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► **To cite this version:**

Bleuen Merrer, François Dedieu, Céline Pessis, Christophe Bonneuil. Safer Than in the USA? The Reception of Silent Spring in France and the Difficulties in Achieving European Regulations on Pesticides, 1962–1976. *Global Environment*, 2024, 17 (2), pp.348-377. 10.3828/whpge.63837646622494 . hal-04573304

**HAL Id: hal-04573304**

**<https://hal.science/hal-04573304v1>**

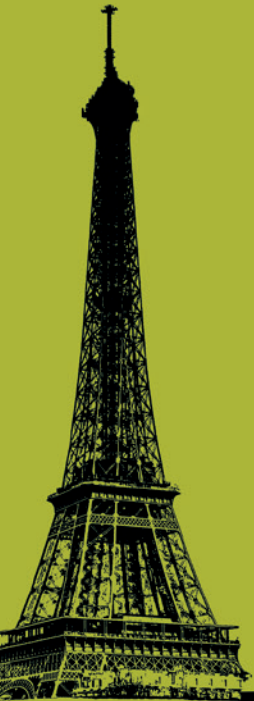
Submitted on 29 Jul 2024

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# **Safer than in the USA? The Reception of *Silent Spring* in France and the Difficulties in Achieving European Regulations on Pesticides, 1962–1976**

**Bleuen Merrer, François Dedieu, Céline Pessis and Christophe Bonneuil**



**Global Environment 17 (2024): 348–377**  
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**doi: 10.3828/whpge.63837646622494**

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From having been a net food importer before World War Two, France rapidly became a leading European agricultural producer and the world's second largest agricultural exporter – a model fueled by extensive use of pesticides. How, then, was the French reception of Rachel Carson's work on the association of pesticides with health issues and environmental damage? This article constructed a corpus of 288 publications debating *Silent Spring* from 1962 to 1975 to map the trajectory of the controversy. We also mobilise rich archives collections to document how key actors and institutions endeavoured to control the fire sparked by *Printemps silencieux* and slow down the progress of new Europe-wide regulations. Lastly, we illuminate how, by 1969–1976, export imperatives and associated market-harmonisation concerns were factors as important as environment and health concerns for explaining the ban of a few molecules and the first 1976 EEC Directive regulating residues levels.

**keywords:** *Rachel Carson, European Economic Community, pesticides, organic agriculture*

A net food importer before World War Two, France experienced a rapid transformation of its agriculture in the post-war decades, thereby becoming the leading European agricultural producer and the second largest agricultural exporter in the world. Key to this shift to a high-input, high-production model, France put around 5,000 commercial pesticides on the market between 1944 and 1967, and became the world's second largest market for agrochemicals by the end of the twentieth century.<sup>1</sup>

This expansion of the pesticide market and the large-scale dissemination of new toxic synthetic molecules into farm workers' bodies, cattle's physiology, consumers' blood and ecosystems has not

<sup>1</sup> V. Bivar, 'Agricultural high modernism and land reform in postwar France', *Agricultural History* **93** (4) (2019): 636–655; N. Jas, 'Corporate systemic ascendancy: Perspectives from the pesticide industry in postwar France', in S. Angeli Aguiton et al. (eds), *Pervasive Powers: The Politics of Corporate Authority*, (New York: Routledge, 2022), pp. 58–81, 62.

gone unnoticed or remained uncontested. Both before and after Rachel Carson's *Silent Spring*, and through voices beyond those of the first-world white middle class, a vast scholarship has documented warnings, socio-ecological struggles and regulatory battles. Beyond the traditional story of scientific warnings leading to political mobilisation and then to regulatory changes for the better, recent work has illuminated strategies to govern controversies and to maintain social worlds and second nature ecologies in which pesticides were deemed as indispensable factors of production.<sup>2</sup>

In France, scholars have shown that controversies regarding the health and environmental impacts of new synthetic pesticides – such as DDT, lindane and parathion – had already developed before the French translation of *Silent Spring* was published in April 1963. In the period 1947–1960, reports of workers being poisoned in colonised Algeria as well as in the metropolis, of bee populations collapsing and of game resources being threatened by the spraying of pesticides in the countryside regularly appeared in medical congresses, hunting and naturalist journals, beekeeping publications and natural

<sup>2</sup> Among an ocean of works, see: J.R. Bertomeu-Sánchez, 'Introduction. Pesticides: Past and present', *HoST – Journal of History of Science and Technology* **13** (1) (2019): 1–27; D. Kinkela, *DDT and the American Century: Global Health, Environmental Politics, and the Pesticide That Changed the World* (UNC Press, 2011); C. Montrie, *The Myth of Silent Spring: Rethinking the Origins of American Environmentalism* (Berkeley: University of California Press, 2018); H. Rothstein, A. Irwin, S. Yearley and E. Mccarthy, 'Regulatory science, Europeanization, and the control of agrochemicals', *Technology & Human Values* **24** (2) (1999): 241–264; J.F.M. Clark, 'Pesticides, pollution and the UK's silent spring, 1963–1964: Poison in the Garden of England', *Notes and Records: The Royal Society Journal of the History of Science* **71** (3) (2017): 297–327; D.J.L. Harding (ed.), *Britain Since 'Silent Spring': An Update on the Ecological Effects of Agricultural Pesticides in the UK* (London: Institute of Biology, 1988); F.R. Davis, *Banned: A History of Pesticides and the Science of Toxicology* (New Haven, CT: Yale University Press, 2014); K.F. Hünemörder, *Die Frühgeschichte der globalen Umweltkrise und die Formierung der deutschen Umweltpolitik, 1950–1973* (Stuttgart: Franz Steiner Verlag, 2004); F. Dedieu, J.-N. Jouzel and G. Prete, 'Governing by ignoring: The production and the function of the under-reporting of farm-workers' pesticide poisoning in French and Californian regulations', in *Routledge International Handbook of Ignorance Studies* (London: Routledge, 2015), pp. 297–307.

food journals.<sup>3</sup> Nathalie Jas' extensive work over the past fifteen years has furthermore shown that pesticide regulation remained almost unchanged after 1962, and she has analysed the continuous establishment and maintenance of a 'corporate systemic ascendancy' of the pesticide industry to make pesticides so central in French agricultural practices.<sup>4</sup> This may however lead to the conclusion that the reception of Rachel Carson's *Silent Spring* in France may have been a non-event. Anna Trespeuch-Berthelot, surveying how US environmental whistle-blowers' books were received in the French media from 1948 to 1973, concludes that Carson's *Printemps silencieux* – as the French title reads – was preaching in the desert in 1960s' France, and that it became rediscovered only later as a standard reference in the 1970s with the rise of French environmental movements.<sup>5</sup> Clearly, overestimating *Printemps silencieux*'s impact on the French public space, and on the dominant socio-technical trajectory that French agriculture has been assigned, might lead to irenic stories of 'green enlightenment' and obscure the controversies that had already taken place in the years 1945–1962. But on the other hand, considering the 1960s as a 'desert' for environmental warnings and struggles, which only blossomed after 1968, also reproduces a biased narrative, enshrined in the writings of sociologists since Ulrich Beck's risk society but also prevalent in historians' standard account of the 'Trente glorieuses' ('Thirty Glorious Years', referring to the 1944–1973 period of rapid growth). This narrative tends to cast pre-1968 France as a unanimous modernising society that only entered (ecologically) reflexive modernity a few dec-

<sup>3</sup> R. Fourche, *Contribution à l'histoire de la protection phytosanitaire dans l'agriculture française (1880–1970)* (Ph.D. Thesis, Université Lumière Lyon 2, 2004); N. Jas, 'Public health and pesticide regulation in France before and after *Silent Spring*', *History and Technology* **23** (4) (2007): 369–388; L. Humbert, 'Protéger les abeilles et moderniser l'agriculture', in M. Lyautey, L. Humbert and C. Bonneuil (eds), *Histoire des modernisations agricoles au XXe siècle*, pp. 249–263 (Rennes: Presses Universitaires de Rennes, 2021). The habilitation thesis by Nathalie Jas, the leading specialist on the subject, is eagerly awaited.

