



D A T A L A B

Overview

General Commission for Sustainable Development

Plant protection products reduction plan and removal of glyphosate: state of play of sales and purchases in France

APRIL 2019

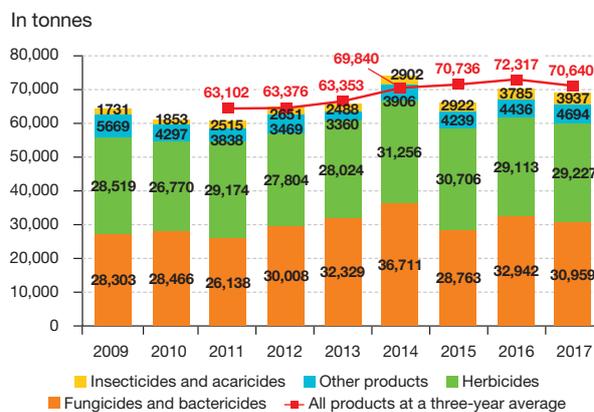
Launched in 2008 and revised twice since, the Ecophyto plan aims to reduce the uses, risks, and impacts of plant protection products. Since June 2018, the Government has been committed to no longer using glyphosate by 2020 in cases for which alternatives already exist, and by 2022 for any remaining uses. An inventory of sales and purchases of plant protection products and glyphosate in France is based on data from the National Data Bank of Sales made by Distributors of plant protection products (French: BNV-D). The BNV-D compiles all sales of plant protection products made by distributors (see methodology). The data in this database, as well as the published results, concern the quantities of active substances contained in plant protection products and do not take additives into account. The quantities of active substances sold or purchased do not necessarily reflect the place, the quantity applied, or the period of application of the treatments (possibility of building stocks, buyer's link to the postal code of their place of business).

SALES OF ACTIVE SUBSTANCES AT NATIONAL LEVEL

In 2017, the total quantity of active substances sold in France amounted to 71,200 tonnes (t), of which 5% concerned products "authorised for use in gardens" (French: EAJ) - (see methodology). 20% of the total sold are substances of potential concern for human health (chart 1).

In order to spread out the climate and storage effects on farms, it is best to calculate a rolling average over three years. As a result, the average quantity of active substances sold increased by 12% between 2009-2010-2011 and 2015-2016-2017.

Chart 1: Evolution of sales of active substances by type of use



Note: other products = nematocides, rodenticides, chemical mediators, molluscicides, regulators, repellents, talpicides and others. Seed treatments were only included in the BNV-D in 2012 and represent 1.6% of the active substances sold in 2013.

Field: All of France.

Source: BNV-D, sales data in the INSEE common code for distributors, extracted 13 November 2018. Processing: SDES, 2019

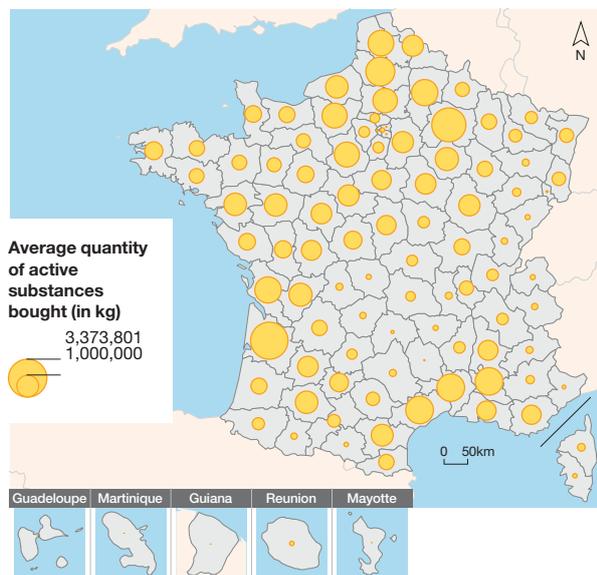
In trend, the data shows an overall increase in each type of use of active substances. The peak of sales in 2014 probably corresponds to the anticipation of purchases linked to the increase in the tax on non-point pollution for 2015. Between 2009 and 2017, sales of insecticides (including acaricides) multiplied by 2.3; fungicides (including bactericides) increased by 9.4%, while herbicides increased by 2.5%. Only sales of other products, such as nematocides or rodenticides, decreased by 17%. Over the same period, the utilised agricultural area (UAA) decreased by 1%, while arable land and permanent crops increased by 0.4%.

