

Management Board
18 December 2019

Highlights from 96th Scientific Committee Plenary (December 2019)

Simon More

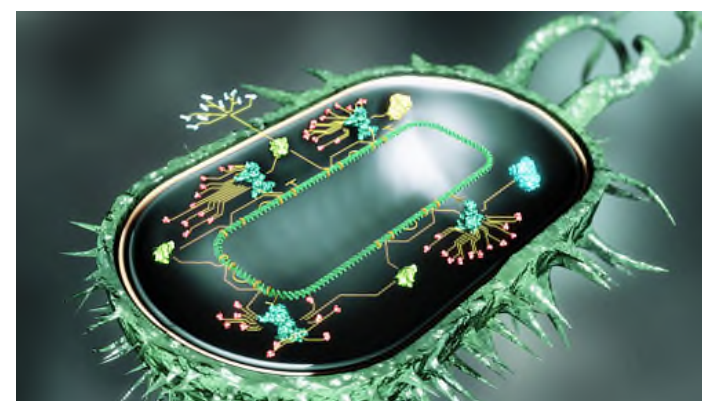
Chair of the Scientific Committee



Trusted science for safe food

Synthetic biology

The application of science, technology and engineering to facilitate and accelerate the design, manufacture, and/or modification of genetic material in living organisms



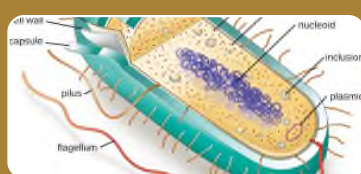
EFSA contact: Reinhilde Schoonjans

- “Near future”: reaching the EU market in the next decade
- “Agri-food uses”: means agri/food/feed products falling within EFSA’s remit
 - exclusion of bioremediation applications, and by extrapolation de-extinction, bio-weapons/bio-preparedness, medical use, and biofuels
- Limited to deliberate release into the environment only (including wildlife)
- Existing guidelines for risk assessment

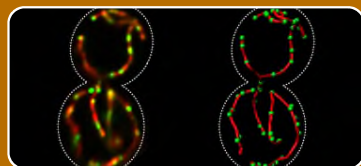
Four case studies



Citrus tristeza, that was redesigned to express a spinach defensin in order to counteract the citrus greening disease



Klebsiella oxytoca, with a gene cluster encoding the nitrogen fixation pathway, potentially used as biofertilizer in soil



Saccharomyces cerevisiae that produces raspberry ketone, for beer flavouring



Xenobiological variants of bacterial origin

Beeswax adulteration



EFSA contact: Raquel Garcia Matas

1. Violation of EU Food Law

Directive 2006/114/EC (*not EU Food Law*)

Misleading advertising to other traders (B2B)

Reg. 1069/2009 Animal By-Product

Beeswax imported as Cat. 3 (beekeeping) instead Cat. 2 (candles)

Reg. 231/2012 on food additives

Introduction in the Food Chain (additive, food supplements, honeycomb)

2. Intention

Adulteration of beeswax with cheaper "waxes"

3. Economic gain

Retail price of beeswax is €13/kg versus paraffin (candlewax) €6/kg

Economic gain: 1 tonne of 30% adulterated beeswax = €2,100

4. Deception of Customers

Customers believe they are using an authorised and safe product

Bee health: negative issues on brood development

Public health : consumption of beeswax containing non-food grade ingredients

Health implications

For humans



For bees



Botanicals



EFSA contact: Bernard Bottex

Compendium of botanicals

- Botanical scientific name + synonyms
- Botanical family
- Plant parts containing the compound(s) of concern
- Substances of possible concern for human health
 - Belong to one of the chemical groups considered as ‘of concern’ by default by the EFSA Working Group
 - Known to be of concern by our working group
 - *The actual toxicity of these substances will be characterised in a systematic manner in a follow-up project*
- Reported adverse effects
- Literature references for the data presented

Recent applications



<https://www.flowerstudioshop.co.uk/wp-content/uploads/2015/07/049.jpg>

- Use of ecdysteroids in food supplements for anabolic effects
- Turmeric or curcumin-containing food supplements and possible hepatotoxicity
- Use of flowers in food as possible emerging risk

Microplastics and nanoplastics



By Muntaka Chasant - Own work, CC BY-SA 4.0,
<https://commons.wikimedia.org/w/index.php?curid=75041713>

EFSA contact: Hans Verhagen



MICROPLASTICS AND NANOPLASTICS: ECHA AND EFSA WORKING TO PROTECT THE EU

BACKGROUND

- The environmental and human health risks posed by micro and nanoplastics have recently been subject to increasing regulatory and scientific scrutiny.
- Micro and nanoplastics (synthetic polymer-containing particles <5mm) can be formed through the wear and tear of larger objects, including synthetic textiles and tyres. They can also be manufactured and intentionally added to products, e.g. cosmetics, fertilisers, detergents, paints. Once released into the environment, they are persistent and may be accumulated by animals, including fish and shellfish, and consequently consumed in food by consumers.
- Both EFSA and ECHA have been actively working in the area of micro and nanoplastics, an excerpt of which is presented here.



EFSA ACTIVITIES

Risks to consumers


EFSA has been addressing nanoscience and nanotechnologies in the food chain for some years, producing guidance on risk assessment in 2011, and updating this for human and animal health in 2018 (<http://www.efsa.europa.eu/en/efsajournal/pub/5327>).

Microplastic and nanoplastic particles in food were first flagged as a potential future food safety issue by EFSA's Emerging Risks Exchange Network.

In reaction to this and as a first step towards a future assessment of the potential risks to consumers from microplastics and nanoplastics in food, especially seafood, EFSA reviewed the current state of knowledge in 2016 (<https://www.efsa.europa.eu/en/efsajournal/pub/4501>), concluding that:

- Methods are available for identification and quantification of microplastics in food, but occurrence data are limited; for nanoplastics, no methods or occurrence data in food are available.
- Research on the toxicokinetics and toxicity, including studies on local effects in the gastrointestinal (GI) tract, are needed as is research on the degradation of microplastics and potential formation of nanoplastics in the human GI tract.


Among the authorised food additives in the EU included in Reg 1333/2008 there are substances that may fall under the definition of microplastics.





European Food Safety Authority


About ▾ News ▾ Discover ▾ Science ▾ Publications ▾ Applications ▾ Engage ▾

Home Calendar Scientific Colloquium 25 "Microplastics an..."

 Print

 Twitter

 LinkedIn

 Facebook

Scientific Colloquium 25 "Microplastics and nanoplastics in food and feed"

8 June 2020 to 9 June 2020

Save the date! Microplastics and nanoplastics in food and feed, EFSA 25th Scientific Colloquium, 8-9 June 2020