<sup>4</sup> Jas, 'Corporate systemic ascendancy'.

<sup>5</sup> A. Trespeuch-Berthelot, 'La réception des ouvrages d'alerte environnementale dans les médias français (1948–1973)', *Le temps des médias* **25** (2015): 104–119.

ades later. Such a ‘once was blind but now can see’ narrative – which obscures both the intensity of some pre-1968 socio-ecological struggles and less linear developments in the public trajectory of environmental issues – has been revisited and challenged by environmental historians in the last decade. Without calling into question the growth of environmental movements and the placing of various issues on the agenda in the 1970s, a recent historiography that is more attentive to the contestations and controversies of the 1950s and 1960s may help us to revisit the impact of *Silent Spring* in France.<sup>67</sup>

As compared with the vast amount of scholarly works conducted elsewhere in the world, the reception of *Silent Spring* in France and its impact on the rise of the environmental movement and on pesticide regulation remain insufficiently documented. More work is necessary in order to insert a French case study into a more comparative and connected environmental history of the global trajectory of the use, debate and regulation of pesticides. This article undertakes to document the dynamics of the reception of Carson’s warnings in the French public space and its impact on pesticide regulation. To do so, we constructed a corpus of publications (N=292) discussing and quoting *Silent Spring* or *Printemps silencieux* from 1962 to 1975 (first section). We also mobilise rich archives collections to document how key actors and institutions at the Ministry of Agriculture en-

<sup>6</sup> C. Pessis, S. Topçu and C. Bonneuil (eds), *Une autre histoire des ‘Trente Glorieuses’* (Paris: La Découverte, 2013); S. Frioux (ed.), *Une France en transition: Urbanisation, risques environnementaux et horizon écologique dans le second XXe siècle* (Paris: Champ Vallon, 2021).

<sup>7</sup> On pre-1968 controversies around agricultural socio-technical choices, see Jas, ‘Public Health and Pesticide Regulation’, 2007; Humbert, ‘Protéger les abeilles’; C. Pessis, ‘De la “croisade pour l’humus” à l’ “agriculture biologique” : Alertes savantes et mouvements paysans face à la dégradation des sols (1948–1958)’, in M. Lyautey, L. Humbert and C. Bonneuil (eds), *Histoire des modernisations agricoles au XXe siècle* (Rennes: Presses Universitaires de Rennes, 2021), pp. 233–248; C. Pessis, ‘Les leçons de l’agriculture américaine ? Motorisation et souci du sol sous la IVe République’, *Le Mouvement Social* 277 (4) (2021): 67–82; F. Thomas and C. Bonneuil, ‘L’introduction du maïs hybride en France : une technologie fordiste’, in C. Bonneuil et al., *Sciences, chercheurs et agriculture* (Paris: L’Harmattan, 2008), pp. 155–180.

deavoured to control the fire sparked by *Printemps silencieux*, maintain the pre-Carson domestic pesticide regulation regime (section 2) and slow down the progress of new Europe-wide regulations (section 3). We also illuminate how, by 1969–1976, export imperatives and associated market harmonisation concerns were factors as important as environment and health concerns to explain the ban of a few molecules and the first Council Directive (76/895/EEC) which set maximum pesticide residue levels in fruit and vegetables in 1976.

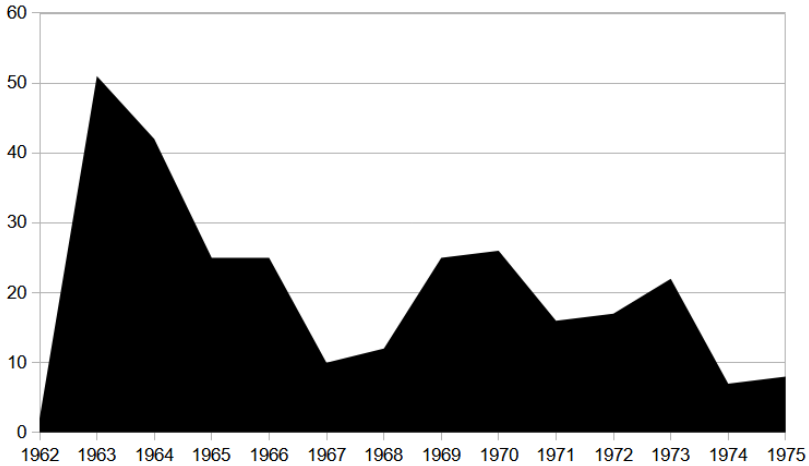
## **1. A ‘Desert of Indifference’? Towards a More Systematic Analysis of the Reception of Silent Spring in France**

In this section, we rely on a corpus of books or articles published between 1962 and 1975 that mention and discuss *Silent Spring* (or its French edition published in April 1963). This corpus was built up in 2020–2023 by systematically collecting references in a multiplicity of databases, books, newspapers, journals or archives:

- (i) keyword queries in electronic databases (Google Books, Google scholar, French National Library Catalog’s Gallica collection, Retronews, Euronews, Persée);
- (ii) press clippings gathered by key actors of the French pesticide controversy and kept in archive collections (Plant Protection Service collections now kept at the French National Archives, Roger Heim collections kept at the National Museum of Natural History), etc.;
- (iii) a scanning of a wide selection of books published in French on environmental and agricultural issues;
- (iv) complete scanning of all 1962–1975 issues of key periodicals to ensure a continuous coverage in key selected arenas: the French Academy of Agriculture (*Comptes-Rendus de l’Académie d’Agriculture de France*), a weekly mainstream agriculture journal (*La France Agricole*), an organic farming journal (*Nature et Progrès*), a natural food journal (*La Vie Claire*), a food control inspectors’ journal (*Qualité, Loyauté, Santé Française*), a key naturalist journal from the Société Nationale de Protection de la Nature (*La terre et la vie*), a major daily national newspaper (*Le Monde*) and a daily regional newspaper (*Sud-Ouest*)<sup>8</sup>.

<sup>8</sup> Among these periodicals and journals, the following were not available in digitised form and had to be manually scanned in printed form throughout 1962–

**Figure 1. Reviews and mentions of Rachel Carson's *Silent Spring* / *Printemps Silencieux* in France, 1962–1975 (N=292).**



A total of 292 items have been collated. The coverage is distributed over time as displayed in Figure 1.

The curve in figure 1 indicates a very lively reception from 1963 onwards: several dozen articles appeared in the first few months following the publication of *Printemps Silencieux* in France. However, the intensity of presence of Rachel Carson's book in public arenas and, consequently, of the controversies on the environmental and sanitary dangers of pesticides, seems to have diminished in the French public space by 1966–1968. Then, in 1969–1973, we document a new rise in the number of mentions of Carson's work. We can therefore distinguish three periods in the trajectory of 'pesticides' as a public problem in the French public arena. A time of reception and lively controversy (1962–1965), a time of lesser in-

1975: *La France Agricole*; *La Vie Claire*; *Nature et Progrès*; *Qualité, Loyauté, Santé Française*.



tensity (1966–1968) and a time of re-intensification (1969–1973).

