Unauthorised plant protection products are still in circulation in France

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ANSES has analysed exposures and poisonings due to plant protection products, recorded by poison control centres from the beginning of 2017 to the end of 2022 and focusing on active substances that are not, or are no longer, approved in the European Union.
Certain products are still a regular source of poisoning, despite in some cases having been withdrawn from the market more than 20 years ago.
This is due to the stockpiling of old products that were once authorised in France, or imports of products that are banned here but authorised in other countries, and sometimes misused.

Poison control centres (PCCs) in France regularly record cases of exposure to plant protection products (PPPs) containing non-approved active substances[1], which may or may not have been authorised in France in the past. Moreover, some exposure to fraudulently obtained and misused non-PPPs in Europe has been fatal. There have also been cases of suicide involving misuse of PPPs.

A study of these exposures over the period 2012-2016[2] suggested that, while they fell in number as marketing authorisations were withdrawn in mainland France, this was less the case in the overseas territories.

IS THE SITUATION IMPROVING?

To monitor developments in the situation, ANSES looked at exposure to products containing at least one non-approved active substance as of 31 December 2013, focusing on cases recorded by PCCs between 1 January 2017 and 31 December 2022.

The reason for choosing 2013 as the cut-off date was to ensure that the first year of the study period (2017) was long enough after when the products were withdrawn from the market. Four years is sufficient time for consumers to become aware of the ban and to take the steps it implies: no longer keeping or using these products. Professionals were able to take them to collection points listed on the ADIVALOR[3] website, while individuals could take them to waste disposal centres, or to garden centres or DIY shops, some of which collect this type of waste free of charge.

DICHLORVOS THE ACTIVE SUBSTANCE MOST FREQUENTLY INCRIMINATED

During the study period, the PCCs registered 599 dossiers relating to 64 non-approved active substances found in 150 different plant protection products.

The main products involved were insecticides (60%), herbicides (19%) and mole killers (5%).

Dichlorvos (an organophosphate insecticide and acaricide) was the most commonly cited active substance (34%), followed by aldicarb (a carbamate insecticide, acaricide and nematocide) (10%), strychnine (a mole killer) (7%) and paraquat (a herbicide) (5%).

[1] Twenty questions about ANSES and the authorisation of plant protection products
[2] https://vigilanses.anses.fr/sites/default/files/VigilAnsesN7_February2019_UnauthorisedPP.pdf
[3] https://www.adivalor.fr/

Regarding exposure to dichlorvos (n=204), the results revealed misuse of the product SNIPER 1000 EC DDVP®. Almost 82% (n=166) of exposures to dichlorvos involved this product, which is sold mainly in Africa for use as a plant protection product in agriculture, but is then imported illegally and misused as a biocide against bedbugs and cockroaches. This product was the subject of a specific alert in 2023[4].

REGIONAL CHARACTERISTICS

France's overseas territories (limited here to Guadeloupe, Martinique, French Guiana, Reunion Island and Saint-Pierre-et-Miquelon), as well as Île-de-France, Hauts-de-France and Normandy were the regions most affected by these exposures/poisonings.

A number of regional specificities emerged from this study:

- Dichlorvos was involved in four out of five cases in the Île-de-France region, half the cases in Provence-Alpes-Côte d'Azur and one third in the Grand-Est region.
- Aldicarb was the main cause of exposure in Hauts-de-France (58%), strychnine in Auvergne-Rhône-Alpes (30%), and paraquat (59%) and aldicarb (25%) in the overseas territories.
- French Guiana was the region most affected by paraquat poisoning. This overseas territory has land borders with South American countries such as Suriname, where paraquat is still available without legal restrictions and where people from French Guiana can obtain supplies. When the country of import was stated in the study, the paraquat came from Suriname.

Products imported illegally or kept in stock

Information on the origin of the products was provided in only 19.6% of cases (n=119). Around half of these concerned dichlorvos purchased in France from market street vendors, in shops or on the Internet.

In a third of these cases, the product had been purchased when it was still authorised in France and then stored. This was particularly true of products containing strychnine or aldicarb.

Lastly, in the remaining cases, the product had been supplied by a third party but it was unknown how they had obtained it.

Varying circumstances of exposure depending on the active substance

Accidental exposure accounted for three quarters of cases: everyday accidents, DIY accidents, or lack of risk perception[5] in young children or adults with mental disorders.

The remaining one-quarter of cases concerned suicidal behaviour, mainly involving aldicarb, strychnine, paraquat or carbofuran.

