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The Alternative to Neonicotinoids: Premises for a Sustainable Agricultural Policy in the Romanian Context

Eliza Carmen Despa (Mocian)*, Adrian Turek Rahoveanu**

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ABSTRACT

The article analyzes the controversies generated by the use of neonicotinoids in Romanian agriculture, in the context of successive derogations issued by the Ministry of Agriculture and Rural Development, in contradiction with European Union regulations on the protection of pollinators. The study starts from the case of the derogation of December 2024 and follows the legal, ecological and socio-economic implications of the administrative decisions, balancing the divergent positions of the actors involved: authorities, farmers, beekeepers and environmental organizations. By analyzing official documents and public positions of the authorities, the article highlights the tensions between the objectives of agricultural production and the need to protect biodiversity. The preliminary conclusions emphasize the need for a coherent public policy based on scientific data to facilitate the transition to sustainable agricultural practices, without compromising food security or ecosystem health.

1. Introduction

Romanian agriculture is at a turning point in terms of the use of phytosanitary products from the neonicotinoid class. This paper analyses the legal, ecological and economic implications of the prohibition of derogations for neonicotinoids starting from December 2024. This topic has generated intense debates among the main stakeholders: national authorities, large farmers, beekeepers and small agricultural producers.

The climax was represented by the decision of the Romanian judicial authorities, following a lawsuit filed by the Federation of Beekeeping Associations in Romania (ROMAPIS) and the EcoRuralis Association, which led to the suspension of the emergency authorisation on the use of neonicotinoids for the treatment of sunflower and corn seeds.

In this context, farmers are faced with the need to identify alternative solutions for the control of spring pests, which are viable both economically and ecologically. The study also aims to highlight the impact of restrictions on agricultural productivity and the environment, with a focus on the tense relationship between crop protection and biodiversity protection, especially pollinators.

*, **University of Agricultural Sciences and Veterinary Medicine of Bucharest, Romania. Email addresses: mociancati@gmail.com (E. C. Despa Mocian), turek.adrian@managusamv.ro (Corresponding author – A. Turek Rahoveanu).

The main aim of the research is to analyse the consequences of this decision from a multidisciplinary perspective and to provide an informative framework for future agricultural policies, with a view to a transition to sustainable agricultural practices, in line with the objectives of the European Green Deal.

2. Literature review

The literature on the use of neonicotinoids reflects a significant evolution in the scientific and regulatory perception of the impact of these substances. As early as 2013, the European Food Safety Authority (EFSA) published studies linking the use of neonicotinoids with the decline of bee colonies. Subsequently, in 2018, the European Commission extended the ban on these substances to outdoor crops, except for protected areas.

According to the studies presented by Mihai (2020), the effects of neonicotinoids on bees include: increased mortality rate, reduced feeding capacity, locomotor impairment, as well as decreased immunity. The results of the outdoor experiments confirmed the laboratory observations, strengthening the case for banning these substances at the EU level.

At the same time, the literature also highlights relevant economic and agronomic aspects. Numerous articles mention farmers' dependence on neonicotinoid-based treatments in the absence of effective alternative solutions. This problem is accentuated by the gradual reduction in the number of active substances available in the European Union – from 920 globally, only 277 are approved in the EU, of which 198 can be used in Romania (Dragomir, 2024).

The literature also analyses the role of agricultural policies in orienting farmers towards sustainable practices, emphasising the need for a balance between agricultural productivity and environmental protection.

3. Materials and methods

The research is based on a documentary and analytical approach, by consulting the following sources:

- official documents issued by the European Commission (EU), European Food Safety Authority (EFSA), European Parliament (EP), the Ministry of Agriculture and Rural Development (MADR), the National Phytosanitary Authority (ANF) and the Romanian Courts;
- scientific studies and reports on the impact of neonicotinoids on biodiversity, in particular pollinators;
- official statistics provided by the National Institute of Statistics on insecticide consumption in Romania in the period 2019–2023;
- secondary data on the structure and dynamics of the plant protection products market;
- information from the specialised press and press releases of professional organisations (ROMAPIS, EcoRuralis, Alliance for Agriculture and Cooperation).

The method used is a qualitative one, with elements of quantitative analysis where numerical data are available (e.g. the amount of active substance used annually).

A comparative analysis was also carried out between the period in which derogations were allowed and when they were suspended.

