

Edible insects as a novel source of proteins and food allergens

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In search for sustainable solutions, entomophagy is being proposed as an alternative source of proteins, with economic and environmental advantages when compared to current meats. Edible insects are considered a valuable source of nutrients such as polyunsaturated fatty acids, essential amino acids, micronutrients and proteins, having a nutritional value comparable or superior to those of both chicken and beef. Moreover, edible insects are valuable sources of bioactive compounds after their gastrointestinal digestion that originates small peptides with important bioactive properties [1,2]. Despite their advantages, edible insects raise safety concerns, particularly related with their allergenic potential owing to primary sensitisation or cross-reactivity in crustacean-allergic individuals [3]. Following the guidance on the preparation and presentation of an application for authorisation of a novel food in the context of Regulation (EU) 2015/2283, to date, the European Union (EU) has authorised the placing on the market of four species of insects that comply with the legislation on novel foods for human consumption, namely: *Tenebrio molitor* larva (yellow mealworm), *Locusta migratoria* (migratory locust), *Acheta domesticus* (house cricket) and, recently, *Alphitobius diaperinus* larva (lesser mealworm). The establishment of legislation ensuring the safety of insects for human consumption as food and their availability as edible products, such as frozen, paste, dried and powder forms, are two factors in favour of their general acceptability. The yellow mealworm was the first with the completed evaluation of an insect-derived food product, without raising any safety concerns for human intake, except regarding allergenicity. Considering that a wide range of *T. molitor* products thereof are already commercially available in EU, its detection and traceability of is of utmost importance [4].

This presentation will provide an overview about edible insects as alternative sources of protein and bioactive peptides, referring the legislative framework currently in place in the EU, the key elements required for allergenicity assessment of novel foods, potential cross-reactivity in crustacean allergic patients, and insect traceability in foods.

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