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by Elanda Fikri

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A Case Report of Ethylene Oxide Contamination in Ice Cream “Häagen-Dazs”, How in Indonesia?

Elanda Fikri¹, Yura Witsqa Firmansyah^{2*}

¹Majoring Environmental Health, Politeknik Kementerian Kesehatan Bandung, Bandung City 40171, Indonesia

²Department of Health Information Management, Faculty of Health Science, Universitas Nasional Karangturi, Semarang City 50227, Indonesia

*Correspondent author: firmansyahyura@gmail.com

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Abstract

The availability of a safe food supply for the community is a right that must be fulfilled. One of the food supplies is dairy products such as milk. Milk can be processed into various types of products, including ice cream. On 8 July 2022, the European Union Rapid Alert System for Food and Feed (RASFF) reported a case of Ethylene oxide (EO) contamination in French Häagen-Dazs brand vanilla ice cream with levels exceeding quality standards (maximum of 20 mg/kg). This study aims to disseminate information about chemical contamination of ethylene oxide in ice cream and how the Indonesian authorities respond in to prevent and control the spread of contamination. The Previous case reports on 6 July 2022, authorities in France through RappelConso, and on 7 July 2022, Food Standards Australia New Zealand (FSANZ) published public information regarding the voluntary recall of Häagen-Dazs vanilla flavor ice cream by the manufacturer because it contains EO. Meanwhile, on 8 July 2022, the Singapore Food Agency (SFA) ordered importers to recall the product. The Häagen-Dazs ice cream industry must implement a good HACCP system, including a sound and safe selection of raw materials.

Keywords: *Ethylene oxide, Häagen-Dazs ice cream, Case report, HACCP, Prevention, Control*

Abstrak

Ketersediaan pasokan pangan yang aman bagi masyarakat merupakan hak yang harus dipenuhi. Salah satu bahan makanan tersebut adalah produk olahan susu seperti susu. Susu dapat diolah menjadi berbagai jenis produk, termasuk es krim. Pada 8 Juli 2022, European Union Rapid Alert System for Food and Feed (RASFF) melaporkan kasus kontaminasi Ethylene oxide (EO) pada es krim vanilla merek Häagen-Dazs Prancis dengan kadar melebihi standar kualitas (maksimal 20 mg/kg). Penelitian ini bertujuan untuk menyebarluaskan informasi tentang cemaran kimia Etilen oksida dalam es krim dan bagaimana pihak berwenang Indonesia menanggapinya dalam upaya pencegahan dan pengendalian penyebaran kontaminasi. Laporan kasus sebelumnya pada 6 Juli 2022, pihak berwenang di Prancis melalui RappelConso dan pada 7 Juli 2022, Food Standards Australia New Zealand (FSANZ) mempublikasikan informasi publik mengenai penarikan sukarela es krim rasa vanilla Häagen-Dazs oleh produsen, karena mengandung EO. Sementara itu, pada 8 Juli 2022, Singapore Food Agency (SFA) memerintahkan importir untuk menarik produk tersebut. Industri es krim Häagen-Dazs dituntut untuk menerapkan sistem HACCP yang baik termasuk pemilihan bahan baku yang baik dan aman.

Kata kunci: *Etilen oksida; Es Krim Häagen-Dazs, Case Report, HACCP, Pencegahan, Pengendalian*

1. Introduction

The availability of a safe food supply for the community is a right that must be fulfilled. One of the food supplies is dairy products such as milk. Milk can be processed into various types of products, including ice cream.[1] The International Dairy Foods Associations in 2021 data report shows a projected increase in ice cream consumption in the global market. The projected turnover in 2027 reaches a turnover of USD 91.9 billion, an increase of 30% or equivalent to USD 70.9 billion in 2019.[2] In line with the prospect of ice cream demand and turnover, ice cream is categorized as a food that has a high risk of contamination and has the potential for an outbreak of food poisoning.[3] Contamination can occur biologically, chemically, or physically.