Let us explore the first of these three phases, one of immediate reception and intense debate. If *Silent Spring* immediately attracted media coverage, it was because the publication of its translation in April 1963 was preceded by a reputation: *Silent Spring* was the book that had triggered intense polemics in the United States. Given the extent to which the book had been received in the English-speaking public space since its release, a few articles appeared at the end of 1962 – i.e. before the publication of the French edition. As early as November 1962, large excerpts from *Silent Spring* were published in the popular science magazine *Science et vie* to present the ‘vast trial that is opening before the American nation’.<sup>9</sup> A condensed article from *Time* also appeared in the French *Reader’s Digest Selection* in February 1963:

Without the help of chemicals, the spread of disease in humans cannot be stopped ... Why this outcry? Despite these undisputed advantages, there is some unease about the subject. Rachel Carson’s *Silent Spring*, published in 1962, is the source of this unease. In this book, the author asks a serious question: by using chemical pesticides indiscriminately, are we not poisoning our natural environment, causing the disappearance of animal species and triggering undesirable genetic changes in future generations?<sup>10</sup>

On this prepared ground, it is not surprising to find in our corpus several dozen items from the first months following the publication of *Printemps Silencieux* in April 1963. On 27 April, *Paris Match*, the most widely read French weekly newspaper, devoted six pages to the book.<sup>11</sup>

In our corpus, we found 53 books or newspaper articles mentioning *Silent Spring* in 1962–1963 (45 of which were very positive). This intense reception is explained by the ground that had already been prepared by warnings and criticism of the environmental and

<sup>9</sup> C. Passerelle, ‘Les biologistes dénoncent une menace pour l’humanité. Le drame des insecticides’, *Sciences et vie* (Nov. 1962): 74–78.

<sup>10</sup> J. Strohm and C. Ganschow, ‘Que penser des pesticides’, *Sélection du Reader’s Digest* (December 1963): 130–138. Translated back to English by the authors.

<sup>11</sup> ‘La nature meurt empoisonnée. En exclusivité les faits essentiels du livre qui fera peur aux Français’, *Paris Match* **733** (27 April 1963): 14–17.

health impacts of agrochemicals, voiced by a wide variety of players since the post-war period. This includes protests by beekeepers in the face of the massive death of their bees, work by medical experts on occupational health issues for farmers and agricultural workers, alerts by naturalists and criticisms from hygienist medical circles.<sup>12</sup> Since the late 1950s, Charles de Gaulle's government had allied with the 'Jeunes Agriculteurs' (young farmers) organisations<sup>13</sup> to speed up an agricultural modernisation that inserted agriculture into the industrial economy with the help of land consolidation, fertilisers, pesticides, machinery and fossil fuels. While a decade earlier, high concerns about toxicity of pesticides or about the effects of chemical fertilisers and of tractors on soil-biological functioning could be expressed in agricultural journals and bulletins of the chambers of agriculture, by 1960, the high-input/high-output model had become hegemonic and most actors involved in the local and national governance of agriculture were aligned.<sup>14</sup> In this pre-established context, it is not surprising that few local chambers of agriculture echoed Carson's work and that *La France Agricole*, the most widely read agricultural weekly, did not mention her name or work in a single article between 1962 and 1975. This newspaper, replete with pesticide advertisements and technical articles testing their agronomic effectiveness on various crops, carefully silenced *Silent Spring's* warning and only mentioned the debate much later, in an evasive manner, to argue in 1969 that 'farmers are not "poisoners"'.<sup>15</sup>

<sup>12</sup> C. Pessis, 'Histoire des sols vivants. Genèse, projets et oublis d'une catégorie actuelle', *Revue d'anthropologie des connaissances* 14 (4) (2020); C. Pessis, 'De la croisade pour l'humus'; Jas, 'Public health and pesticide regulation'; Humbert, 'Protéger les abeilles'; A. Birre, 'Les pesticides font de nos paysans des cultivateurs de la mort', *Points de Vue – Images du Monde* (Dec. 1955): 16–17.

<sup>13</sup> P. Muller, *Le technocrate et le paysan: essai sur la politique française de modernisation de l'agriculture de 1945 à nos jours* (Paris: Éditions de l'Atelier, 1984).

<sup>14</sup> On the waning of environmental concerns in the agricultural sector in the 1950s, see Pessis, 'Les leçons de l'agriculture américaine?'. On the growing organisation of the French agrochemical industry and its ascendancy on the agricultural sector in the 1950s see Jas, 'Corporate systemic ascendancy'.

<sup>15</sup> 'Les 2e journées françaises des maladies des plantes', *La France agricole* 1234 (21 February 1969): 47.

While the industrial model for agriculture was winning the battle, critical voices were not without connections in the media, scientific and medical institutions, the academy of agriculture and the political world. First, while declining in influence, agrarianism still had many relays of influence in a France that was still largely rural, conservative and Christian: media such as *Le Pèlerin*, *Paris Match*, *L'Aurore*, *Le Courrier de l'Ouest*, *Rivarol*, *La Croix* and *Le Figaro* quite regularly covered Carson's book since 1963. The same year, a Christian publishing house published *La Danse avec le Diable*, a French translation of *Der Tanz mit der Teufel* by the very right-wing Günther Schwab, which similarly denounced the pollution caused by human activity.<sup>16</sup> On the other side of the political spectrum, some media from the radical left also discussed *Printemps silencieux*.<sup>17</sup>

Secondly, in a still predominantly rural France for which wild fauna was still an important resource, hunting and fishing magazines also quickly and readily covered *Silent Spring*.<sup>18</sup> Like beekeepers, hunters and fishermen felt as if their knowledge of the state of biological diversity was crushed by official and private science, and found a legitimisation of their vernacular concerns in Carson's book:

Hunters know all about this: they are constantly aware of game being poisoned by chemicals and insecticides. But their complaints go unheard in the face of the advertising of powerful firms ... But ... *Printemps silencieux* ... is the report of a 5-year investigation into precise facts, controlled by scientific bodies.<sup>19</sup>

Cultural and literary journals (*Figaro Littéraire*, *Le courrier littéraire*, local learned societies journals) constitute a third arena where Carson's warnings were taken up (*Figaro Littéraire*, *Le courrier lit-*

<sup>16</sup> G. Schwab, *La Danse avec le Diable: une interview fantastique* (Paris: Éditions de La Colombe, 1963).

<sup>17</sup> See for instance 'Pour protéger l'eau, ce n'est pas sur les industriels qu'il faut compter', *Libération* (7 October 1963).

<sup>18</sup> See for instance 'Les printemps sans chansons', *Chasseur français* (July 1963): 426; J. Nadaud, 'Non au printemps silencieux', *Chasse-Pêche* (26 December 1964).

<sup>19</sup> 'Les propos d'un chasseur. La nature meurt empoisonnée', *Le Courrier de l'Ouest* (10 July 1963).

*téraire*, local learned societies journals). An additional venue for the reception of *Silent Spring* was provided by the fact that the Languedoc-Roussillon region in the 1960s was the target of a DDT-based mosquito control campaign.<sup>20</sup> Protagonists of the hygienist and natural food movement as well as of the nascent organic farming sector were eager to refer to *Printemps silencieux* to attack the mainstream ‘chemical agriculture’.<sup>21</sup>

Last but not least, the reception and promotion of *Silent Spring* in France was also carried out by the naturalists’ community, from local societies to important scientific figures, such as Jean Rostand and Roger Heim. Rostand, a well-known biologist and philosopher of biology that Carson quoted in *Silent Spring*, wrote an endorsement for the French edition. Heim, Director of the Muséum National d’Histoire Naturelle since 1951 and President of the French Académie des Sciences in 1963, wrote the preface and became actively involved in the controversy.<sup>22</sup>

In the months following the release of *Printemps silencieux*, the book was also featured in parliamentary debates on three occasions: the 1963 law modifying the regulation of pesticides (a modification that did not change the risk assessment or the approval system, and which tended rather to lighten the repression of infractions),<sup>23</sup> the 1964 water law and a 1964 law on mosquito control.<sup>24</sup> During the first of these parliamentary debates in May 1963, the rapporteur of the bill, Maurice Lalloy, referred to Carson’s work:

<sup>20</sup> G. Parrinello and R. Becot, ‘Regional planning and the environmental impact of coastal tourism: The Mission Racine for the redevelopment of Languedoc-Roussillon’s littoral’, *Humanities* 8 (1) (2019): 13.