The intentional poisoning was more severe than the accidental poisoning. In fact, almost half (59 out of 119) of the cases of deliberate poisoning were of moderate or high severity, compared with 3% (14 out of 437) of the accidental poisonings. All 15 deaths were suicides. The active substances implicated most often in the 55 most serious poisonings, i.e. those causing severe or life-threatening symptoms or death, were aldicarb (n=25), strychnine (n=10) and paraquat (n=8).

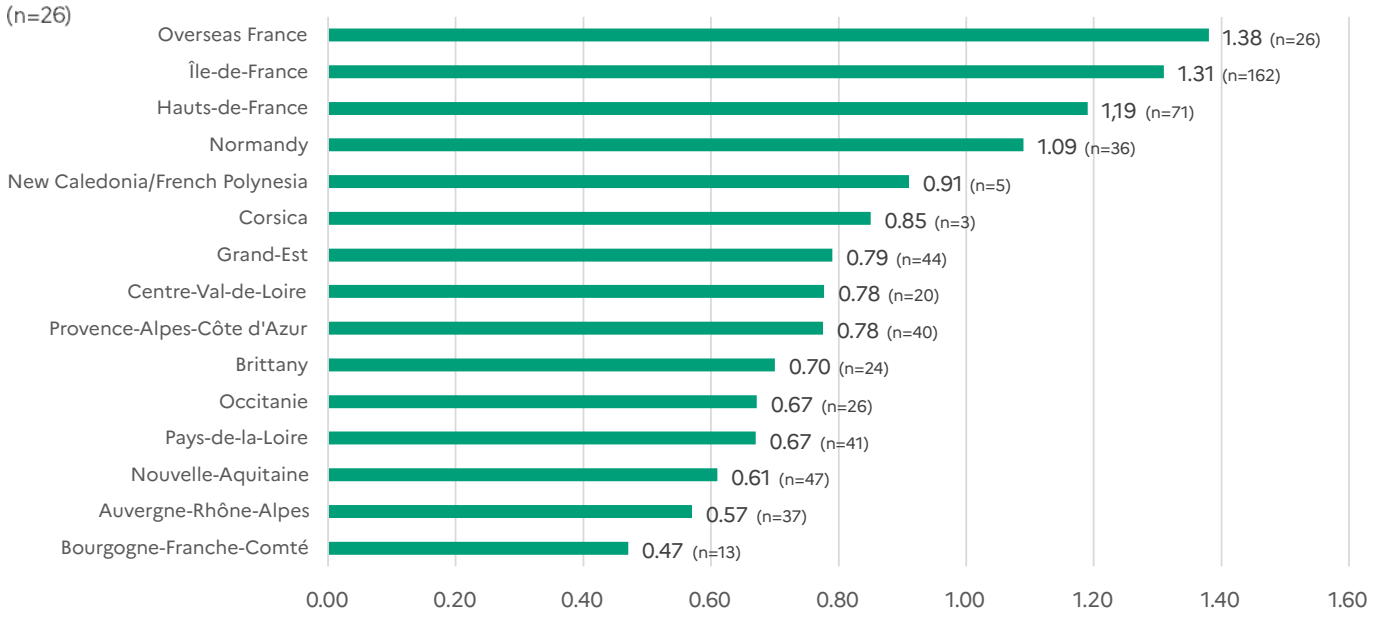

Figure 1 -Regional incidence of cases reported to poison control centres expressed as number of cases per 100,000 inhabitants (Source SICAP: 1 January 2017 - 31 December 2022)

[4] https://vigilanses.anses.fr/sites/default/files/VigilAnses_N21_EN-bannedproducts.pdf

[5] A lack of risk perception is defined as an accidental exposure circumstance due to the patient's inability to analyse the potential danger of the situation.

