

## Re-authorisation of the herbicide terbuthylazine: conditions of authorisation adjusted following monitoring of surface water

While all herbicides in the triazine class were withdrawn from the French market in the early 2000s because of their propensity for long-term contamination of groundwater, terbuthylazine was made available on the market again in 2017, at a reduced dose and solely for controlling weeds in maize. In the year that followed, residues of this substance were regularly detected in watercourses, but without exceeding the risk thresholds for aquatic organisms or the threshold that means the water can no longer be used for drinking. Based on this observation and with the aim of preserving the quality of water resources, ANSES decided to restrict the conditions of use for products containing terbuthylazine, in order to limit the risk of water pollution.

In early 2020, Brittany's Regional Directorate for Food, Agriculture and Forestry notified ANSES that terbuthylazine residues were once again being found regularly in Brittany's watercourses. These observations coincided with the re-authorisation of this substance for controlling weeds in maize fields. At the same time, monitoring of the Champigny limestone aquifer in Seine-et-Marne by AquilBrie<sup>1</sup> revealed the presence of terbuthylazine for the first time since monitoring began in 2012. These two alerts led ANSES, as part of its phytopharmacovigilance mission, to analyse the situation at national level and the circumstances behind this contamination.

### A triazine herbicide back on the market

In France, the majority of terbuthylazine-based products were prohibited between 2001 and 2003 as part of a policy to restore water quality, following the widespread presence of this substance, and of triazines in general, in environmental water. However, in 2017, in application of the European regulations and taking account of a reduced dose, ANSES granted marketing authorisation to Syngenta, the applicant, for the product CALARIS, which contains a combination of terbuthylazine and mesotrione, solely for use controlling weeds<sup>2</sup> in maize. In particular, the product limits the growth of jimsonweed, a weed that is difficult to manage. Although it is a nuisance to farmers in the field, jimsonweed does not pose any risk of contaminating maize grain harvests, as its seeds are much smaller than those of maize, making them easy to sort at harvest time.



In 2018, 115.3 tonnes of terbuthylazine were sold, making it the 80<sup>th</sup> most traded substance, out of the 464 available on the French market. Between 2019 and 2021, sales rose slightly again: 125 tonnes in 2019 (putting it in 55<sup>th</sup> place out of 450), 178.4 tonnes in 2020 (52<sup>nd</sup> place out of 452) and 146.5 tonnes in 2021 (56<sup>th</sup> place out of 448). Brittany had the highest concentration of sales, with a quarter of the national total, followed by the Pays-de-la-Loire, Grand-Est and Nouvelle-Aquitaine regions, which each accounted for around 11-12% of national sales.

### Immediate contamination of watercourses, but at concentrations below the thresholds for concern

Despite the cessation of its use in 2003, terbuthylazine and its metabolites terbuthylazine-desethyl, hydroxyterbuthylazine and hydroxyterbuthylazine-2-hydroxy were found in watercourses (at residual background levels) at 1 to 6% of sampling points. This is due to their persistence in soil and run-off into watercourses; this long-term degradation is a property common to all substances in the triazine class.

In the year following its reuse, terbuthylazine and its metabolites were quantified more frequently, at up to 14% of sampling sites. At a regional level, this increase in the quantification frequency could be seen in the maize-growing parts of France (Brittany, Ile-de-France, Grand-Est).

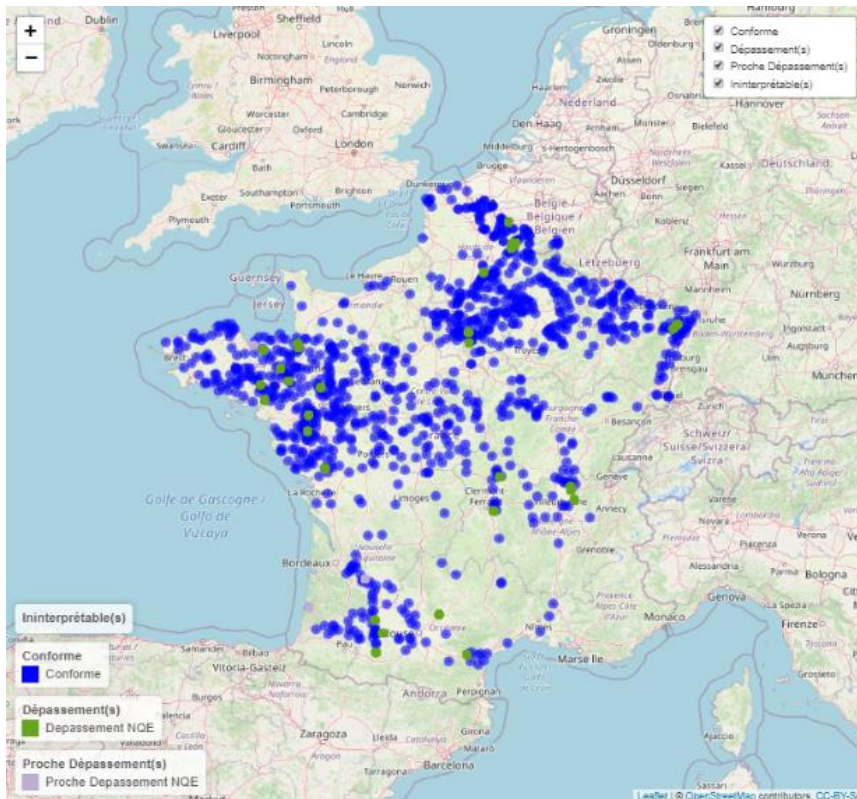
1. AquilBrie is an association bringing together all the stakeholders of the water in the Champigny limestone aquifer  
2. A weed is a plant that grows unintentionally in a field and competes with the crop.

### Everything you need to know about water monitoring<sup>3</sup>

Environmental water refers to both surface water (rivers, streams, lakes, etc.) and groundwater (water tables). It is monitored by water agencies under the European Water Framework Directive. Some environmental water is used to produce tap water, also known as drinking water or "water intended for human consumption". Environmental water intended for the production of drinking water, and drinking water itself, are also monitored by the regional health agencies.

The results of this monitoring are generally expressed in terms of annual frequencies (of quantification, of thresholds exceeded, etc.). For example, the quantification frequency of a given substance for a given year corresponds to the number of sampling sites where the substance was quantified at least once during the year, in relation to the total number of sampling sites where the substance was screened for during the year.

The threshold values for these three types of water differ: in surface water, there is an ecotoxicity threshold value for organisms living there, which varies depending on the substance. In groundwater and drinking water, this value is 0.1 µg/L. The quality limit for raw water of any origin used for the production of drinking water, excluding bottled spring water, is a single value of 2 µg/L per individual pesticide substance, including relevant metabolites.



**Figure 1** : Distribution of surface water monitoring points where terbuthylazine was quantified at least once, and monitoring points where the environmental quality standard for terbuthylazine was exceeded, in metropolitan France, for 2018

### 3. [Anses - Pesticides dans l'eau du robinet](#)