

Summary of the dossier: Whole and ground cricket (*Acheta domesticus*)

Applicant: Fair Insects BV (A Protix Company), Industriestraat 3, 5107 NC Dongen, Netherlands

This is an application for authorisation to place on the market whole and ground *Acheta domesticus* (commonly known as house cricket or cricket) as a novel food to be used in various food categories including cereal and cereal-like flours; bread and similar products; breakfast cereals; fine bakery wares; pasta, dough and similar products; spices, seasoning, sauces, condiments; fish and seafood processed; dishes, incl. ready to eat meals; food for particular diet; sausages; meat imitates; soups and salads; alcoholic beverages- beer and beer-like beverage, mixed alcoholic drinks, unsweetened spirits and liqueurs; confectionary including chocolates; processed or preserved vegetable and similar; vegetable and vegetable products; nut/seeds paste/emulsion/mass, cream cheese; snacks other than chips and similar; processed whole meat products.

The novel food is to be used in the following forms: whole (thermally processed; thermally processed and frozen; thermally processed, frozen and freeze dried) or a powder (thermally processed, frozen, freeze dried and ground).

The application falls under transitional period for insect products (that have currently been lawfully placed on the market) mentioned in the article 35.2 of Regulation (EU) 2015/2283. It has been compiled in line with the administrative and scientific requirements of Commission Implementing Regulation (EU) 2017/2469 for applications referred to in Article 10 of Regulation (EU) 2015/2283 of the European Parliament and of the Council on novel foods. It is also in line with the European Food Safety Authority (EFSA) guidance on the preparation and presentation of an application for authorisation of a Novel Food in the Context of Regulation (EU) 2015/2283.

The breeding and rearing of *A. domesticus* considered in this application take place in a closed environment where GMP+ certified feed is provided to insects (Substrate group A: Animal feed materials according to the EU catalogue of feed materials- Regulation (EU) No 68/2013). After harvesting, insects are processed in accordance with HACCP principles including quality control checks. The general food law principles, contaminants levels and microbiological parameters as laid down by Regulation (EC) No 178/2002, Regulation (EC) No 1881/2006 and Regulation (EC) 2073/2005 (updated by Regulation (EC) 1441/2007), respectively are followed.

*A. domesticus* is relatively easy to farm, has a short life cycle and is a valuable source of nutrition for humans. Dried *A. domesticus* has a high amount of protein, including all essential amino acids present in levels higher than current FAO recommendations (FAO, 2013). House cricket is high in omega 3 fatty acids, P, Fe, Mn, Zn, Cu, vitamin B2, B5, B8, B9, B12 and E. The compositional analyses and scientific studies demonstrate no safety concerns for heavy metals, mycotoxins, PCB/ dioxins, pesticides, prions and micro-organisms in *A. domesticus*. The anti-nutritional factors are absent or present in low concentrations imposing no health risks. The EFSA opinion on chitin-glucan (EFSA NDA, 2010) intake is considered and calculated into anticipated consumption levels on the European level. The concentration of minerals is also taken into consideration to ensure that their levels do not exceed the tolerable upper limit mentioned by EFSA, 2014 and 2015, respectively.

The existing scientific literature does not report safety concerns related to the absorption, digestion, metabolism and excretion of proteins, minerals and chitin. Based on the low concentrations of undesired compounds, no ADME studies have been performed. Oral toxicity study conducted on freeze-dried crickets in literature showed the absence of toxic character and no adverse effects. Furthermore, the cellular toxicity study carried out using the aqueous extracts of *A. domesticus* by the applicant on different cell types demonstrated no cytotoxicity even at the highest concentration tested.

The cross-reactivity and taxonomic similarities of *A. domesticus* with molluscs and crustaceans has been previously demonstrated in scientific literature. The intake assessment was carried out for general population excluding infants and toddlers. Thus, the food products subject to this application should have the compulsory label declarations: 'People who are allergic to dust mites, crustaceans or molluscs may have an allergic reaction to the consumption of insects'; 'Not recommended for children under three years of age'.

Additionally, the product may contain other allergens based on the nature of feed which is also declared on label. We conclude that *A. domesticus* and its products are safe for the consumption by the European population at the proposed conditions of use. No adverse nutritional effects are expected at the proposed intake levels.