<sup>21</sup> In our corpus, see for instance: ‘Printemps silencieux. Par Rachel Carson’, *La Vie Claire* (June 1963): 11, 14; J. Boucher, *Précis pratique de la culture biologique* (Angers: Agriculture et Vie, 1964).

<sup>22</sup> On Roger Heim, see F. Charvolin and C. Bonneuil, ‘Entre écologie et écologisme: la protection de la nature au Muséum dans les années 1950’, *Responsabilité & Environnement* 46 (April 2007): 46–52.

<sup>23</sup> Law n°63-762 of 30 July 1963, amending the law of 2 November 1943 concerning the organisation of the control of pest control products for agricultural use.

<sup>24</sup> Law n°64-1246 of 16 December 1964.

All this started in the United States, where Rachel Carson's book, *Silent Spring*, became one of the best-sellers of the year; condensed and distributed in France by one of our most important weekly magazines, published by Plon under the same title, *Printemps Silencieux*, it very quickly found an echo in the general public.<sup>25</sup>

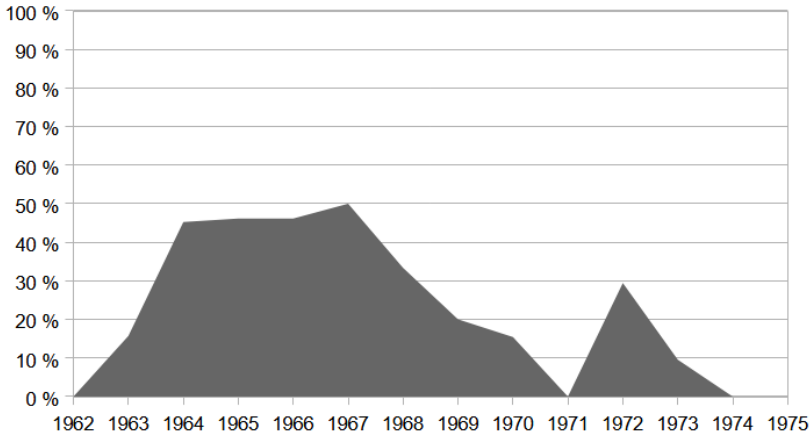
In short, our findings invalidate the view that the arrival of *Silent Spring* in France was an arrival in a 'desert', or that it was little discussed before 1968: as in many other countries, the translated book was very actively taken up by various actors and arenas.

## **2. Backlash: The Domestication of Carson's Warnings in France**

After a phase of active reception and salience in public arenas, our corpus indicates a relative ebb in the visibility of Carson's warnings as a public problem between 1966 and 1968 (Figure 1). How can we explain this phenomenon? On the one hand, the typical trajectory of most public problems in the media is made with a boom and a drop – i.e. a rather short life span, unless permanent work is deployed by actors to painstakingly maintain them on the agenda. On the other hand, beyond such a mechanical explanation, our data indicate an active response from actors in the agricultural technostructure and pesticide industry that certainly helped to cool down the controversy. In 1963–1964, the hot reception of *Silent Spring* in the French public space constituted a sufficiently serious threat – to the chemical model of 'crop protection', to the Gospel of agricultural modernism as well as to the associated institutional and economic interests – for actors of the agricultural technostructure and the agrochemical industry to call for a massive and structured counter-attack. This counter-fire work is visible in Figure 2, with a peak in the number and frequency of articles criticising the credibility of Rachel Carson's book between 1964 and 1966: 43 out of 92

<sup>25</sup> M. Lalloy in *Journal officiel de la République française* 32 (17 May 1963): 1069.

**Figure 2. Percentage of publications criticising *Silent Spring* in our corpus.**

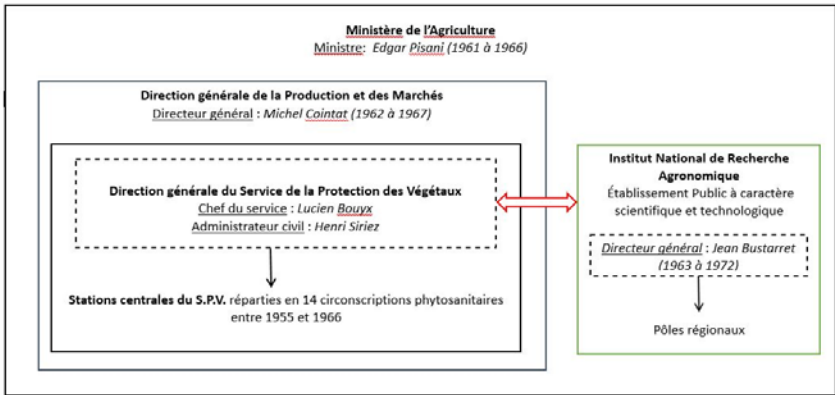


items for these three years. This indicates an active mobilisation of pro-pesticides voices, not only behind the scene and in the cenacles of expert committees and ministries, but also in public arenas. Key players from the pesticide industry, the INRA (the French National Institute for Agricultural Research) and the Ministry of Agriculture wrote articles not only in the scientific and professional press, but also in gardening and forest owners' journals as well as in the agricultural supplement of *Le Figaro*, France's leading right-wing daily.<sup>26</sup>

This section explores the Ministry of Agriculture's response (its

<sup>26</sup> 'Printemps silencieux de Rachel Carson: beaucoup de bruit pour rien', *Informations chimie* 4 (May 1968): 28–42 (magazine of the F. Le Nail, 'Les oiseaux et la protection des cultures', *Le Figaro Agricole* (Sept. 1966): 51–54 (Le Nail was secretary general of ACTA and of La Ligue, the most active national and technical organisations in crop protection, Jas, 'Corporate Systemic Ascendancy', p. 64); H. Siriez, 'Quid de la santé humaine? Quid de l'agriculture américaine? Quid de la faim dans le monde?', *Phytoma* 150 (July–Aug. 1963): 37–41; G. Viel (INRA), 'Notes sur "Silent Spring"', *Revue française de l'agriculture* 1 (1963): 70–72.

**Figure 3. Organisation chart of services under the Ministry of Agriculture involved in the *Printemps silencieux* controversy.**



minister, its departments and research arm) to minimise the credibility of *Printemps silencieux's* claims in France. The organisational chart in Figure 3 provides a map of the official departments within the Ministry of Agriculture that played a role in the *Silent Spring* controversy.

### 2.1. Reassuring ministerial words

On 30 July 1963, a law was promulgated which slightly modified the regulation of pesticides in France as established by the law of 2 November 1943.<sup>27</sup> The law only made the repression of violations more flexible by changing their treatment from a correctional court to a simple contravention, but it allowed the Minister of Agriculture to give the elements of official language facing the release of the French edition of *Silent Spring*:

<sup>27</sup> Law n°63-762 of 30 July 1963 relating to the organisation of the control of pest control products for agricultural use.

it is important to avoid raising problems where none exist. It is quite possible that in the United States, through the abuse of certain pharmaceuticals or insecticides, serious harm has been done. I am in a position to assert that in France we have never found ourselves in such a situation, and that we make sure that we never find ourselves in it.<sup>28</sup>

In short, two key arguments were put forward by the Minister: 1) France is not the United States, which means that Rachel Carson's book is not relevant in France; 2) The French regulatory system, with a system of pre-marketing authorisation and robust control of farmers practices, avoids any dangers and the French can sleep soundly.

