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Pesticides: for or against acetamiprid? An analysis of pros and cons

In France, the petition against the so-called 'Duplomb' law on the website of the National Assembly [[consult in French](#)] was signed by **a record number of citizens** (over 2 million people as of the morning of July 28), demonstrating the concerns of the French population regarding the setbacks occurring in political decisions related to the environment and health. This concern is widely shared around the world [[read](#)].

The law, passed in early July under pressure from the [FNSEA](#), agricultural union,¹ close to agribusiness, considers the reintroduction of certain pesticides, notably the reauthorisation of the neonicotinoid acetamiprid (authorised at the European Union level but prohibited in France) mainly used in the production of sugar beets and hazelnuts, as well as the approval of larger industrial poultry farms. **It symbolises the short-term and purely economic vision of France's political leaders.**



¹ It must be mentioned here that if this union supports the law, the profession is not unanimous and it is firmly opposed by [Confédération Paysanne](#).

The arguments of those who support authorising acetamiprid are essentially the economic importance of sugar beet production and the need to preserve it, and the absence of alternative solutions.² Those of the opponents refer to the negative consequences of this pesticide on the environment and on health, and, more broadly, on the sustainability of the economy.

This article presents elements for forming an opinion on these various arguments.

The economic importance of the sugar beet sector in France

The total turnover of French sugar producers (including by-products) reached 7.6 billion euros in 2022, according to INSEE, the French statistical bureau, representing approximately 0.3% of France's GDP [read in French [here](#) and [here](#)].

During the 2024–2025 agricultural season, France produced 32.9 million tonnes of sugar beets, equivalent to around 4.6 million tonnes of beet sugar.

This production used 1.5% of France's agricultural land (412,000 hectares) and employed 23,000 people in the agriculture sector and 6,000 people in sugar factories, if ethanol manufacturing is included.

The sugar industry is heavily concentrated in Europe. In France, the giants are Tereos and Cristal Union. Some estimates suggest that about 70,000 jobs are created (almost 0.23% of total jobs in France) when considering indirect employment [[read in French](#)].

However, the global sugar market is a very particular market, and the 2017 European Union Common Agricultural Policy reform further exposed sugar prices in Europe to the strong fluctuations seen at the global level. In case of low prices, a greater share of production goes towards ethanol manufacturing, which in a normal year represents approximately 10% of the total [[read in French](#)].

In other words, **sugar beet production is a risky business of relatively modest importance, but it generates exports**. On the agricultural level, it would be easy to consider conversion to other crops, given the good quality of the land used for sugar beet production. However, conversion would likely be more difficult for the industrial part of the sector.

Hazelnut production, on the other hand, remains marginal in France

² The use of acetamiprid has gained momentum as it seemed to have lower toxicity for mammals than alternative products [[read](#)]. It acts on the nicotinic acetylcholine receptors, an important neurotransmitter in the nervous system, especially, in the case of mammals, in the neuromuscular and reproductive systems [[read](#)].

Negative impacts on the environment

Let's remind here that acetamiprid is used because **it acts on the nervous system** of insects, causing abnormal excitement, convulsions, paralysis, and ultimately, death. Sucking insects are particularly sensitive to it. Its application, combined with other chemical compounds, could enhance its consequences, meaning that studying the isolated impact of acetamiprid could lead to an underestimate of its real effects on the environment, given the possible synergies with other products [\[read\]](#).

The use of potentially significant quantities of acetamiprid on the 412,000 hectares of sugar beet crops and the few hundred anecdotal hectares of hazelnut plantations in France will have an impact:

- on **pollinators**³ such as bees. It significantly reduces their lifespan, induces early foraging activity, and decreases foraging flights of worker bees [\[read here\]](#) and in French [\[here\]](#). It causes various disturbances including neurotoxic effects by acting on neurons that can lead to paralysis [\[read in French\]](#) as well as consequences for memory [\[read\]](#).
- on certain **parasites of insects attacking crops**, such as Trichogramma wasps which are beneficial in crop protection [\[read\]](#).
- on the **level of microbial biological activity in soils**, the composition of microbial flora, and enzymatic activity [\[read\]](#), with implications for crops.
- on the aquatic world – as acetamiprid can persist in water – where it has an impact on fauna, accumulating in organisms and even being transmitted to their offspring [\[read\]](#).



³ Let's remind here the key importance of pollinators who are responsible for around 35% of food production, contributing to the increase of around 75% of the most important crops [\[read here\]](#) and [\[here\]](#).

In addition, more generally, it is known that neonicotinoids also lead to a decrease in bee immunity to certain viruses [\[read in French\]](#), and by remaining in the soil, air, water, and living organisms, they have negative effects on earthworms, birds, aquatic invertebrates, as well as microorganisms, with cascading consequences on the entire environment [\[read\]](#).

Negative consequences on human health

Studies show that acetamiprid and, more generally, neonicotinoids can have a harmful effect on human health. They are presented in a 2015 'meta-study' [\[read\]](#) summarising the results of various toxicological studies:

- acetamiprid causes **neurotoxic effects**,
- it has also been noted that in mammals (experiment on mice), it can **affect reproductive organs**, reduce immunity by acting on lymphocytes, and occasion haemorrhages (in rats).

