

## When unauthorised plant protection products remain in circulation

The European Union and France have been working over the last 20 years to improve the safety of plant protection products (PPPs)<sup>1</sup> and reduce their use. Implementation of the active substance review programme has resulted in the elimination of many substances that are hazardous to humans and/or the environment. As a result, while around a thousand active substances were available on the market at the end of the 1980s [1], only 489 substances now have approval<sup>2</sup> in Europe. Not all of them are marketed in France, where 440 substances are found in products with marketing authorisations<sup>3</sup> (MAs).

In France, governmental actions to halve the volumes of PPPs used by 2025 were introduced in 2008: the Ecophyto II plan continues to pursue the objectives set and the actions implemented by the Ecophyto 2008 plan, which resulted from the Grenelle Environment Round Table. One of the measures taken in 2008 concerned the withdrawal from the market of PPPs containing non-approved active substances, as well as PPPs whose re-examination had shown an unacceptable risk for consumers or the environment, or those whose expected benefits were now outweighed by the risks. Lastly, certain PPPs containing active substances that were still approved but were not supported by any industrial company at the national level were also withdrawn [2]. Almost all of these substances were subsequently banned across Europe. Any of these PPPs still in the possession of distributors after the marketing deadline or of users after the use-by date were henceforth regarded as waste, with their holders being responsible for their disposal (Article L. 541-2 of the French Environmental Code). Campaigns to raise awareness among agricultural stakeholders were then launched by the Ministry of Agriculture to alert farmers and distributors to the risks and penalties of using prohibited substances.

However, the ban on the marketing and use of PPPs has not eliminated their fraudulent use. This may result from stockpiling of these products or illegal imports from border coun-

tries where they may still be on the market. In addition, some products may be used for malicious acts, especially on domestic or wild animals.

The possession and use of unauthorised PPPs is also an issue in the French overseas territories (DROM and COM), which have land and/or sea borders with other countries: in South America (French Guiana), the Caribbean (Guadeloupe and Martinique), Africa (Reunion Island) and French Polynesia. The French poison control and toxicovigilance centres (CAPTVs) had in particular pointed out the persistent use of paraquat, particularly in French Guiana, where the ban since 2007 has had little impact on the number of poisonings [3]. Similarly, several cases of poisoning by aldicarb, which was banned in 2007, have been reported in Guadeloupe [4]. A veterinary study carried out on the circumstances of deaths of necrophagous birds (raptors) in the French Pyrenees between 2005 and 2012 found that in 24% of cases the animals were poisoned, mainly by carbofuran (which was banned in Europe in 2008) and aldicarb (which was permanently banned in Europe in 2007) [5]. The question of the impact of bans and the origin of PPPs that have been banned in France (whether or not they are authorised in neighbouring countries) can be addressed through the poisonings recorded by the CAPTVs and veterinary PCCs (CAPVs) as part of their emergency telephone hotline service.

A study was therefore carried out based on calls recorded by the French CAPTVs and CAPVs over the period from 01/01/2012 to 31/12/2016. This study period was chosen in order to be able to verify whether these products were still present and/or in use a sufficient period after when the ban came into effect. This study set out to describe the spatial and temporal distribution of cases of exposure to certain unauthorised PPPs in France and the circumstances of their occurrence. The PPPs and substances targeted were those listed in the opinion of the Ministry of Agriculture and Fisheries published in the Official Journal on 28 March 2008 [2].

1. Plant protection products are designed to protect plants and plant products against pests.

2. In the European Union, active substances used in plant protection products must undergo periodic re-assessments of the risks to human health, the environment and non-target organisms. At the end of this process, the substance is either "re-approved" for a certain period of time or banned.