4. Results and discussions

The results analysed in this study confirm the existence of an agricultural-ecological conflict of interest, in which the need of farmers to protect crops collides with the need to protect the environment and biodiversity, especially bees.

Since 2013, the European Union has banned the use of neonicotinoids thanks to scientific studies that the European Food Safety Authority (EFSA) has submitted to the European Commission. These studies show that neonicotinoids are responsible for the decline of bee populations. In 2018, the European Union extended the ban to all crops that attract bees and other pollinators, except crops in protected areas. Despite all these documents that the European Union has issued, Romania has continued to grant exemptions for the use of prohibited products.

On 19 January 2023, the European Court rules that no Member State shall place on the market plant protection products for the treatment of seeds of the neonicotinoid class as well as seeds treated with these substances, even though these products have been expressly prohibited by an implementing regulation. (EU, 2023)

The authorisation for the emergency use of neonicotinoid-based products for the treatment of sunflower and corn seeds in the spring 2025 campaign provided that sowing with treated products will be done exclusively in areas and on surfaces strongly affected by the problem pests (ANF, 2024)

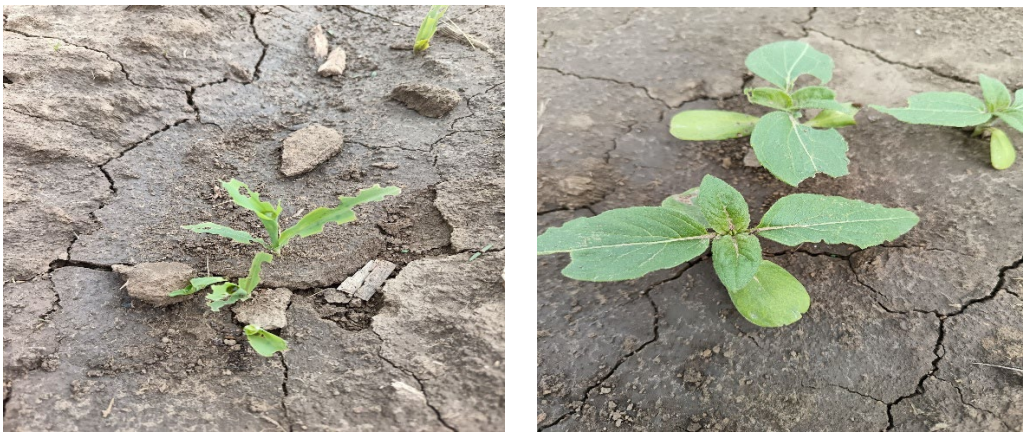

Photo 1 and 2: Spring crops affected by pests

Source: Photo from own source

The treatment of sunflower and corn seeds will be carried out only by authorised providers, and phytosanitary inspectors will carry out checks with service providers.

The Romanian authorities also give a motivation for these emergency derogations, where the main reasons why farmers are forced to use these substances are presented.

Here are some of the main reasons that are contained in the official document for the derogation:

- climate change leads to favourable pedoclimatic conditions for the emergence and development of pests;

- the areas in Romania are increasingly infested with pests, a problem that affects crop productivity.
- failure to apply an appropriate treatment at sowing requires treatments to be carried out in vegetation, with poorer results, which can lead to environmental pollution;
- there is currently no alternative for treating sunflower seeds to combat pests. (ANF, 2024)

As a result of the climate changes that Romania has been facing in recent years, the pest pressure in spring crops has become increasingly greater. Since in recent years no insecticide has been brought to the pesticide market in our country to combat the problem pests in field crops, Romanian farmers, together with the profile associations, have asked the Ministry of Agriculture and Rural Development for a derogation for neonicotinoids. These substances have had a limited period of use and marketing.

December 2024 was the last time the Alliance for Agriculture and Cooperation submitted to the Ministry of Agriculture and Cooperation a request regarding the granting of the authorisation for the treatment of sunflower and corn seeds with neonicotinoids.

According to data provided by the pesticide industry, in the last 5 years, the agricultural sector has seen a general decrease in crop protection products available on the European Union market, leading to the exhaustion of the solutions that farmers had to protect their crops. Thus, globally, there are currently about 920 active substances, of which, in the European Union, 277 active substances are approved for use, and in Romania, the farmer has 198 substances. (Dragomir, 2024)

4.1. Evolution of insecticide use in Romania (2020–2024)

Graphs 1 and 2 illustrate the evolution of insecticide use in large-scale crops, as well as the number of hectares treated with insecticides by Romanian farmers over the past five agricultural years.

