

Labeling of food insect products in the European Union

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Introduction

The only regulation regarding edible insects is Regulation (EU) 2015/2283 (Novel-Food-Regulation), which has been fully applicable since 1st January 2018 and contains rules on the placing on the market of food insect products in the European Union.

There are currently no other specific regulations for food insect products - for example with regard to labeling. Only the general requirements set out in Regulation (EU) 1169/2011 concerning the provision of food information to consumers are applicable on food insect products. In order to facilitate the handling of edible insects, some countries of the European Union have published guidelines on this topic, which contain additional recommended labeling elements based on risk assessments.

Recommended labeling information

In Germany, the labeling is based on the indications given in the Austrian guideline for cultivated insects as food [1].

Therefore the following additional information are recommended:

- **Common and scientific name**
- **Allergen warning**
- **Indication „cultivated“**
- **Instructions for use**

For example:

- **Our ingredients:** 45% rehydrated **buffalo worm soy protein** (60% **buffalo worms *Alphitobius diaperinus***), 40% **soy protein concentrate**, water, rape, oil, onions, **egg white** (dried), tomato paste (tomatoes, salt), **soy sauce** (water, **soy beans, wheat**, salt), **mustard** (water, **mustard seed**, vinegar, salt, sugar, spices), potato starch, spices, salt, lemon say, parsley
- **Allergen warning:** In the case of an allergy to crustaceans, molluscs or dust mites, there is also the possibility of an allergy to food insects. Product may contain traces of celery.
- Made from buffalo worms, **species-appropriate cultivated**, without the use of antibiotics
- **Attention!** Only consume fully cooked. Do not refreeze after defrosting.

Samples at the CVUA Freiburg

In 2019 (to date August 22th), 36 samples were analyzed at the CVUA Freiburg.

- Common and scientific names of the species were given on 36 samples (Fig.1, 1.) .

- Allergen warning, especially for food insects, could be found as well on 36 samples (Fig. 1, 2.).
 - On 29 products it was indicated, that insects may cause allergic reactions if there is a cross-reactivity to crustaceans, molluscs and/or dust mites (Fig. 2, a).
 - Two mentioned only molluscs (Fig. 2, b),
 - four crustaceans and molluscs (Fig. 2, c),
 - on another sample only crustaceans and dust mites are indicated as possible allergens (Fig. 2, c, d).
- Ten out of 36 products were also labeled as cultivated insects (Fig. 1, 3.).
- An instruction for use (consumed only fully cooked) was given on eight out of 36 products (Fig. 1, 4.).

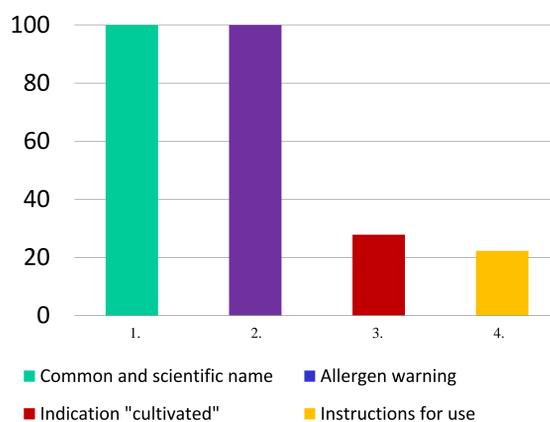


Fig. 1: Labeling information on samples at the CVUA Freiburg (in Percent)

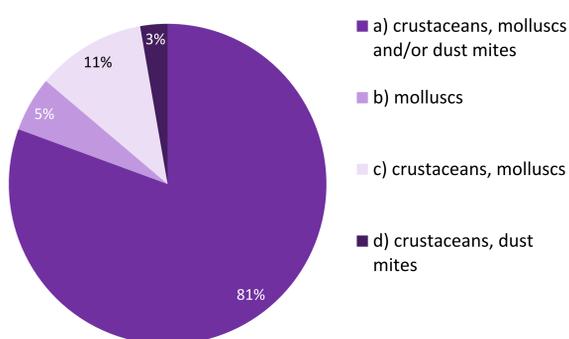


Fig. 2: Allergen warning on samples at the CVUA Freiburg

Incorrect labeling

Only one of the samples previously examined by the CVUA contained an incorrect German labeling (Fig. 3).

The common name “mealworms” (correct scientific name: *Tenebrio molitor*) is indicated together with the scientific name *Alphitobius diaperinus* (correct common name: “buffalo worms”).

Multiplex Real-Time PCR was used to determine that the insects used were indeed buffalo worms. The correct indication of the common and scientific name would therefore have been “buffalo worms (*Alphitobius diaperinus*)”.

According to Regulation (EU) No 1169/2011, Article 36 (2) (a), food information provided on a voluntarily basis must also comply with the requirement not to be misleading the consumer, as referred to in Article 7 of Regulation (EU) 1169/2011.

Article 7 (1) states, that “food information shall not be misleading, particularly:

- as to the characteristics of the food and, in particular, as to its [...] **identity** [...]”

The labeling of the product therefore did not comply with the requirements of Article 36 (2) (a) of Regulation (EU) No 1169/2011.



Fig. 3: Incorrect German labeling on a food insect product investigated at the CVUA Freiburg

Results and Discussion

So far, only the generally applicable labeling requirements according to Regulation (EU) 1169/2011 have been mandatory for the 36 food insect samples already evaluated at the CVUA Freiburg. Nevertheless, the proposals for additional, recommended labeling information according to the Austrian guideline for cultivated insects have been applied to a large number of samples.

The fact, that the allergenic potential of food insects poses a particular health hazard, was highlighted in a risk profile related to production and consumption of insects as food and feed published by the European Food Safety Authority (EFSA) in 2017.

According to this risk profile, insects contain - among other components - tropomyosin and arginine kinase, which may cause cross-reactions in persons with allergies to crustaceans, molluscs and/or dust mites [2].

A revision of Regulation (EU) 1169/2011 is so required to regulate the recommended labeling information by law and to ensure the food safety of food insect products.



References:

1. BMASGK (2017) Leitlinie für gezüchtete Insekten als Lebensmittel. BMGF-75210/0003-II/B/13/2017. URL: https://www.verbrauchergesundheits.gv.at/lebensmittel/buch/codex/beschluesse/Insekten_LL_1.pdf?6tn4aa Access: 22.08.19
2. EFSA Scientific Committee (2015) Risk profile related to production and consumption of insects as food and feed. EFSA Journal 2015. 13(10): 4257-4317

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