

Recalls of sesame seed products due to pesticide residues

In September 2020, Belgium initiated a notification in the EU Rapid Alert System for Food and Feed (RASFF) concerning residues of an unauthorised substance called ethylene oxide (EO) in various lots of sesame seeds from India. This triggered a chain of enforced testing and controls, leading to withdrawals and recalls of significant amounts of products in many EU Member States, including products such as hummus, bread, and sauces containing sesame. Both conventional and organic products are concerned. A possible explanation according to scientists could be that ethylene oxide has been used for fumigating sesame seeds, to eradicate contamination with salmonella.

Background

India is one of the EU's major sesame suppliers. More than half of the import volume (ca 70 000 tonnes annually) originates from India. On 9 September 2020, a notification ([2020.3678](#)) concerning residues of ethylene oxide was published in the EU [RASFF portal](#). Tracing of the lots showed that the affected sesame seeds had been delivered to several Member States and used for the production of various foodstuffs. Alarmed by this, other Member States (and EFTA countries belonging to the RASFF system) also started a massive tracing and testing operation, and up to 20 November 2020, roughly 140 notifications concerning EO in sesame from India had been notified within the RASFF portal. As of the end of January 2021, [notifications](#) were still coming from different countries, with 477 notifications on the unauthorised substance EO.

What is ethylene oxide?

Ethylene oxide is a [widely produced](#) chemical, mainly used as a chemical intermediate in the manufacture of other chemicals or products, such as polymers (for example polyethylene terephthalate, [PET](#)) and [surfactants](#). Its use as a pesticide is banned in the EU, but allowed in many other countries, such as Canada, India, and the United States. Due to its strong antibacterial properties, EO is also used for fumigation purposes, for example sterilisation of medical equipment, but also the control of insects and micro-organisms (fungi and bacteria) in dry food products, such as herbs, spices, nuts and oily seeds. In the EU, the use of EO for the disinfection of foodstuffs is not permitted; EO is [classified](#) as a mutagen, carcinogen and a reproductive toxicant.

Ethylene oxide is a very volatile and reactive compound. As such it remains in only very small amounts in treated foods. [Detecting and calculating](#) the amount of EO is therefore a complicated, special process that, for financial reasons, is normally used only for individual cases within routine food monitoring programmes.

EU action

In the field of food law, the competence to set general principles and requirements is with the European Parliament and the Council as co-legislators, and Member States implement these legal instruments in their national law. When it comes to setting uniform conditions, the implementing powers are conferred on the European Commission solely.

In this instance, Member State experts, the Commission and the European Food Safety Authority ([EFSA](#)) gathered at a [food and feed crisis coordinators](#) meeting on 9 October 2020 and in the [standing committee](#) on 23-24 November 2020 to determine harmonised action. The Commission drafted a safeguard measure, [Implementing Regulation \(EU\) 2020/1540](#), which was published in the Official Journal of the European Union on 23 October 2020. The implementing regulation requires that India do prior testing of sesame seeds intended for export to the EU, to certify compliance with the maximum residue level (MRL) of pesticides applicable for EO (0.05 mg/kg). Testing must be confirmed by an official certificate, which must

then accompany all consignments. Furthermore, the regulation increases checks at border control posts on sesame seeds coming from India, requiring checking of 50 % of all consignments presented at the EU border.

In December 2020, the EU Reference Laboratories for Residues of Pesticides (EURLs) released a [report](#) on EO. According to the report, it is not known for how long EO fumigation has been in use on, or increasingly applied to, sesame seeds in India. The report further states that, given the strong antibacterial properties of EO, it is conceivable that EO fumigation may have been initiated in India as a measure to reduce the incidences of sesame seed contamination with salmonella and other faecal bacteria.

Background

In the past two decades, there have been recurring notifications through the RASFF concerning the occurrence of salmonella in consignments of sesame seeds from India, as well as from some African countries. Due to these notifications, the frequency of import controls had already been increased as of 2014. The EU Food and Veterinary Office carried out an [audit](#) in India in December 2014 in order to assess the control systems in place to check microbiological contamination in seeds for export to the EU. The auditors reported that fumigation with another chemical (phosphine) was taking place, but did not report any EO fumigation. In February 2017, an EU regulation was implemented requiring that a health certificate, as well as a laboratory report verifying the absence of salmonella accompany each consignment of sesame seeds. In 2018, the Directorate-General for Health and Food Safety (SANTE) of the European Commission undertook a [follow-up](#) mission to India, but fumigations were not mentioned in its report.

Implications for consumers

The RASFF notification quickly led to withdrawals from the market of notable amounts of products in which sesame seeds were used, in both conventional and organic products. The Belgian Federal Agency for the Safety of the Food Chain, which made the first alert in RASFF, notes on its [website](#) that stocks of sesame seeds that were still present in the affected companies were immediately impounded, to stop their further dissemination. It further explains that, although sesame seeds are usually incorporated in small amounts in the end-product (such as bakery products), their risk analysis suggested that there could be a risk for consumers' health in the long term, in case of long-term daily consumption of large amounts. Therefore, products containing non-conforming lots were also withdrawn from the market, or recalled if they had already been sold to consumers. The Belgian agency also says that it is still conducting checks on products in which sesame seeds are used, and [recalling products](#) from the market. In other affected EU countries, such as [France](#), tracking and recalling of products is still continuing.

Next steps

The Member States and the EU are now taking steps to ensure that only sesame seeds that comply with EU standards are brought to the market. Importers are asked to conduct analyses on sesame seeds coming from India. Since 26 October 2020, every consignment has to be accompanied by an official certificate confirming that the seeds comply with European regulations. In addition, the Member States have to increase the frequency of [controls](#) at border control posts. The competent authorities in the Member States should stay alert and inform consumers as soon as there is a need to recall products suspected to be non-conforming. It is recommended that consumers regularly check if they are in possession of products that have to be recalled. Information on recalled products is available, for example, on the websites of the national food safety authorities, as well as from sales points of the concerned products (supermarkets and stores) and their websites.

As of January 2021, at least some of the food safety authorities in Member States have also [announced](#) that they are continuing and expanding their investigations, scrutinising further countries of origin as well as other products, such as spices.