Glyphosate removal plan: state of play of sales and purchases in France

PURCHASES OF ACTIVE SUBSTANCES BY DEPARTMENT

Starting in 2015, the quantities of active substances sold are reliably available at the end-user postal code level, which allows for a sharper exploitation of BNV-D data. With regard to purchases for agricultural use, 21 departments account for more than half over the 2015-2017 period (Map 1). With more than 3400t, the department of Gironde accounts for the largest quantity of plant protection products purchased. It is followed by the departments of Marne (2800t), Somme (2000t) and Gard (1900t). Although purchasing data does not directly reflect utilisation data, it appears that the nature of the crops and the agricultural area that characterise these departments are the main determining factors. Marne is therefore the department that, based on the latest agricultural census of 2010, had the largest utilised agricultural area (JAA) with nearly 555,000 hectares (ha), which is more than double the national average (271,000 ha). With 465,300 ha of UAA, Somme ranks eighth in the country but is the leading potato producing department. As for Gironde and Gard, these departments are among those with the highest permanent crop areas (122,500 and 66,000 ha, respectively).

Map 1: purchases of active substances, over a three-year average by department, over the 2015-2017 period



Note: the quantities of active substances recorded in the form of a sales report, as well as purchases made abroad, are not taken into account (68,800 tonnes taken into account out of the 71,200 tonnes sold in total).

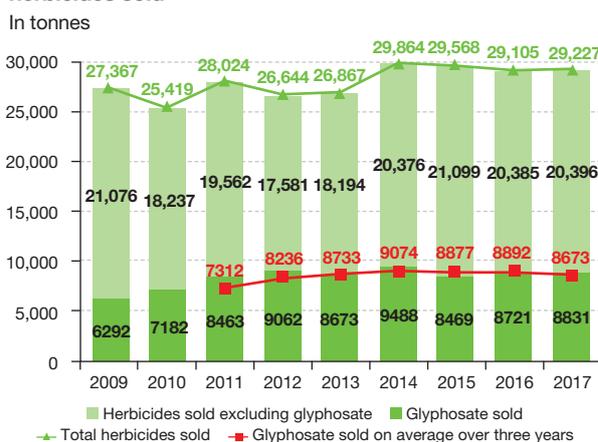
Source: BNV-D, 2015, 2016 and 2017 data related to the buyer postal code, extracted 13 November 2018. Processing: SDES, 2019

GLYPHOSATE: THE MOST WIDELY USED HERBICIDE

Glyphosate is part of the amino phosphonates or organophosphorus family. It is a systemic total leaf weed killer, i.e. a non-selective herbicide absorbed by the leaves and with a comprehensive action. The molecule and/or the products that contain it are classified as toxic to aquatic organisms, with long-term effects. Given the uncertainties regarding the harmfulness of this substance, and in particular its carcinogenic nature, France committed to removing glyphosate by 2020 for most uses, then for all uses within five years of its commitment (2022), taking care not to leave farmers without a solution.

Glyphosate is the most widely used herbicide in the world with more than 800,000t sold in 2014. France uses 1% of the global total (8800t) - (chart 2). After sulphur – used in conventional and organic agriculture (12,318t) – it is the second most used active substance in France, with 12% of total sales over the 2015-2017 period. Over the 2009-2017 period, it was also the nation's top-selling herbicide among the 119 herbicide active substances.

Chart 2: changes in the quantity of glyphosate and herbicides sold



Field: All of France.