On 8 July 2022, the European Union Rapid Alert System for Food and Feed (RASFF) reported a case of Ethylene oxide (EO) contamination in French Häagen-Dazs brand vanilla ice cream with levels

exceeding quality standards.[4] On 6 July 2022, the French government had previously withdrawn the product from the market.[5] The day after that, Food Standards Australia New Zealand (FSANZ) announced public information regarding the manufacturer's voluntary recall of Häagen-Dazs brand vanilla ice cream show in picture 1.



Picture 1. Häagen-Dazs Ice Cream Vanilla Flavor 450 ml

Source: Shutterstock

Temporary suspicion, contamination of Ethylene oxide in ice cream as a stabilizer. The stabilizer in ice cream serves to stabilize the emulsion, namely preventing the formation of cream from fat, the occurrence of carrageenan, separation of serum due to mismatches between polysaccharides and milk protein, and maintaining the consistency of the suspension so that it is not liquid.[6] Ethylene oxide poisoning in humans can cause headache, nausea, vomiting, diarrhea, breathing difficulty, drowsiness, weakness, exhaustion, eye and skin burns, frostbite, and reproductive effects. [7] This study aims to disseminate information about chemical contamination of Ethylene oxide in ice cream and how the Indonesian authorities respond in efforts to prevent and control the spread of contamination.

2. Material and Method

This study uses a descriptive method with a case report study design. A case report regarding Ethylene oxide contamination in ice cream products. The data used in this study is secondary data from government organizations (European Union Rapid Alert System for Food and Feed (RASFF), Food Standards Australia New Zealand (FSANZ), Singapore Food Agency (SFA), and *Badan Pengawas Obat dan Makanan* (BPOM)) and journal websites. The type of data in this study is qualitative data, including the type and taste of ice cream contaminated with Ethylene oxide. In contrast, quantitative data in this study is the size of the ice cream drawn.

3. Result and Discussion

The results of searching data from the European Union Rapid Alert System for Food and Feed (RASFF) website, Food Standards Australia New Zealand (FSANZ), Singapore Food Agency (SFA) and *Badan Pengawas Obat dan Makanan* (BPOM) types and sizes of haagen dazs ice cream contaminated with ethylene oxide are presented in table 1. Qualitative data, including the type and taste of Häagen-Dazs ice cream contaminated with Ethylene oxide. The quantitative data in this study is the size of the drawn ice cream.

Table 1. Recall of Häagen-Dazs Ice Cream Allegedly Contaminated with Ethylene Oxide in Several Countries Case Report 6 July-8 August 2022

Date of Cases Reported	Authority	Product Description
6 July 2022	France, RappelConso	Häagen-Dazs ice cream in 460 ml, 650 ml and 95 ml sizes in 4 small packets of vanilla flavor

7 July 2022	Australian, Food Standards Australia New Zealand (FSANZ)	¹ The Häagen-Dazs vanilla 457ml and Häagen-Dazs Classic collection mini cups 4 x 95mL
8 July 2022	Singapore, Singapore Food Agency (SFA)	⁵ Häagen-Dazs vanilla ice cream (pint and classic collection mini cups) from France
19 July 2022	Indonesian, <i>Badan Pengawas Obat dan Makanan</i> (BPOM)	Häagen-Dazs brand of vanilla ice cream in pint and mini cup packaging. Ice cream products with the same brand for 100 ml and 473 ml packages

The case report began on July 6, 2022. Authorities in France, through RappelConso, announced that ice cream with the brand "Häagen-Dazs" was contaminated with Ethylene oxide (EO), which exceeded the quality standards of European legislation.[5] French authorities did not specify the value of the Ethylene oxide contamination. The product recalled by the French authorities is "Häagen-Dazs" ice cream in 460 ml, 650 ml and 95 ml sizes in 4 small packets of vanilla flavor.[5] Meanwhile, the Australian authorities through Food Standards Australia New Zealand (FSANZ) recalled the "Häagen-Dazs" ice cream product on July 7, 2022.[8] The Australian authority recalled the Häagen-Dazs vanilla 457ml and Häagen-Dazs Classic collection mini cups 4 x 95mL.[8]