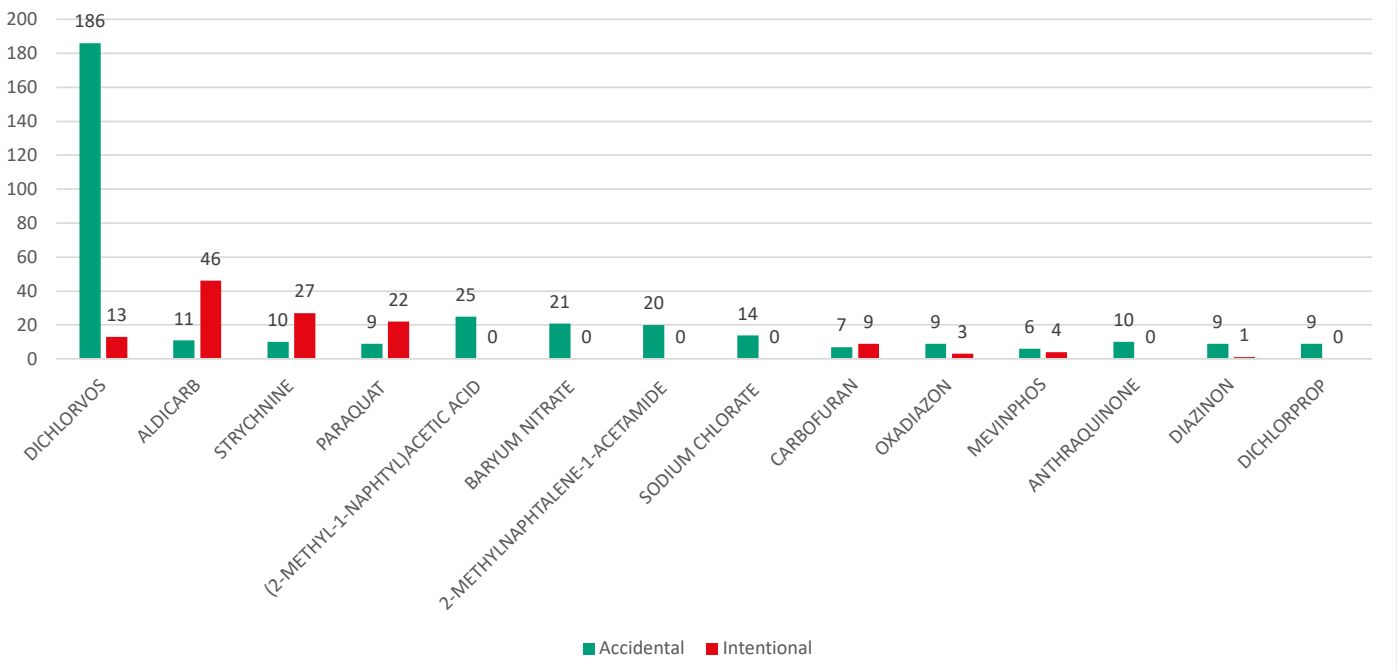

Figure 2 - Circumstances of exposure for the 14 active substances most often incriminated, excluding dichlorvos (source: SICAP)