Towards the end of 2024, an article analysing the impact of neonicotinoids on reproductive health [\[read\]](#) highlighted that the subject is still largely under-researched. This situation had actually allowed the European Food Safety Authority (EFSA) to issue an opinion at the beginning of 2024 [\[read\]](#) asserting that 'the results of the weight of evidence indicated that there are major uncertainties in the body of evidence for the developmental neurotoxicity (DNT) properties of acetamiprid and further data are therefore needed to come to a more robust mechanistic understanding to enable appropriate hazard and risk assessment', and to advise continuing the use of this product in the European Union, in disregard of the precautionary principle.

Lack of alternative solutions

Despite the claims of acetamiprid supporters, **there are alternatives to the use of neonicotinoids**, especially acetamiprid, for producing sugar beets.

This is what a group of French researchers claim, who analysed nearly 300 scientific articles and identified 75 alternative control strategies to the use of neonicotinoids, including 20 effective methods that can be implemented in the short term in a practical and sustainable manner [\[read\]](#).

These methods involve natural and synthetic insecticides, pathogenic fungi for insects, selective insect predators, organic and mineral oils, molecules stimulating the natural defences of sugar beets, cultural practices, and resistant varieties.

Each of these methods has its limitations, but when combined, they are compatible and complementary. However, **further experimentation is still required to find the right combinations** that, in addition to being effective, will have limited undesirable effects.

Conclusion

The analysis of arguments from supporters and opponents of authorising acetamiprid, in the view of hungerexplained, clearly **tilts the balance in favour of prohibiting its use.**

Its effects on the environment and health, as well as the existence of alternatives, make its authorisation inconceivable on the basis of just economic arguments.

The environmental/health vs. economy and finance opposition, constantly present in the policy debate, falsely gives the impression that these two areas are comparable or substitutable. This is **a fundamental mistake.**

It should be remembered that the economy and finance are increasingly based on money (financialisation of the economy), which is a human creation intended to facilitate exchanges that is established on agreements and trust. In this sense, **everything related to money is negotiable.**

On the contrary, the environment and health depend on a multitude of physical-chemical and biological processes that existed well before the appearance of humans and that, despite all their efforts,⁴ humans cannot completely control or alter even in part. In this field, as already mentioned in earlier articles on hungerexplained, **negotiation is not possible...**

This should be a subject for serious thinking for everyone, especially for our leaders who mostly prioritise money and short-term gains at the expense of physical-chemical and biological realities and long-term considerations.

To know more :

- Culture Sucre, [Chiffres clés de la filière betterave-canne-sucre](#), 2025 (in French).
- XERFI, [L'industrie du sucre](#), 2025 (in French).
- Oladosu, J.I., Flaws, J.A., [The impact of neonicotinoid pesticides on reproductive health](#), Toxicological Sciences, Volume 203, Issue 2, February 2025, Pages 131–146, 2025.
- Kumar, A., [Acetamiprid & Cypermethrin Exposure Mediated Toxicity: A Review of Its Effect on Ecosystem Health](#), International Journal of Advanced Research and Multidisciplinary Trends (IJARMT) 2, no. 2 (2025): 356–367, 2025.
- Zang, Y., et al., [Acetamiprid-Induced Toxicity Thresholds and Population Sensitivity in Trichogramma dendrolimi: Implications for Pesticide Risk Assessment](#), Insects, 2025.

⁴ e.g. various infrastructures and technologies, geoengineering aiming at modifying meteorological conditions, if only locally.

- Mamy, L., Pesce, S., Sanchez, W. et al., [Impacts of neonicotinoids on biodiversity: a critical review](#), Environ Sci Pollut Res 32, 2794–2829, 2025.
- EFSA, [Statement on the toxicological properties and maximum residue levels of acetamiprid and its metabolites](#), 2024.
- Bettiche, F., et al., [Les Risques Des Pesticides Néonicotinoïdes Sur Les Pollinisateurs](#), Journal Algérien des Régions Arides Volume 16, Numéro 1, Pages 68–74, 2023 (in French).
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- Verheggen, F., Barrès, B., Bonafos, R., Desneux, N., Escobar–Gutiérrez, A., et al., [Producing sugar beets without neonicotinoids: An evaluation of alternatives for the management of viruses–transmitting aphids](#), Entomologia Generalis, 2022, 42 (4), pp.491 – 498. 10.1127/entomologia/2022/1511, 2022.
- Dworzanska, D., et al., [The influence of acetamiprid and deltamethrin on the mortality and behaviour of honeybees \(Apis mellifera carnica Pollman\) in oilseed rape cultivations](#), 2020.
- Shi, J., et al., [Effects of sublethal acetamiprid doses on the lifespan and memory-related characteristics of honey bee \(Apis mellifera\) workers](#), Apidologie (2019) 50:553–563, 2019.
- Coulon, M., [Rôle des interactions virus/ pesticides dans le déclin des abeilles, Sciences agricoles](#), Université d’Avignon, 2017 (in French).
- Zoumenou, B. et al., [Effets toxicologiques et méthodes d’analyse de la lambda-cyhalothrine et de l’acétamipride utilisés dans la protection phytosanitaire du cotonnier au Bénin](#), International Journal of Biological and Chemical Sciences, 2015 (in French).

Selection of articles published earlier on [hungerexplained](#) and related to this topic:

- [Politics, environment and climate: public awareness, repression and inaction](#), 2025.
- [Pollinators are declining rapidly – Rather than protecting them, some are getting mobilized \(and invest\) for replacing them!](#) 2022.

Also read our article on our thematic pages on ‘[Pesticides](#)’ and ‘[Biodiversity and food](#)’.