## 2.2. INRA's official science against Rachel Carson

Official agronomic research was the second arm of the anti-*Silent Spring* coalition. The National Institute of Agronomic Research (INRA), a research organisation created in 1946 under the supervision of the Ministry of Agriculture, rapidly became the dominant place for the production of knowledge and innovations in the service of the modernisation of French agriculture. Only a few days after the publication of *Printemps Silencieux*, Jean Bustarret, the Director General of INRA, wrote to the Director of the SPV (Plant Protection Service at the Ministry of Agriculture) to send him a critical analysis of Carson's book.<sup>29</sup> This note, written by Guy Viel, director of the Phytopharmacy laboratory at INRA, attacked the scientific credibility of the book:

One can only regret that *Silent Spring* is intended for the general public, as this work presents the problem of chemical control in a very biased way. It can only worry readers, and force official services to make clarifications that may be difficult to understand.<sup>30</sup>

<sup>28</sup> *Journal Officiel de la République Française, Sénat* 32S (16 May 1963): 1069–1070, p. 1069.

<sup>29</sup> Archives Nationales (AN) 19910095/23. J. Bustarret, 'Lettre du Directeur de l'Institut national de la recherche agronomique à propos de la note de Guy Viel sur le livre de R. Carson', 26 April 1963.

<sup>30</sup> AN 19910095/23. Guy Viel, 'Notes sur "Silent Spring"'.



The Director of INRA, while admitting that the book might be a useful alarm signal for those in the chemical industry who 'might tend to judge the precautions taken by the official services to be excessive', found 'regrettable that this book might stir up public opinion, which is already sensitive to this type of worry'.<sup>31</sup>

### *2.3. A combative Department of Agriculture: the General Direction for Production and Markets and its Crop Protection Service*

Bustarret's letter was addressed to the Director of the *Service de la Protection des Végétaux* (SPV, Crop Protection Service). This service was part of the *Direction Générale de la Production et des Marchés* (General Direction for Production and Markets), a new Directorate (1962) within the French Ministry of Agriculture. This had been created to drive forward the desire of the Gaullist government and its Minister of Agriculture Edgard Pisani to speed up the integration of French agriculture into the industrial economy as well as its transformation from a liability into an asset for global economic competition, at a time when the Common Agricultural Policy was coming into force. From 1962 to 1967 it was directed by Michel Cointat, who would later become Minister of Agriculture in 1971–1972.

The SPV, or Crop Protection Service, had been established in 1941<sup>32</sup> with a view to implementing and 'popularizing the treatment methods adopted by the Minister Secretary of State for Agriculture'.<sup>33</sup> This central service in Paris was supervised by the regional services and the regional agricultural warning stations, which notified when and with which products farmers were recommended (or in some cases obliged) to treat pests.

Right after the publication of *Printemps silencieux* and two weeks after Bustarret's letter, Michel Cointat spoke at the General Assembly of the *Chambre Syndicale de Phytopharmacie*, the professional

<sup>31</sup> AN 19910095/23. J. Bustarret, 'Lettre du Directeur de l'Institut national de la recherche agronomique à propos de la note de Guy Viel sur le livre de R. Carson', 26 April 1963.

<sup>32</sup> Loi du 25 mars 1941.

<sup>33</sup> Fourche, Contribution à l'histoire de la protection phytosanitaire, p. 401.

organisation of the pesticide industry. He felt happy with 'the harmonious relation between the pesticide industry and the Ministry of Agriculture'<sup>34</sup>. Regarding *Printemps silencieux*, he developed a strategy of defence claiming that France has a more reliable regulatory control system than the USA. He stated:

Public opinion, often ill-informed, is fond of sensationalist articles, and it is always easy to flatter the emotions and sensitivities of the people, to provoke feelings of fear and anxiety by the supposed threat of poisons carelessly spread on our fruits and vegetables ... I do not blame Miss Rachel Carson for writing her book on the 'Silent Spring', which has caused a stir in our country recently. I do not question the facts she puts on record. But I wouldn't want to see things happening in America applied to France.<sup>35</sup>

Although Michel Cointat avoided challenging the science of the book, he dismissed the warnings that were supposedly not applicable to France and favoured an economic logic: that of the necessary development of the pesticide industry and that of increasing national agricultural production to make France a powerful actor in international export.

In April 1964, Michel Cointat and Lucien Bouyx, the director of the SPV, ordered that the book no longer be cited as a credible reference in any official publications of the Ministry.<sup>36</sup> This decision enacted a takeover, a few days after an editorial in the Ministry of Agriculture's weekly information bulletin had celebrated Carson:

In *Silent Spring*, Rachel Carson describes the fearsome effects of non-selective 'biocides' ... Worry is spreading to ever wider sectors of public opinion, and this worry is healthy, because it responds to a present and growing danger. It must be the driving force for action.<sup>37</sup>

<sup>34</sup> AN 19910095/23. 'Discours de M. Michel Cointat au banquet de l'assemblée générale de la chambre syndicale de la phytopharmacie', 9 May 1963, p. 1.

<sup>35</sup> *Ibid.*, p. 5.

<sup>36</sup> AN 19910093/23, Lucien Bouyx (SPV) to the *Sous-directeur de l'information* (under the cover of the *Directeur de la production et des marchés*), 20 April 1964.

<sup>37</sup> 'Éditorial', *Bulletin hebdomadaire d'information du Ministère de l'Agriculture* 181 (11 April 1964).

#### 2.4. An activist civil servant at the head of a coalition of industrial and public players

Within the SPV, the man who was most active in implementing a ‘containment’ and ‘backlash’ strategy was Henri Siriez (1906–1982), an engineer from the Institut National Agronomique, a civil servant at the Ministry of Agriculture since the 1930s. He was a fierce opponent of pesticide critics and of the organic farming sector.<sup>38</sup> The archives left by Siriez are available at the National Archives and contain hundreds of documents (letters and published articles) relating to *Printemps Silencieux* written between 1963 and 1975.<sup>39</sup> This collection includes a folder containing the ‘favourable press’ (as Siriez put it) and one containing various documents ‘against’ Carson’s book (to use his own words). The variety of publications from various newspapers and magazines shows that a major documentation effort was undertaken. The objective of this intelligence work was to develop counter-arguments to *Silent Spring* and to implement a counter-campaign. Siriez corresponded actively on that issue, and from 1963 onwards, he himself published numerous articles in plant protection and forestry journals and was interviewed in local agricultural journals (26 items in our corpus).

Henri Siriez’s motivations in this controversy were varied. From his planist socialist youth in the 1930s, and then his right-wing ‘neosocialist’ involvement until 1944, he kept fervent modernist convictions for agriculture. So when, in the early 1950s, beekeepers’ organisations protested about the damage caused to bee populations by organochlorine pesticides, Siriez dismissed the group as lacking in modernity:

the least that can be said is that beekeeping in France is not a particularly advanced form of agricultural exploitation from a technical point of view; it is, for the most part, in the hands of a large number of small people ... who run their hives as amateurs ...<sup>40</sup>

<sup>38</sup> N. Jas, ‘Lire des documents d’archives (1) – L’agriculture biologique vue par l’élite de l’intensification agricole des Trente Glorieuses’, *Transhumances* (7 November 2018), <https://ritme.hypotheses.org/3168>.

<sup>39</sup> AN 19910095/23.

<sup>40</sup> AN 199201445/52 (5 SPV 52), H. Siriez, ‘Note destinée au Directeur de la production agricole’, 29 September 1954.