Source: BNV-D, sales data in the INSEE common code for distributors, extracted 13 November 2018. Processing: SDES, 2019

Over the 2009-2017 period, after a peak in sales in 2014, probably due to anticipated purchases linked to the increase in the non-point source pollution tax, herbicide sales decreased by 2% between 2014 and 2017. Whereas three-year average herbicide sales increased by 9% between 2009-2011 and 2015-2017 (the longest available period), glyphosate sales increased by 19%. The share of glyphosate sales in total herbicide sales increased between 2009 (23%) and 2012 (34%) and then stabilised at 30% in 2016 and 2017. The proportionally increased use of glyphosate can be explained by a more generalised establishment of plant cover crops as intercrops (to limit water pollution by nitrates) that should be removed before sowing main crops, or by the increase in conservation agriculture (to preserve soil quality).

THE EFFECTS OF THE LABBÉ LAW

In 2017, 245 plant protection products contained glyphosate, of which 106 had the EAJ label. These represent 1200t, or 14% of total glyphosate sales. Over the 2009-2017 period, after a peak in 2013, sales decreased by 42% between 2013 and 2017, returning to the level of the beginning of the period.

The "LABBÉ" law of 6 February 2014 regulates the use of plant protection products throughout the national territory. Since 1st January 2017, it has banned many uses of plant protection products for all public entities (the State, local authorities and their groupings, public institutions). This ban concerns the maintenance of green spaces, roads, walks and forests, open or accessible to the public. Some areas are not covered by this law, including most cemeteries, as well as mineralised sports fields. For individuals, this ban has been effective since 1st January 2019. All plant protection products are concerned, apart from biocontrol products, organic products as well as "low risk" qualified products, labelled EAJ.

Uses of plant protection products by the SNCF

In addition to communities, home gardeners and farmers, road companies and the SNCF also use glyphosate. In 2017, plant maintenance represented an expenditure of approximately 125 million euros per year for the SNCF, of which 25 million euros for weeding the tracks by phytosanitary treatment. Keeping plants in check along the national rail network is carried out on approximately 95,000 ha, of which 34,000 ha require a total herbicide. The vegetated lands attached to the tracks are maintained mechanically, except for the maintenance of the regrowth of trees and shrubs, which requires the use of selective herbicides. In 2017, the SNCF bought 67t of herbicides, compared to 83t in 2016. Glyphosate represented 38.5t thereof (compared to 40t in 2016), representing less than 0.4% of total glyphosate sales in France.

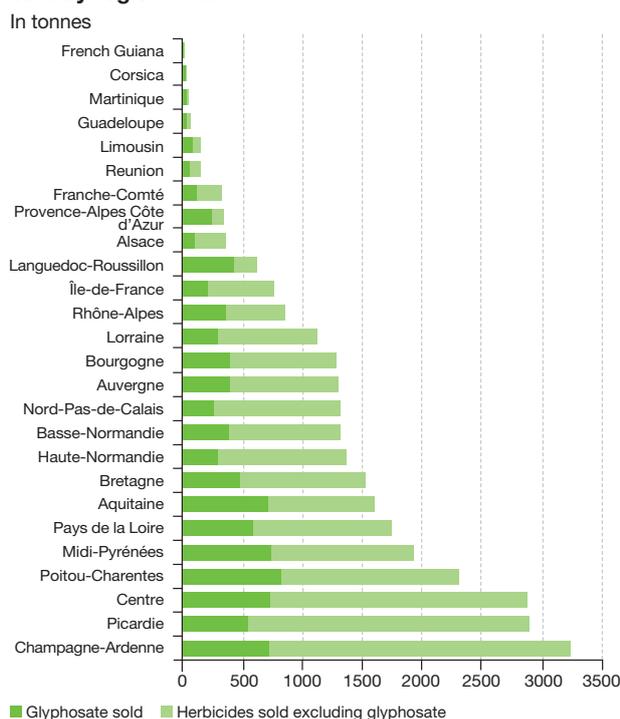
Source: SNCF Réseau

SALES AND PURCHASES OF HERBICIDES AT THE SUB-NATIONAL LEVEL

An analysis of the total quantity of herbicides sold in 2017, excluding EAJ products, shows that the (former) Champagne-Ardenne, Picardie, Centre, Poitou-Charentes and Midi-Pyrénées regions are the areas with the highest sales of herbicides (chart 3).