3. <https://ephy.anses.fr/>

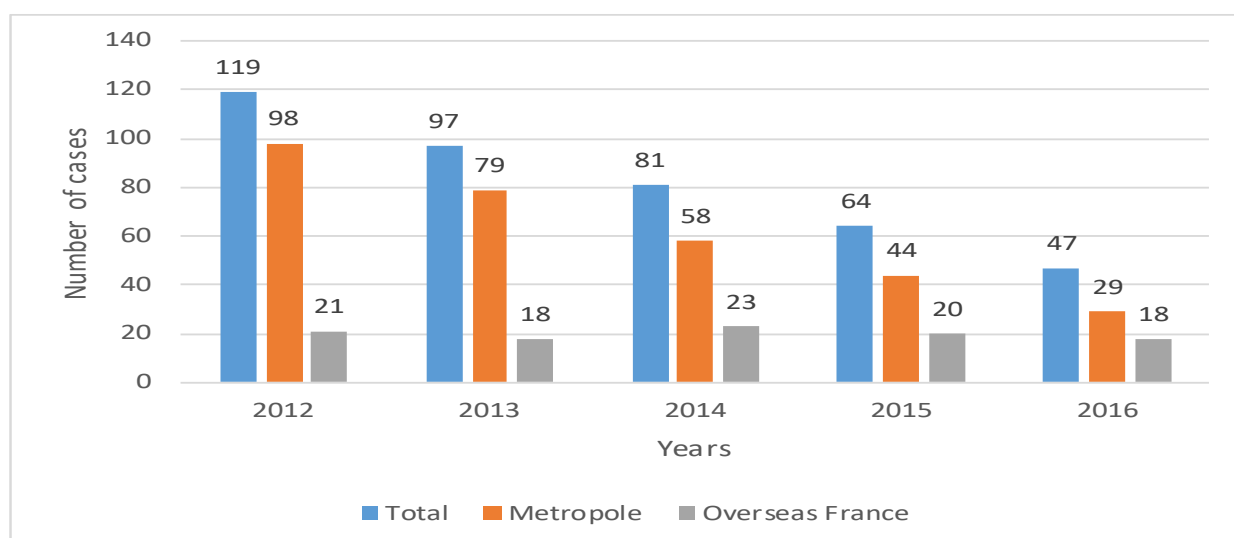
It should be noted, however, that some banned active substances may have benefited from exemptions for use when no alternatives were available, for short (maximum 120 days) renewable periods, thus making them available; it was not feasible to trace these exemptions and these substances were therefore included in the study. Furthermore, French Polynesia has a special status, as the local government has jurisdiction over regulation of pesticides<sup>4</sup> and European regulations do not apply there. The 14 Polynesian cases, including 11 cases of poisoning by PPPs containing paraquat (banned in 2015), were however included in this study.

Four hundred and eight cases of human exposure (symptomatic or not) were reported to the CAPTV network during the study period. The substances most often incriminated were dichlorvos, paraquat and aldicarb. There was a sharp decrease in the number of poisonings, from 119 cases in 2012 to 47 cases in 2016, except in the French overseas territories where the numbers have remained stable (Figures

1 and 2). Most of the 72 serious cases in this series (death or severe life-threatening symptoms) were associated with exposure to paraquat, aldicarb or carbofuran. The temporal distribution of these serious cases over the study period was fairly constant from year to year.

The cases of occupational exposure were due to the use of fungicides (anthraquinone, dinocap and carbendazim). The origin of the products was provided for 14.7% of the cases: half of these resulted from the storage of old products and the other half from illegal imports, mainly from Surinam for paraquat or from North Africa for dichlorvos.

Over the same period, 149 cases of animal exposure were reported to the CAPVs, mainly involving insecticides (87.9%) and, less frequently, herbicides (10.1%). The two substances most often incriminated were carbofuran and aldicarb, particularly in malicious acts. These misuses of carbamate insecticides seemed to persist until 2015. A downward trend can then be seen in 2016, which remains to be confirmed.