In Southeast Asia, on 8 July 2022, the Singaporean authorities through the Singapore Food Agency (SFA) recalled Häagen-Dazs vanilla ice cream (pint and classic collection mini cups) from France.[9] Meanwhile in 19 July 2022, the Indonesian authorities, the *Badan Pengawas Obat dan Makanan* (BPOM), recalled the Häagen-Dazs brand of vanilla ice cream in pint and mini cup packaging.[10] Ice cream products with the same brand for 100 ml and 473 ml packages imported from France had previously been registered with the *Badan Pengawas Obat dan Makanan* and circulated in Indonesia. As a preventive measure, the *Badan Pengawas Obat dan Makanan* conducted a wider recall for bulkcan (9.46 L). As well as an appeal for importers to temporarily stop the circulation/sale of other Häagen-Dazs brand ice cream products with a composition containing vanilla flavor until the product is confirmed to be safe. [10]

Food contamination does not only happen once in EU/EEA countries. Previously on April 19, 2022, there were 85 case reports of Salmonella contamination in Kinder Chocolate.[11] The latest case report shows Ethylene oxide (EO) contamination in ice cream. Ethylene oxide is a flammable gas, EO is used as a basic chemical to produce other chemical products.[12] Ethylene oxide is found as a fumigant to control pests and some other pathogens in several countries. Recently, EO was found in a stabilizer mix (Lygomme FM 4605 and FM 3630) in carob bean gum from one supplier which. During the agricultural process was sprayed with pesticides containing high EO chemicals.[13], [14] So that the hypothesis that can be formulated is that the use of pesticides containing EO on vanilla flowers (raw material for making Häagen-Dazs ice cream with vanilla flavor) leaves a high residue.

Prevention and control efforts that can be done is to increase the discipline of the Hazard Analysis And Critical Control Points (HACCP) system. Although the Häagen-Dazs ice cream industry has carried out HACCP and has a certificate of good manufacturing practices, discipline efforts must still be carried out, especially in the selection of vanilla flower raw materials as vanilla ice cream flavors. The HACCP

system is intended to assess and determine critical points of the manufacturing process so as to minimize contamination.[11] Meanwhile, the Indonesian authorities made efforts to prevent and control ice cream contamination by recalling all Häagen-Dazs ice cream products.[15] The *Badan Pengawas Obat dan Makanan* is in the process of conducting a policy review regarding EO, including monitoring the latest developments in international food safety regulations and standards, as well as conducting sampling and testing to determine the level of exposure. If the Indonesian society finds that the Haagen-Dazs brand ice cream product with a vanilla flavor variant and/or a variant with a composition containing vanilla flavor is still in circulation, they should report it to the *Badan Pengawas Obat dan Makanan* through the HALOBPOM Contact Center or the Consumer Complaints Service Unit (ULPK) of the Balai Besar/Balai/Loka. POM throughout Indonesia. The *Badan Pengawas Obat dan Makanan* continuously conducts pre- and post-market monitoring and supervision of the facilities and products in circulation for the protection of public health and ensures that products registered with the *Badan Pengawas Obat dan Makanan* and circulating in Indonesia are safe for consumption.

4. Conclusion

Food safety is a right that all people of the world must fulfill. Food safety is a right that must be fulfilled by all people of the world. The case report on July 6, 2022 regarding the contamination of the chemical Ethylene oxidant in Häagen-Dazs ice cream shows a lack of discipline in the safe processing of food. The Häagen-Dazs ice cream industry must to implement a sound HACCP system including a good and safe selection of raw materials. The Indonesian government through the National Agency of Drug and Food Control (BPOM) has withdrawn the vanilla flavored Haagen Dazs ice cream product circulating in Indonesia. To protect the public, BPOM instructs importers to withdraw from circulation Haagen Dazs products registered in Indonesia. BPOM will also temporarily stop the circulation or sale of the ice cream product with a composition containing vanilla flavour, until the product is confirmed to be safe. BPOM is conducting a policy review related to EtO, including monitoring international food safety standards. BPOM also conducts sampling and testing to determine the level of exposure.