This data should obviously be linked to agricultural areas. The highest herbicide sales are in Champagne-Ardenne (3200t) for 1.5 million ha of UAA, or 2.09kg per ha. In Midi-Pyrénées, with nearly 2.3 million ha of UAA, 1900t of herbicides were sold, or 0.83kg per ha. The share of glyphosate among herbicides sold varies from region to region. It is 18% in Picardie, while it amounts to more than 65% in Languedoc-Roussillon, Provence-Alpes Côte d'Azur, Corsica and Guyana.

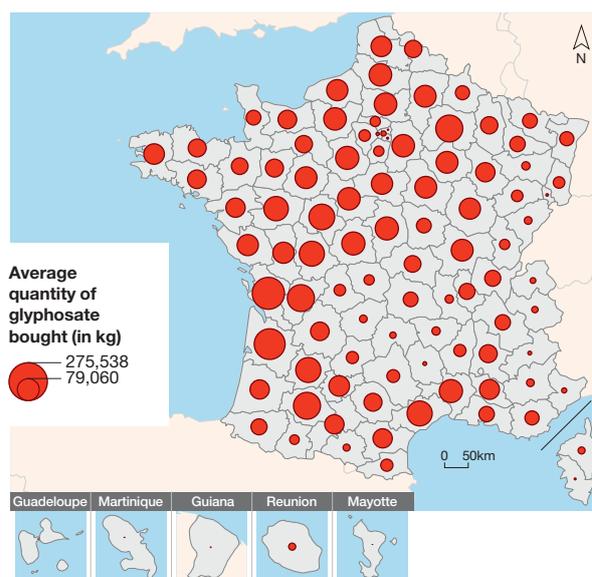
Chart 3: quantity of herbicides (including glyphosate) sold by region in 2017



Source: BNV-D, sales data in the INSEE common code for distributors, extracted 13 November 2018. Processing: SDES, 2019

A quarter of departments records, on average, more than half of all glyphosate purchases, from 2015 to 2017 (map 2). In the absence of actual utilisation data that would be interesting to study, we can only speak of potential pressure indications. In fact, over the same period, the national average of purchases for the UAA is 0.30kg of glyphosate purchased per ha (kg/ha). The department with the highest quantity of glyphosate purchased is Charente-Maritime, with 276t or 0.64kg/ha. At the hectare level, it is in Gironde that the most glyphosate is bought (262t, or 1.08kg/ha). Then, with more than 0.80kg/ha, Vaucluse (106t), Hérault (168t), Gard (144t) and Var (58t). The lowest average purchases are in departments composed of less treated UAA, such as permanent pasture.

Map 2: purchases of glyphosate, over a three-year average by department, over the 2015-2017 period

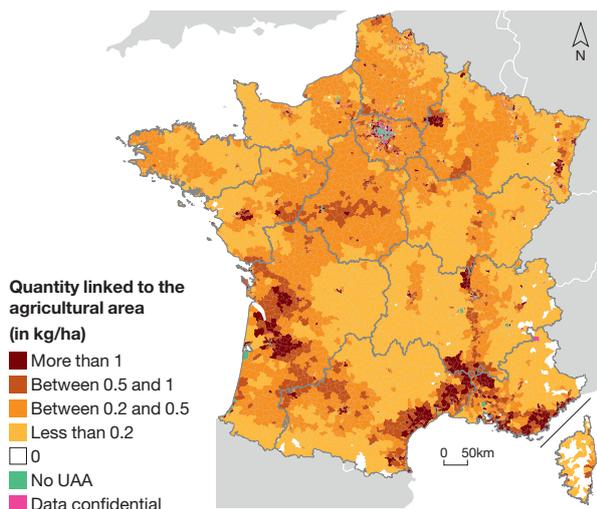


Note: excluding postal codes with a number of farms below or equal to 5. Source: BNV-D, 2015, 2016 and 2017 data related to the buyer postal code, extracted 13 November 2018. Processing: SDES, 2019

The BNV-D gives us a global and precise knowledge of glyphosate purchases "per postal code of the buyer". For agricultural uses, the buyer is required to declare the postal code of their head office (billing location). This information, however, does not make it possible to know the place or the time of application of the purchased products specifically. The exploited plots may actually be located in municipalities with another postal code and the products may be stored.