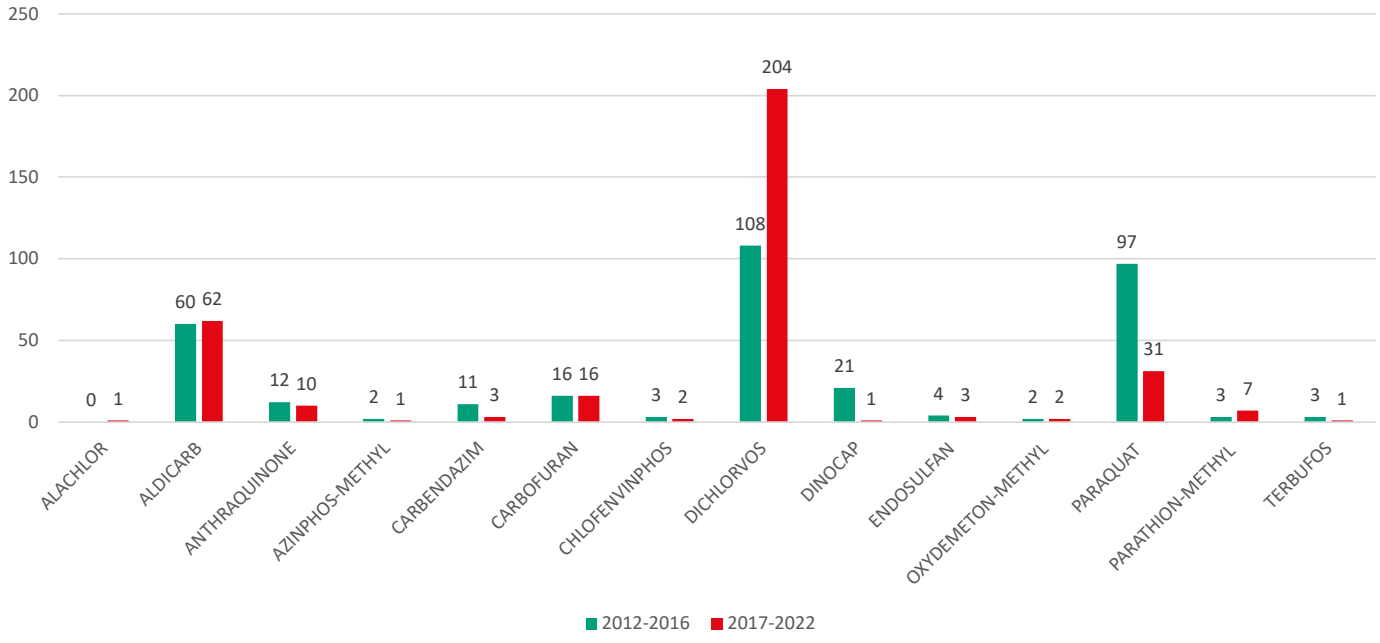

Figure 3 -Trend over time of cases due to the 14 active substances common to both studies

Results stable compared with the previous study

The study of cases reported from 1 January 2012 to 31 December 2016 had identified 408 human exposures, with or without symptoms, to plant protection products containing active substances not approved in Europe, with an average of 82 cases per year. The active substances targeted by this first study were those listed in the notice issued by the Ministry of Agriculture and Fisheries in the Official Journal of 28 March 2008[6], i.e. 21 active substances.

In the second study, despite there being three times as many active substances (64 compared with 21), the number of cases only increased by a factor of 1.5: 599 cases versus 408. However, in both studies, the active substances most frequently incriminated were dichlorvos, paraquat and aldicarb.

The number of cases of exposure to the 14 substances common to both studies was stable, with the exception of dichlorvos and paraquat. Cases of exposure to dichlorvos reported to PCCs increased sharply as a result of SNIPER 1000 EC DDVP® being misused as a biocide. In contrast, exposure to paraquat, which has not been approved since 2007, fell by 68% between the two periods.

Aldicarb, which lost its EU approval over 16 years ago, was still implicated in around 10 PCC calls each year, particularly in Hauts-de-France. In this region known for potato and sugar-beet growing, aldicarb products were widely used and stocks may still remain. In the French Caribbean, the misuse of aldicarb as a rodenticide on banana crops continued until at least 2004[7]. The cases reported in Guadeloupe and Martinique suggest stockpiling of products.

In most cases, for the two periods, the deaths and severe life-threatening symptoms were associated with exposure to paraquat, aldicarb or carbofuran.

The 2012-2016 study had already pointed out the existence of illegal imports, such as dichlorvos in mainland France and paraquat in French Guiana.

It had also highlighted the continued use in the professional agricultural sector of certain fungicides such as anthraquinone, an active substance also found in the new study.

CONCLUSION

Despite some active substances not having had their European approval renewed for more than 20 years, they are still found in France, mainly as a result of illegal imports of plant protection products that can no longer be marketed in the EU but that are sold on French soil and then misused.

As a reminder, since 2019, the Labbé Act has banned the use of plant protection products by amateur gardeners, with the exception of biocontrol products, low-risk products and products authorised for use in organic farming bearing the words "Authorised for use in gardens".

Chloé Greillet (ANSES), Patrick Nisse (Lille PCC) and Florent Battefort (Toulouse PCC)

FIND OUT MORE

ANSES (2018). Exposure to plant protection products containing unauthorised active substances in metropolitan France and the overseas territories. Retrospective study of observations recorded by the French poison control and toxicovigilance centres and veterinary poison control centres (2012-2016). Maisons-Alfort: ANSES, 44p.

ANSES (2019). Pesti'Home study. National survey on domestic uses of pesticides. ANSES's recommendations. Study report. Maisons-Alfort: ANSES, 282p.

ANSES (2023). Exposure to SNIPER 1000 EC DDVP®. Retrospective study of observations recorded by the French poison control and toxicovigilance centres from 1 January 2018 to 30 June 2023 (Request No 2023-AUTO-0160). Maisons-Alfort: ANSES, 28p.

ANSES (2024). Exposure to plant protection products containing non-approved active substances. Retrospective study of observations recorded by the French poison control and toxicovigilance centres, Phyt'attitude and the Western France animal and environmental poison control centre from 1 January 2017 to 31 December 2022. (Request No 2024-AUTO-0049). Maisons-Alfort: ANSES, 52p.

[6] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000018453651

[7] Ragoucy-Sengler C, Tracqui A, Chavonnet A, Daijardin JB, Simonetti M, Kintz P, Pileire B. Aldicarb poisoning. Hum Exp Toxicol. 2000;19(12):657-62.