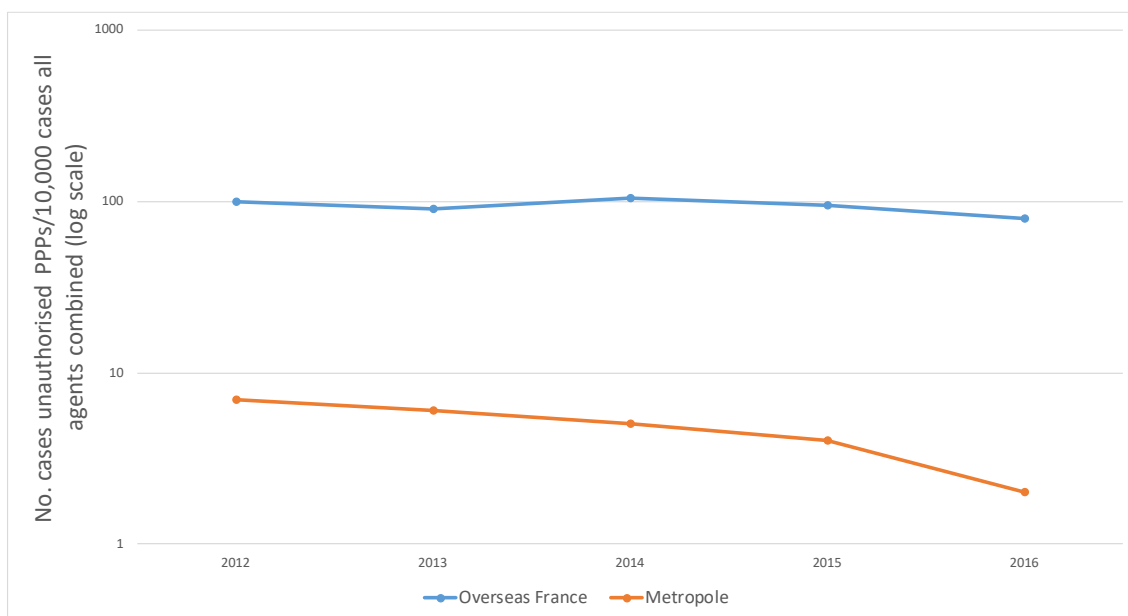


**Figure 1:** Annual change in the total number of cases associated with unauthorised PPPs in metropolitan France and in the overseas territories

The results of this study on the use or possession of certain PPPs prohibited since 2008 in France, through data collected by the PCCs over the period 2012-2016, suggest that their ban has had the logical consequence of reducing poisoning cases in metropolitan France; however, in the overseas territories, this collateral effect is less pronounced.

Among the unauthorised PPPs, the study highlighted the preponderance of insecticides from the carbamate class and the existence of illegal imports of substances such as dichlorvos or paraquat in French Guiana, which were responsible for fatal poisonings, as well as the use of certain fungicides in the professional agricultural sector.

4. The list of authorised compounds is governed by a local law of 2011 and is laid down by Ministerial Order. It was last updated on 24/04/2018.



**Figure 2:** Annual change in the number of cases associated with PPPs in relation to the number of cases from all agents combined, recorded by the PCCs, for the overseas territories and for metropolitan France.

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In France, anyone using or possessing unauthorised products is liable to severe penalties of up to seven years' imprisonment and a fine of up to €750,000. The use of unauthorised PPPs poses risks to humans, animals and the environment, and action must be taken to prevent the use of these products.

Distributing information on the withdrawal of authorisations and, more generally, on the rules applicable to the use of PPPs (e.g. the principle behind the MA, compliance with the

conditions of use) is probably a first step towards prevention. This information is widely available at present [6], but active communication campaigns could be considered, in particular through field players in contact with potential users (mainly agricultural professionals and healthcare professionals). However, the populations to be targeted should be clarified because the present study, mainly due to the method of data collection based solely on cases recorded by the PCCs, offers only a partial view of the circumstances in which exposures occur.

Eliminating stocks of PPPs following their withdrawal from the market, particularly in the overseas territories, is also one way of preventing the use of unauthorised products. Information campaigns should be conducted regularly and collection points for these non-usable PPPs should be established in the overseas *départements* and regions, following the example of what has been set up by ADIVALOR<sup>5</sup> in metropolitan France.

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[http://www.adivalor.fr/collectes/produits\\_phytosanitaires.html](http://www.adivalor.fr/collectes/produits_phytosanitaires.html)

## References

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[ANSES report on exposure to plant protection products containing unauthorised active substances in mainland France and the overseas territories – Retrospective study of observations recorded by French poison control and toxicovigilance centres and veterinary poison control centres \(2012-2016\)](#)