The data below (*map 3*) shows the average annual purchases of non-EAJ glyphosate from 2015 to 2017 by buyer postal code, linked to the UAA of holdings with a head office in the area of the postal code concerned, minus the organic farming agricultural area (in conversion and certified).

Map 3: purchase quantity of non-EAJ glyphosate, distributed to the UAA excluding organic farming, over the 2015-2017 period



Note: excluding postal codes with a number of farms below or equal to 5.
Sources: BNV-D, 2015, 2016 and 2017 data related to the buyer postal code, extracted 13 November 2018; SSP, Agricultural Census, 2010; Bio Agency. Processing: SDES, 2019

USES OF GLYPHOSATE IN AGRICULTURE

According to the latest phytosanitary surveys in field crops, arboriculture, market gardening and viticulture, 45% of herbicide treatments on peach tree plots contain glyphosate. This rate is 42% for vines and 4% for soft wheat.

Based on these surveys, which are only a fragmented base of knowledge on actual uses, the French National Institute for Agricultural Research (French: INRA) published a report on alternatives to glyphosate in November 2017. It provides a statement of the amounts of glyphosate applied per hectare

of treated area and crop. It states that these quantities vary a lot from one crop to another: between 400 and 1000g/ha for fruit crops and vines, between 100 and 250g/ha for field crops and between 2 and 100g/ha for vegetable crops and sugar beets.

It is important to note, however, that these figures do not always include intercropped glyphosate treatments, such as the destruction of stubble and catch crops (French: CIPAN, for nitrate-fixing intermediate crops), which are the major field crop uses.

In the same report, alternatives to glyphosate are highlighted while identifying the difficulties of implementing these alternatives depending on the type of crops or cultural practices, or even situations of technical impasses in rare cases.

METHODOLOGY

Plant protection products can be sold under two broad categories of use depending on whether they have the "authorised for use in gardens" (EAJ) designation or not. Only persons with professional status who have a certificate of competence (Certiphyto) can purchase non-EAJ products.

In the BNV-D, sales data in the INSEE common code of distributors has been available since 2009, and that linked to the postal code of buyers has been available and reliable since 2015. According to the Water Act of 30 December 2006, sales reports contain information on sales of plant protection products, by marketing authorisation (MA), for every one of a distributor's establishments. The sales records were introduced by Decree 2014-1135 of 6 October 2014 and also contain the postal code of the buyer. Statements related to the buyer's postal code are only required when distributors sell to business users (see the "methodology" tab in the publication data file).

FIND OUT MORE

- BNV-D on the Eau France website: www.data.eaufrance.fr;
- *Environment and agriculture - key figures - 2018 edition* (Environnement et agriculture - chiffres clés - édition 2018), CGDD/SDES, *Datalab*, June 2018, 122 p.
- *Pesticides: changes in sales, uses and presence in waterways since 2009* (Pesticides : évolution des ventes, des usages et de la présence dans les cours d'eau depuis 2009), CGDD/SDES, *Datalab Essentiel*, March 2017, 4 p.
- *Uses and alternatives to glyphosate in French agriculture* (Reboud X. et al, 2017. Usages et alternatives au glyphosate dans l'agriculture française). INRA report to the referral Ref. TR507024, 85 p.

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Copyright: April 2019
ISSN : 2557-8510 (online)
2555-7572 (print)

Printer: Bialec, Nancy (France), using paper from sustainably managed forests

Publication Director: Sylvain Moreau
Chief Editor: Lionel Janin
Editorial Coordination: Céline Carrière and Florence Patin
Layout and Production: Agence Efil, Tours
Mapping: Frédérique Janvier (SDES), Solange Vénus (Magellium)
Translation: Solten France sarl

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