

Synthesis - Report

Toxicovigilance biocides 2022

The Poison Centre is known for its expertise in the field of toxicology and plays an important role in prevention, toxicovigilance, scientific research, training and networking. The Poison Centre answers more than 60,000 calls a year 24/7 in the context of emergency assistance.

At the request of the Federal Public Service Health, Food Chain Safety and Environment, the Poison Centre conducted a study on calls related to biocide use in Belgium in 2022.

The evolution in exposures by main group and by type of biocide (product type) was investigated. The study reveals significant differences between different age groups, product types and seasonal effects.

The **majority of exposures** in humans are due to disinfectants (group 1) or pest control agents (group 3). Adults are more exposed to disinfectants, mainly to disinfectants and algicides of product type 2 (PT 2), followed by contacts to human hygiene disinfectants (PT 1).

The COVID-19 pandemic gave an increase in the number of calls on disinfectants. In 2022, the number of calls about disinfectants for human hygiene or environment (PT 1 and PT 2) was still higher than before the pandemic, but lower than in 2020 and 2021.

Children are more frequently exposed to pest control agents (group 3) than adults. Exposures to insecticides (PT 18) are the most frequent, followed by exposures to repellents and attractants (PT 19) and rodenticides (PT 14).

Exposures are often seasonal: for several product types, the number of cases increases in the summer months, which is due to the more frequent use of, for example, swimming pool disinfectants. Insecticides, repellents and attractants and rodenticides (PT18, PT 19, PT 14) are likewise used more frequently in the summer months.

The **route of exposure** is different for adults and children and according to the type of biocide. Children are most often exposed via oral contact, mostly linked to the exploratory behaviour of young children. In adults, there is more variation in exposure routes linked to the uses of certain types of biocides. For example, inhalation contacts are more common in adults, mainly for biocides that are sprayed (e.g. insecticides) or for products that can generate a mist or gas.

The **presence of symptoms** at the time of the call differs between biocide types. This is related to the active substances, that can have an immediate effect (e.g. chlorine vapours) and/or a delayed effect (e.g. blood thinners such as diphenacoum).

Finally, there is little variation in the **distribution of active substances** by product type in the calls over the years:

- Among biocides for human hygiene (PT 1), substances based on an alcohol remain the most frequently mentioned in calls to the Poison Control Centre;
- Chlorinated products and quaternary ammonium derivatives remain very prominent within the group of disinfectants and algicides (PT 2).
- Quaternary ammonium derivatives make up the majority in exposures to biocides for food and feed (PT 4) and preservatives for building materials (PT 10).
- Mixtures of pyrethroids and antifungals are most commonly reported in the category of wood preservatives (PT 8).
- Rodenticides based on anticoagulants remain the most common within rodenticides (PT 14).
- As in previous years, the group of pyrethrins and pyrethroids remain most frequently mentioned among insecticides, acaricides and products to control other arthropods (PT 18).
- Eucalyptus citriodora oil remains prominent in the repellents and attractants group (PT 19), followed by DEET and IR3535.

In conclusion, the Poison Centre was able to demonstrate significant trends in the data: the exposures to biocides present differently according to the age of the victim, seasonality and between product types and main groups of biocides. Disinfectants and pest control products remain the categories of most concern.

This study calls for continued vigilance, a targeted approach in prevention and continued cooperation to ensure the safety and health of the population. Some of the exposures to biocidal products are avoidable: by proper storage of biocides (e.g. do not keep containers of chlorine derivatives in hot and humid environments; bottles of alcohol gel do not belong next to the changing table) and by keeping children and pets at a distance during use.