cases (n=21)	p
Number of apricot kernels consumed	Min	1.0	3.0	
	Max	50.0	90.0	
	Median	4.5	20.0	
	Average	9.8	27.2	<0.01

Table 2 shows the cumulative percentage of symptomatic cases according to the number of apricot kernels consumed at one time.

Number of kernels consumed (Estimated cyanide equivalent)**	Cumulative % of symptomatic cases
<5 (<9.5 mg)	5%
<10 (<19 mg)	12%
<20 (<38 mg)	19%
<30 (<57 mg)	26%
<50 (<95 mg)	30%
≥50 (≥95 mg)	80%

Conclusions

Given the lack of a scientific basis on the use of kernels from apricots in the preventive or curative treatment of cancer and the serious cases reported it seems necessary to encourage consumers to exercise caution.

EFSA's recommendations guarantee the absence of health risks with a sufficient safety margin.

one to three kernel per day for adults and half a small kernel a day for young children.

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For more information: https://www.anses.fr/en/system/files/VigilansesN5_AmandesEN.pdf **and** https://www.efsa.europa.eu/fr/press/news/160427

ANSES opinion on the risk of an excess iodine intake linked to the consumption of seaweed in foodstuffs

Published 25 June 2018

https://www.anses.fr/en/content/seaweed-consumption-remain-vigilant-risk-excess-iodine-intake

Background and ANSES mandate

Context

- Seaweed-based products are increasingly being offered to consumers
- Fresh, dried or as a food supplement, its iodine content varies and can sometimes be high

ANSES self-mandate

- 28 April 2017
- On risk of excess iodine intake associated with the consumption of seaweed in foods and food supplements. Its expert appraisal focused on iodine-containing seaweed likely to be consumed in France.

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Methodology of expertise

Nutrivigilance reports

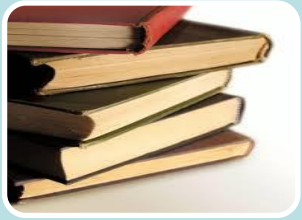

efsa
European Food Safety Authority
Advisory Forum & Scientific Cooperation Unit
FOCAL POINT NETWORK
REQUEST FOR EXCHANGE OF INFORMATION[1]
PART I - REQUEST

Contact with European & International counterparts

- Multilateral request to the **Focal points** (Oct. 2016)
- ->14 answers

Consultation

- Reports of four experts from the Plants WG and
- Hearing of a professor of endocrinology, specialist of the thyroid.



Literature review

ANSES conclusions

- **Iodine levels** in seaweed-based products can vary according to:
  - the conditions under which the seaweed is produced;
  - the method used to process the ingredient or food;
  - the type of seaweed-based preparation (powder, extract) used in food supplements.

- **ANSES's assessment** based on the tolerable upper intake level for iodine established by the EFSA at 600 µg per day for adults and adjusted for each age group of consumers

- **Iodine content** in the various seaweed-based products can be high, their consumption presents a non-negligible risk of exceeding the upper intake levels, particularly if the seaweed is consumed in combination with seaweed-based food supplements.

- **Regular excessive intake of iodine** can cause thyroid dysfunctions as well as certain adverse effects, particularly cardiac or renal effects.

ANSES recommendations

ANSES advises against the consumption of food and food supplements containing seaweed by the following at-risk groups:

- people with thyroid dysfunction, heart disease or kidney failure;
- people taking medication containing iodine or lithium;
- pregnant or breastfeeding women, without seeking medical advice

Pending these data, ANSES recommends:

- Parents should exercise caution regarding their children's consumption of seaweed-based products, as there are insufficient data for measuring the risk involved.
- People with an iodine deficiency are reminded that they should not consume products containing seaweed to correct this deficiency.
- In general, ANSES recommends that consumers choose supply channels regulated by the authorities for all seaweed-based foods and food supplements.

For more information: https://www.anses.fr/en/content/seaweed-consumption-remain-vigilant-risk-excess-iodine-intake

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ANSES 2017 annual report:

For more information:
https://www.anses.fr/en/content/2017-anses-annual-report-now-available

Follow up FP-Meeting Oslo

ANSES opinion on the health risk related to the consumption of game with regard to environmental chemical contaminants

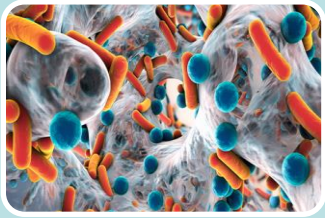
https://www.anses.fr/en/content/consumption-wild-game-action-needed-reduce-exposure-chemical-contaminants-and-lead

(Opinion report in French)

ANSES opinion on the risks associated with the consumption of food supplements containing melatonin

https://www.anses.fr/en/system/files/NUT2016SA0209EN.pdf

(Opinion report in English)



ANSES opinion on alternatives to antibiotics in food producing animals

https://www.anses.fr/en/content/anses-assesses-efficacy-and-safety-alternatives-antibiotics-animal-husbandry-and-considers

(Opinion report in French, English version coming soon)

ANSES opinion on "Animal welfare: context, definition and assessment"

https://www.anses.fr/en/content/anses-proposes-definition-animal-welfare-and-sets-foundation-its-research-and-expert

(Opinion report in French, English version coming soon)