5. Daftar Pustaka

- [1] L. Nalbone, L. Vallone, F. Giarratana, G. Virgone, "Microbial Risk Assessment of Industrial Ice Cream Marketed in Italy," *Appl. Sci.*, vol. 12, no. 4, 2022.
- [2] International Dairy Foods Association, "Ice Cream." [Online]. Available: <https://www.idfa.org/news-views/media-kits/ice-cream/ice-creamsales-trends>. [Accessed: 20-Jul-2022].
- [3] B. . Lund, "Microbiological food safety for vulnerable people," *Int. J. Environ. Res. Public Heal.*, vol. 12, pp. 10117–10132, 2015.
- [4] R. Window, "Ethylene Oxide in Vanilla Ice Cream," 2022. [Online]. Available: <https://webgate.ec.europa.eu/rasff-window/screen/notification/558641>. [Accessed: 20-Jul-2022].
- [5] Republique Francaise, "Cremes Glacees Vanille.", The Connection, France. [Accessed: 31-July-2022]
- [6] H. Douglas Goff, "Ice Cream Technology E-Book." [Online]. Available: <https://books.lib.uoguelph.ca/icecreamtechnologyebook/chapter/stabilizers/#:~:text=The functions of stabilizers in,in suspension of liquid flavours>. [Accessed: 20-Jul-2022].
- [7] Centers for Disease Control and Prevention, "Ethylene Oxide." [Online]. Available: [https://www.cdc.gov/niosh/topics/ethyleneoxide/default.html#:~:text=Ethylene oxide \(C₂H₄O\) is a,from exposure to ethylene oxide](https://www.cdc.gov/niosh/topics/ethyleneoxide/default.html#:~:text=Ethylene oxide (C2H4O) is a,from exposure to ethylene oxide). [Accessed: 20-Jul-2022].
- [8] Food Standards Australian New Zealand, "Haagen-Dazs Ice Cream." [Online]. Available: <https://www.foodstandards.gov.au/industry/foodrecalls/recalls/Pages/Häagen-Dazs-ice-cream.aspx>. [Accessed: 20-Jul-2022].
- [9] Singapore Food Agency, "Recall of Häagen-Dazs Vanilla ice cream from France due to presence of Ethylene Oxide," Singapore, 2022.
- [10] Badan POM, "Penarikan Produk Es Krim Rasa Vanila Merek Haagen-Dazs Asal Prancis yang Mengandung Etilen Oksida," 2022. [Online]. Available: <https://www.pom.go.id/new/view/more/klarifikasi/152/Penarikan-Produk-Es-Krim-Rasa-Vanila-Merek-Haagen-Dazs-Asal-Prancis-yang-Mengandung-Etilen-Oksida.html>. [Accessed: 20-Jul-2022].
- [11] E. Fikri, Y. W. Firmansyah, and R. Husna, "Health Information: A Case Report of Outbreak Salmonella Infection in 'Kinder Chocolate', How in Indonesia?," *J. Aisyah J. Ilmu Kesehat.*, vol. 7,

no. 1, 2022.

- [12] T. Bessaire, T. Stroheker, and et al, "Analysis of ethylene oxide in ice creams manufactured with contaminated carob bean gum (E410)," *Taylor Fr. Online*, pp. 2116–2127, 2021.
- [13] RASFF Window, "Rapid Alert System for Food and Feed notification number 2021.2966. Ethylene oxide in Lygomme FM 4605 stabilizer from Turkey used in ice cream made in Spain," 2021. .
- [14] RASFF Window, "Rapid Alert System for Food and Feed notification number 2021.3882. Non authorized substance (ethylene oxide) in ice cream products produced with Lygomme FM 3630 stabilizer from France," 2021. .
- [15] A. Dudkiewicz, P. Dutta, and D. K. Krajewska, "Ethylene oxide in foods: current approach to the risk assessment and practical considerations based on the European food business operator perspective," *Springer*, vol. 248, pp. 1951–1958, 2022.

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