During the war he joined the staff of the cabinet of the Minister for Agriculture (1942–1944) and belonged to the – modernist and collaborationist – technocratic wing of the Vichy regime.<sup>41</sup> Two decades later, although a colonialist nostalgic for French Algeria, he embraced the Gaullist project for agricultural modernisation implemented by Minister Edgar Pisani in the early 1960s, a project aimed at integrating agriculture into the industrial economy and taking advantage of European integration to increase French agricultural exports. Through his official function in crop protection, Henri Siriez was in close contact with senior figures in the agricultural sector and the agrochemical industry. He was socialised and had friends in arenas – such as journals, scientific societies, professional groups – that, as Jas has documented, had been strategically designed by corporate actors to shape a pesticide industry ascendancy on the agricultural sector from local extension work to high-level science.<sup>42</sup> Furthermore, since the mid-1950s, he (and the SPV more generally) was in a kind of personal conflict with the preface author of *Printemps silencieux*, Roger Heim, director of the MNHN, which may have intensified his involvement in the post-*Silent Spring* battle.

Henri Siriez' press clipping of articles mentioning Rachel Carson led him to scrutinise many papers that mentioned pesticides. He then passed on information that could help respond to attacks on plant protection products to other members of the Ministry of Agriculture, local crop protection officers, toxicologists and people from the pesticide industry sector. Conversely, he received articles about *Silent Spring* from his network. A network of information transmission was thus set up around the figure of Henri Siriez. Furthermore,

<sup>41</sup> On the importance of a modernist current in the Vichy regime's agricultural administration under the German occupation, see M. Lyautey and C. Bonneuil, 'German and Vichy origins of post-1945 French agricultural modernization', *Revue d'histoire moderne & contemporaine* 69 (2) (2022): 86–113. After the 1944 Liberation, following the recommendation of a purge commission, Siriez was demoted to a lower rank within the Ministry of agriculture. See *Journal Officiel de la République Française* 77 (56) (7 March 1945): 1196. However, he gradually climbed the ranks again over the following decade.

<sup>42</sup> Jas, 'Corporate systemic ascendancy'.

because of his position at the Ministry, he gradually exercised control over the publications of the public services. When an article appeared in the specialised or general press that he did not like, he let the author know. This strategy helped prevent the controversy from spreading. For example, Siriez was unhappy to read in a 1964 issue of the journal of the Chambers of Agriculture an article that acknowledged the development of pesticide resistance among 'pests'. He was quick to take up his pen and write to the Director of the Permanent Assembly of the Presidents of Chambers of Agriculture (a 'dear friend' with whom he worked at the cabinet of the Ministry of Agriculture under Vichy), to complain:

It is regrettable to find in a magazine like yours an assertion that is used by all the detractors of chemical methods in agriculture, whose 'carsonitis', an epidemic disease, consists of talking nonsense without even knowing what they are talking about.<sup>43</sup>

This section has highlighted strategies framed by officials seeking to domesticate *Silent Spring's* criticism in order to restore the legitimacy of the 'modern' agricultural model and pesticide-regulatory regime. First, they developed a discourse questioning the scientific legitimacy of Rachel Carson who was not a toxicologist. Moreover, an underlining argument coming from a male-expert gaze suggests that Carson was a woman more driven by emotions and fear rather than scientific rationality. Second, they argued that the French pesticide regulation model was much more rigorous than the United States one. Third, opponents to *Silent Spring* defended economic progress. Minor environmental and health impacts had to be weighed against the greater interest of increasing agricultural production and exports.

<sup>43</sup> AN 19910095/22. H. Siriez to F. Houillier, 26 January 1965.

### 3. Organising Procrastination: French Efforts to Slow Down the Slow Emergence of European Regulations of Pesticides

As we have seen in the first two parts, despite the fact that Carson's warnings were far from going unnoticed in France, the controversy remained generally contained and did not destabilise the research arena (INRA, where even biological control researchers, who could have been natural allies, attacked *Silent Spring*), the expert assessment arena (risk assessment at the 'Commission des Toxiques'), nor the regulatory regime (which evolved little between 1943 and the decades following Carson's book).

Amalia Ribí Forclaz and Corinna Unger have depicted the 1960s as a time when international arenas like FAO and WHO favoured 'progress' rather than 'precaution',<sup>44</sup> while Nathalie Jas has documented how French actors played a role in these debates. The leading toxicologist involved in the French pesticide assessment and regulatory system, René Truhaut, also played a leading role in the Codex Alimentarius' adoption of a new standard, the Acceptable Daily Intake (ADI) for food additives and pesticides. Codified in a 1962 FAO/WHO report, this ADI standard lent itself to a very flexible calculation that took into account economic 'reality'. The Joint FAO/WHO Meeting on Pesticide Residues (JMPR) was established in 1963. Loosely related to the ADI, but allowing even more flexibility when some major agricultural interest was at stake, the 'tolerance limit' (the maximum concentration of a pesticide or its residue to be tolerated in the food market) became an emerging regulatory tool. This represented, as Jas has shown, a 'retreat from precaution' when compared to the more protective standards that had been considered in the mid-1950s.<sup>45</sup>

<sup>44</sup> A. Ribí Forclaz and C. Unger, 'Progress versus precaution: International organizations and the use of pesticides, 1940s to 1970s', *Comparativ* 32 (6) (2022): 611–628

<sup>45</sup> N. Jas, 'Adapting to "reality": The emergence of an international expertise on food additives and contaminants in the 1950s and early 1960s', in S. Boudia and N. Jas (eds), *Toxicants, Health and Regulation since 1945* (London: Routledge, 2013), pp. 47–69.

At the European level, neither the environment nor public health were mentioned as concerns in the Treaty of Rome's establishing the European Economic Community (EEC) in 1957.<sup>46</sup> The six original EEC members (Belgium, France, Italy, Luxembourg, The Netherlands and West Germany) had established a Common Agricultural Policy (CAP). The CAP had two key goals: it aimed at making Europe less dependent on food imports by modernising the agriculture of member states, and it supported the income of EEC farmers through measures such as subsidies and price guarantees. The debates following the publication of *Silent Spring* in each country and in Brussels (the Marsden accident in Great Britain, the publication of the book *Tanz mir der Teufel* in Germany, etc.) led the EEC Commission to take up the issue. In order to construct a common market, the Commission and its General Directorate for Agriculture envisioned to establish common pesticides residue 'tolerance limits' in food products. Thanks to the CAP, France's agricultural trade balance with the EEC rose from +614 million francs in 1964 to +3519 million in 1969 – a rise caused by a boom in the application of pesticides and fertilisers.<sup>47</sup> Throughout the 1960s, French experts and authorities worked to oppose any European regulation on pesticides. Asked about tolerance limits by the Commission in 1961, the French government replied that no regulatory text sets maximum thresholds for pesticide residues in food, and that it would be a 'difficult task'.<sup>48</sup> Despite French (and Italian) reservations, an EEC working group on 'Phytosanitary legislation' held meetings, and a 'pesticides sub-group' met for the first time in June 1963.<sup>49</sup>

<sup>46</sup> N. Jas, 'Santé publique et marché des agrumes dans la CEE des années 60', in L. Bonnaud and N. Joly (eds), *L'alimentation sous contrôle* (Dijon: Educagri édition, 2012), pp. 91–108.

<sup>47</sup> *Statistiques agricoles 1970 (résultats de 1969)*, vol. 1 (Paris: Ministère de l'agriculture, 1970), p. 82.

<sup>48</sup> AN 19840343/299. Comité interministériel pour les questions de coopération économique européenne (SGCI) to France's Permanent Representative at the EEC, 22 August 1961.

<sup>49</sup> AN 19840343/300. Archives of the General Secretariat of the Interministerial Committee for European Cooperation Issues. EEC pesticide residue meetings.

