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EU FOOD FRAUD NETWORK COORDINATED CASE

Adulteration of
beeswax intended
for honey
production with
stearin and paraffin





European
Commission

Beeswax on the EU market

FOOD GRADE

Beeswax - **natural wax** obtained by melting the walls of the honeycomb made by the honey bee.

Reg. (EU) 231/2012



Natural beeswax is limited and expensive – bees produce only 1 kg of wax for each 8 kg of honey.

European production of beeswax is not sufficient to cover demand.

During the processing stage paraffin or stearin is added to natural beeswax.

Best wax quality relies on the absence of synthetic chemicals, but the lack of obligatory legal regulations makes adulteration quite frequent.

The marketing and advertising of beeswax ***without indicating*** that it contains stearin and paraffin can be found to be ***misleading*** and thus ***illegal***.**

When determining whether advertising is misleading, account shall be taken of the ***characteristics of the goods, amongst others their nature, composition, fitness for purpose, ..., or the results expected from their use***.****

ABP cat.3***

Imported beeswax and its products must be processed; apiculture by-products are **not intended for human consumption**.

Reg. (EC) 1069/2009



*Reg. (EU) 231/2012, laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council.

**Directive 2006/114/EC concerning misleading and comparative advertising prohibits traders to conduct misleading advertising vis-à-vis other traders (B2B)

***Reg. (EU) No 142/2011, implementing Regulation (EC) No 1069/2009 of the European Parliament and of the Council laying down health rules as regards animal by-products and derived products not intended for human consumption. Annex XIV, Table 2.
****Art. 3 Directive 2006/114/EC



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Food Fraud Criteria

1. Violation of EU Food Law

- Violation of Directive 2006/114/EC concerning misleading and comparative advertising prohibiting traders to conduct misleading advertising vis-à-vis other traders (B2B)
- ABP category 2, but imported as category 3
- Processed beeswax in the food chain (additive, food supplements, honeycomb)

2. Intention

- Addition of **stearin** and **paraffin** to beeswax that is sold as cat.3 material but should be sold as cat.2 - Reg. (EC) 1069/2009 Art.9(d) -> products of animal origin which have been declared unfit for human consumption due to the **presence of foreign bodies** in those products

3. Economic gain

- Retail price of beeswax is 13€/kg vs paraffin (candlewax) 6€/kg
- Economic gain on 1 tonne of 30% adulterated beeswax equals 2100€

4. Deception of costumers

- Customers believe they are using an authorised and safe product
- **Public health issue:** beeswax containing paraffin in food chain
- **Animal health issue:** negative issues on brood development – significant mortality of bees

Adulterated Beeswax Economic Gain

Average price of paraffin/stearin: 6 € per kg

Average price of beeswax: 13 € per kg



Ukrainian batch of 7 010kg (sampled on 14.02.2017)

**52% of paraffin – economic gain = 25 516 Euros
(3,64 € per kg)**

Chinese batch of 20 000kg (sampled on 12.02.2016)

**5,5% of paraffin – economic gain = 7 700 Euros
(0,39 € per kg)**

Chinese batch of 20 000kg (sampled on 10.11.2016)

**12,2% of stearin – economic gain = 17 080 Euros
(0,85 € per kg)**

Public health: risk related to the use of adulterated beeswax in the food chain



Companies are offering more often honeycomb instead of honey in jar to demonstrate the **authenticity** of the product.

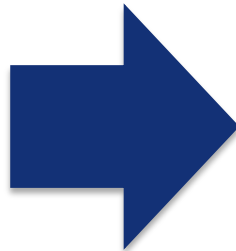
Contaminated wax sheets in those cases are **integrated in the comb** and can be potentially eaten by the consumers as indicated on the products label.



A risk assessment should be carried out in order to evaluate the **impact on human health** in this eventuality.

Animal health: potential effects of stearic and palmitic acid (stearin) on bees

Beeswax sheets



Paraffin



Stearin

- Since 2016 Belgian beekeepers have reported the particular problems of brood development within their hives (“mosaic brood”)
- There is some fragmented data linking the use of adulterated beeswax to those negative effects
- Other countries seem to have similar experiences (apparently NL, DE, FR, ES, PL)
- Lack of sufficient data to demonstrate the problem

Public health issues

- *Paraffin issue: adulteration plus potential safety issue depending on the chemical nature of paraffin used (EFSA Scientific Opinion on Mineral Oil Hydrocarbons in Food)*
- *Contamination issue if 'dirty' paraffin was used*

Animal health

- *Paraffin mixed with natural beeswax is an accepted practise among beekeepers*
- *Maximum up to 10%*
- *BE field trail: addition of 15% of stearin to beeswax results in significant mortality of the worker bee brood*



Next steps

- *Size of the problem*
- *Highlighting the problem to MS*
- *Data collection*
- *Raising awareness of stakeholders*
- *EFSA consultation*