

AMMONIA LEAKAGE ACCIDENTS IN BRAZILIAN MEATPACKING PLANTS: A SILENT EPIDEMIC OF SERIOUS POISONINGS SUMMARY

Leandro Vargas Barreto de Carvalho¹; Isabele Campos Costa Amaral¹; Thelma Pavesi¹; Rita de Cássia Oliveira da Costa Mattos¹; Fernando Alves Leite²; Regina Dal Castel Pinheiro³; Roberto Carlos Ruiz⁴; Allan Campos Silva⁵

¹ Center for Studies on Workers' Health and Human Ecology / Sergio Arouca National School of Public Health / Oswaldo Cruz Foundation (Cesteh/Ensp/Fiocruz - Rio de Janeiro/RJ)

² Labor Prosecutor's Office (MPT) / Regional Labor Attorney's Office (PRT) – 18th Region

³ Health Surveillance Department of the State of Santa Catarina

⁴ National Confederation of Food Industry Workers (CONTAC)

⁵ Institute of Public Policy and International Relations - São Paulo State University

INTRODUCTION: Ammonia is a primary irritant gas, as its main toxic effects are restricted to areas of direct contact. It is a highly toxic substance, considered to pose a high risk to human health, as it is corrosive to the skin, eyes, lungs, mouth and digestive tract. Workers may be harmed by exposure to ammonia, and the level of exposure depends on the dose, duration and work performed. Ammonia is used industrially in corrosion inhibitors, water purification systems and in the composition of household cleaning materials. In addition, ammonia is widely used as a refrigerant gas in food industries, mainly meatpacking plants. There are no known specific biomarkers to assess exposure to ammonia, therefore, the main notification for this situation is the most serious cases of poisoning. Small leaks of up to 10 ppm may go unnoticed, despite having the potential to cause eye and throat irritation. As the volume of the leak increases, the damage can be severe, with burns to the skin, eyes and lungs. Depending on the level of exposure, a few minutes can be fatal, leading to death. **OBJECTIVE:** To analyze cases of ammonia leaks and poisoning in Brazilian workers in the meatpacking industry. **MATERIAL AND METHODS:** Consultation of websites related to worker health to analyze cases of work accidents involving ammonia in recent years (since 2003), with the main source being the website “Observatory of Health, Work and Environment in Agribusiness - ObAgro”. **RESULTS AND CONCLUSION:** In 2025, there have already been 15 accidents involving ammonia in Brazil by the beginning of April, and this number is only growing. Since 2023, the country has faced at least 1 accident every 10 days, remembering that small leaks do not come to public attention. The lack of specific biomarkers makes it difficult to monitor exposure. The extraordinary number of recent cases, involving hundreds of workers who were poisoned and required medical care, points to a precarization in investments in accident prevention and in the maintenance policy of factories, which only prioritize profit and leave the Health and Safety of Workers aside, repeatedly putting their lives at risk.

Keywords: Ammonia; Occupational Health; Occupational Accidents Registry; Food Industry