An additional group was formed in 1964: the ‘Committee of Experts for Problems Concerning Pesticide Residues’. This committee was initially responsible for ‘setting tolerance limits ... for pesticide residues on and in agricultural commodities’, before seeing its mandate reduced to analytical methodologies.<sup>50</sup> The French government sent to these meetings the same key figures that had been busy extinguishing the fire caused by the French edition of *Silent Spring*: these included Bouyx and Siriez from SPV, Bustarret and Viel from INRA as well as the toxicologist René Truhaut. At the second and third meeting of the ‘committee of experts’ in 1964, while the five other Member States converged on common tolerance limits for 15 substances such as DDT, parathion and lindane, France asserted ‘the impossibility of discussing tolerance limits’, arguing the need for additional studies on the amount of residues that would result from ‘good agricultural practices’.<sup>51</sup> Despite French procrastination on limiting pesticides and the wider ‘empty chair crisis’ (July 1965–January 1966), the Commission presented in 1965 a draft directive regulating agricultural pesticides. Paris responded in October 1966 that community regulations should aim at ‘eliminating the obstacles to the development of a genuine European market’ but must not be the ‘normal means’ of ‘increasing consumer protection’.<sup>52</sup> Due to these resistance, it took several additional years before the Commission came up with a decision proposal at the end of 1968, with a view to ‘reconciling the needs of plant production with the imperatives of protecting human and animal health’, setting maximum pesticides residue thresholds on a European scale, and instituting a ‘permanent phytosanitary committee’. The draft decision was backed by the European Parliament in June 1969, but it was not until November 1976 that this initiative took shape in the form of Directive 76/895/EEC.<sup>53</sup>

<sup>50</sup> AN 19840343/300. Report from the first meeting of the ‘Comité d’experts pour les problèmes concernant les résidus de pesticides’, 13–14 February 1964.

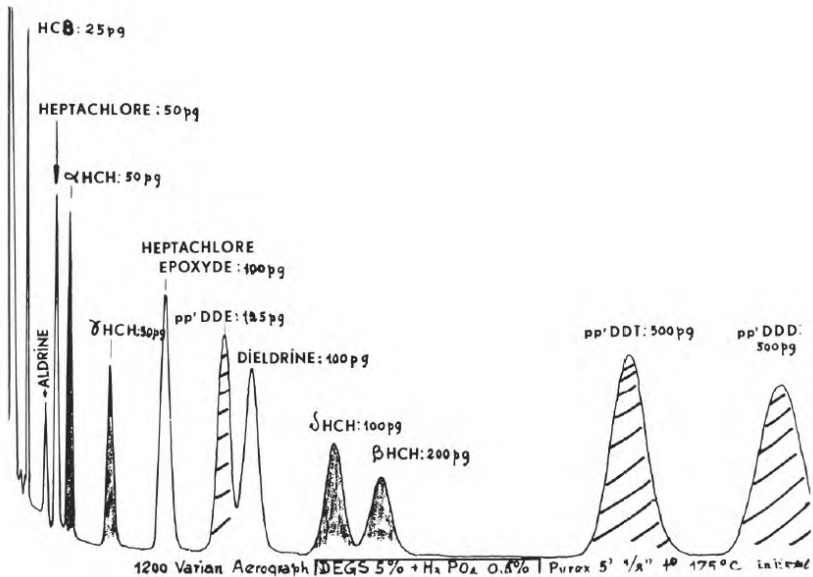
<sup>51</sup> AN 19840343/300. The 9–10 June and 29–30 October 1964 meetings.

<sup>52</sup> AN 19870391/1 [16 DQ 1]. Dromer (Secretary General of the SGCI), ‘Harmonisation des législations agricoles’, 21 October 1966, p.2.

<sup>53</sup> 68/C 139/07. Draft Council Decision setting up a Standing Committee



**Figure 4. Electron-capture chromatogram.**

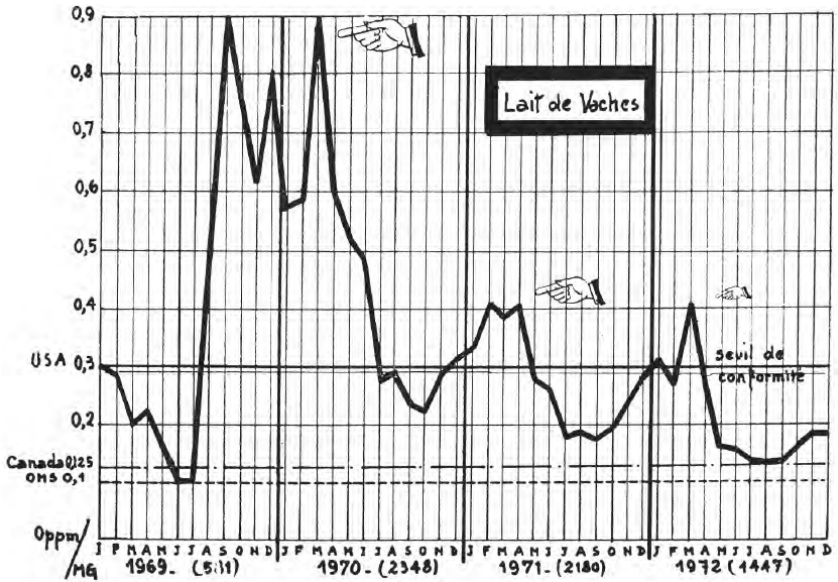


Source: from F.M. Luquet, J. Goursaud and J. Casalis, 'Les résidus de pesticides organochlorés dans les laits animaux et humains', *Le Lait* **535–536** (1974): 269–301, p. 282, with kind permission of EDP Sciences.

Despite the French authorities slowing down European regulations, new factors nonetheless resulted in the ban of the most toxic pesticides. In 1968, new types of detectors developed in the United States were introduced in many industrial countries. These electron

on Plant Health, *Official Journal of the European Communities* **139** (28 December 1968): 19–24; AN 19840343/299. Sessional paper of 25 June 1969 in the European Parliament on the proposal from the Commission of the European Communities to the Council for a first regulation on the fixing of maximum levels for pesticide residues in and on fruit and vegetables and for a draft establishment of a Standing Committee on Plant Health. The additional procrastinations from 1969 to 1976 were not only due to France, but also to the reluctance of the United Kingdom that was just entering the European Community.

**Figure 5. HCH (Lindane) content in French milk samples. This was well above the WHO norm in the years 1969–1972, and three times above the US norm.**



Source: from Luquet, Goursaud and Casalis, 'Les résidus de pesticides organochlorés', p. 288.

capture detectors were a thousand times more sensitive than previous methods (see Figure 4).<sup>54</sup>

Organochlorine and organophosphorus pesticides residues came to be detected in many foods and in the bodies of Arctic seals, in the fatty tissues of men, in the breast milk of women and in the brains of children. Carson had suspected this universal and invisible presence when she wrote: 'For the most part this pollution is unseen and invisible, making its presence known when hundreds or thousands of

<sup>54</sup> F. Pellissier, *Tuer les pestes pour protéger les cultures: Sociohistoire de l'administration des pesticides en France* (Ph.D. Thesis, Université G. Eiffel, 2021), pp. 193–197.

fish die, but more often never detected at all'.<sup>55</sup> But the lack of powerful detection tools prevented her from providing all the evidence. The sudden revelation of the diffuse and underestimated presence of pesticides in the environment and food gave new credence to *Silent Spring* and sparked new controversies over risk, trade and regulations, both at international and national level, which may explain the second wave of references to Rachel Carson in the French public space, from 1969 on, after the 1965–1968 ebb (Figure 1).

The second wave took place in a new international context. With the rise of environmental issues in the USA. In June 1972, the newly created Environmental Protection Agency banned the agricultural use of DDT, a measure that followed President Nixon's announcement on 10 February 1970 that the insecticide would soon be banned. Several OECD countries (Norway and Sweden in 1970, West Germany and the United States in 1972) banned agricultural use of DDT and other organochlorines. The 'Détente' and the road to the Stockholm UN Conference on the Human Environment (1972) also created a favourable context. The revelation of the global presence of pesticides paved the way to their casting as 'global environmental problems' at the Stockholm Summit in June 1972, alongside other issues such as transnational pollution, oceans and the balance of the atmosphere.<sup>56</sup>

In this new international context, the French government entrusted a scientific journalist who was very sensitive to environmental issues with the writing of the French report for the European Conservation Year (1970), which stated that Carson 'had been accused of exaggeration, but certain facts that have since been recognized seem to sometimes exceed her own forecasts'.<sup>57</sup> Echoing also

<sup>55</sup> R. Carson, *Silent Spring* (Boston: Houghton Mifflin Company, 1962): 41.

<sup>56</sup> DDT and pesticides then fell into the category of 'Man's Impact on the Global Environment' (as put in the famous project conducted at MIT in 1970). On the push for what Maurice Strong called 'a new kind of globalism' in Stockholm 1972, see B. Huf, G. Sluga and S. Selchow, 'Business and the planetary history of international environmental governance in the 1970s', *Contemporary European History* 31 (4) (2022): 553–569.

<sup>57</sup> Comité français d'organisation de l'année européenne de la nature, *La nature n'en peut plus* (Paris: Ministère de l'agriculture, 1970), 46.

growing concern for food quality and organic farming across the world, a strong French organic farming movement developed. In 1972, the 'Nature et Progrès' congress gathered 3,500 people in Versailles, marking the rise of the organic food movement and its greater capacity to bring the problem of pesticides into the public space.<sup>58</sup>

More than the only environmental and health arguments, the commercial conflicts intensified by the new detection methodologies have perhaps been the main constraining force in (partly) changing the policy of the Ministry of Agriculture in terms of pesticides. In addition to making pesticides a universal issue, more refined detection techniques helped challenge consumer protection frameworks and international agricultural trade routines. From 1969 onwards, abnormal levels of residues in foodstuffs were detected in the United States, leading to certain foreign products being refused entry, including French cheeses. Germany followed suit: out of 24 analyses carried out in 1970, there were two cases where the DDT content exceeded the German tolerance threshold.<sup>59</sup> A French daily newspaper could then ask: 'Are we eating products that others do not want?'<sup>60</sup> To preserve the export interests of French agriculture (and despite the efforts of Siriez and the pesticide industry, who fiercely defended DDT and organochlorine pesticides)<sup>61</sup>, the Minister of Agriculture announced in 1971 the progressive withdrawal of DDT from the market.<sup>62</sup> The

<sup>58</sup> Among the references in our corpus we can cite M. Rémy, *L'homme en péril: Une société de destruction ou une société de protection?* 1971; D. Mességué, *Les plantes de mon père* (Paris: Éditions Robert Laffont, 1973).

<sup>59</sup> AN 19870391/50, letter from the agricultural attaché at the French embassy in Bonn, 13 April 1970. Cf. Fourche, Contribution à l'histoire de la protection phytosanitaire. In January 1973, the German ambassador in Paris informed the French government of the presence of too many pesticide residues in salads imported from France and asked for stricter controls.

<sup>60</sup> 'Fromages: Mangeons-nous des produits que les autres ne veulent pas?', article in the daily regional press *La Dépêche du midi*, reproduced in R. Richard, 'La défense du consommateur', *Qualité, Loyauté, Santé françaises* 72 (March 1973): 2–3, quote from p. 3.

<sup>61</sup> J. Lhoste and P. Grison, *La Phytopharmacie française: Chronique historique* (Paris: INRA, 1989), pp. 50–51.

<sup>62</sup> Ministère de l'Agriculture, Circular of 19 Feb. 1971.

following year, four other organochlorines (dieldrin, aldrin, heptachlor and chlordane) were banned (as of January 1973).<sup>63</sup> The first EEC Directive on pesticides was finally adopted in November 1976, fixing maximum levels for pesticides in food.<sup>64</sup> However, these measures taken in the 1970s can hardly be considered a break-through in terms of mitigating risks associated with pesticides. First, the 1976 Directive was poorly implemented and applied only to fruits and vegetables: harmonised Maximum Residue Levels were not adopted before 1986 for cereals and foodstuffs of animal origin, and only in 1990 for products of all plant origin. Secondly, the banning of a few emblematic molecules left many other toxic pesticides on the market: in the mid-1980s, there were 3,000 crop-pesticide products marketed in France, including 360 registered substances. For instance, the very toxic and remanent chlordecone, better known by the brand name Kepone, not banned before 1993, has seriously contaminated ecosystems and bodies in the French West Indies<sup>65</sup>.

## Conclusion

This paper shows that, far from being ignored, *Silent Spring's* facts and warnings were intensively received and hotly debated in France in the early 1960s. We also document how a productivist coalition of actors, which dominated the French agricultural sector, manoeuvred to attack and silence criticism of pesticides and to slow regulatory progress in the European arenas. Finally, some regula-

<sup>63</sup> Order of 2 October 1972 (*JORF*, 25 October 1972). See also Lhoste and Grison, *La Phytopharmacie française*, p. 51. To legalise such bans, a new law of 22 December 1972 modified the 1943 law so as to allow the administration to withdraw the registration of a product before the renewal deadline (usually set to 10 years), in the event that it is not 'harmless to public health, users, crops and animals', *JORF*, 23 December 1972, p. 13350.

<sup>64</sup> Directive 76/895/EEC of 23 November 1976 relating to the fixing of maximum levels for pesticide residues in and on fruit and vegetables.

<sup>65</sup> M. Prieur, 'La législation sur les pesticides en France', *Revue Juridique de l'Environnement* 2 (1987): 201–220; M. Ferdinand, *Decolonial Ecology: Thinking from the Caribbean World* (Hoboken: John Wiley & Sons, 2021).

tory developments took place after 1969, due to a new environmental momentum on the international scene and to easier detection of the presence of toxic substances in foodstuffs, leading to refusals at borders that threatened to generate obstacles to commercial exchanges.<sup>66</sup> This new uncertainty for agricultural and trade agents led industrial countries, including France, to ban certain pesticides while leaving in place a regulatory regime and an agricultural policy allowing the pesticide market to grow steadily. The same market liberalisation logic also helped, after fifteen years of procrastination, to adopt the European directive 76/895/EEC.<sup>67</sup> The recitals of this directive clearly identified residues as a trade problem, which hinders the ongoing construction of the common market (recital 1), and they stated that too different tolerance levels of pesticide residues between Member States ‘may contribute to the creation of barriers to trade and therefore hinder the free movement of goods within the Community’ (recital 9).<sup>68</sup> Additional research needs to be done to fully document the laborious process towards pesticide regulation in Europe, but what gets clear from this paper is that in a French, European and international configuration that favoured ‘progress versus precaution’,<sup>69</sup> the desire to export and the construction of a European (and global) food market were perhaps more decisive in the evolution of pesticide regulations than arguments concerning health and the environment.

<sup>66</sup> A. Levain et al., ‘Continuous discontinuation. The DDT Ban revisited’, Conference paper, University of Sussex, Brighton, 2015; Pellissier, ‘Tuer les pestes’.

<sup>67</sup> *Official Journal of the European Communities*, L 340 (26–28) (9 December 1976). The Directive also set the objective of withdrawing from the market the active substances of mercury compounds and persistent organochlorines such as DDT: ‘for certain plant protection products, the importance of these risks is such that the use of these products, in whole or in part, should no longer be tolerated’. This was followed by Council Directive 79/117/EEC of 21 December 1978 on the prohibition of certain plant protection products (from January 1981 on).

<sup>68</sup> The 1976 directive provides that member states ‘shall verify compliance [with the MRLs] by means of official controls carried out at least on a random basis’. To this end, ‘Community methods of sampling and analysis’ will have to be harmonised.

<sup>69</sup> Forclaz and Unger, ‘Progress versus precaution’.

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