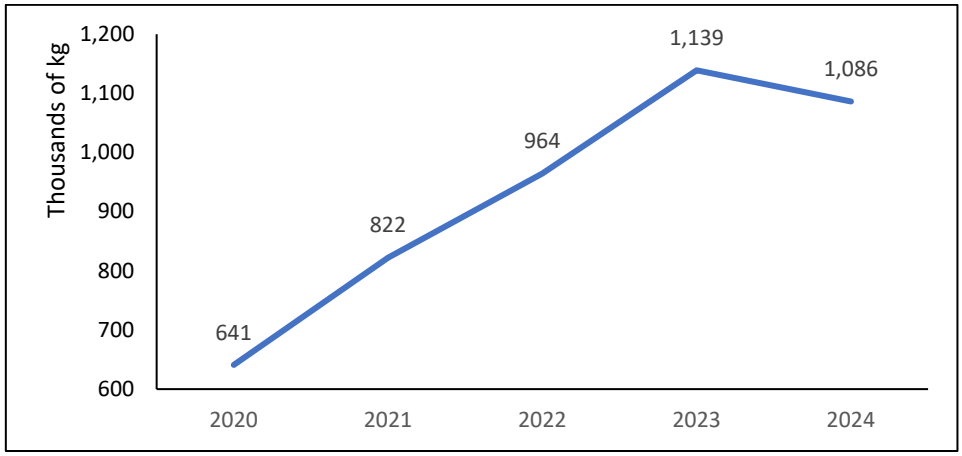

Figure 1. Evolution of insecticide quantities in the last 5 years (kg of active substance)

Source: National Institute of Statistics, Tempo Online (Evoluția cantităților de insecticide (substanță activă) în perioada 2020-2024, 2025)

For the Romanian farmer to continue his production activity without returning to important areas of spring crops that have been attacked or destroyed by pest problems, he must be allowed to use the best products for plant protection.

This will help avoid multiple applications in vegetation, which only increase production costs and pollute the soil.

In 2013, the European Food Safety Authority (EFSA) presented a study indicating that pesticides of the neonicotinoid class are harmful to bees.

As a result of this study, the European Union decided to restrict the use of three substances from the neonicotinoid class, which farmers used to treat sunflower seeds, corn, wheat, barley and rapeseed. (EFSA, 2013)

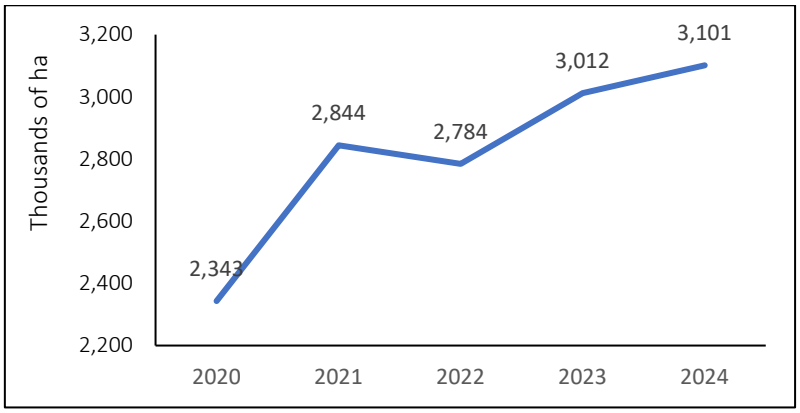

Figure 2. Evolution of agricultural areas treated with insecticide in the last 5 years

Source: National Institute of Statistics, Tempo Online (INS, Evoluția suprafețelor agricole tratate cu insecticide în perioada 2020-2024, 2025)

In 2018, EFSA returned with a new study on the impact of neonicotinoids on bee herds, and the European Commission prohibited member states from using the 3 substances to treat seeds sown in the open field, the substances being able to be used only in closed spaces.

As a result of the research carried out in the laboratory, the following effects on bee herds were found:

- increased mortality;
- feeding difficulties;
- impaired locomotion;
- impaired memory and learning ability;
- deficient immunity.

After seeing the conclusions of the research done in the laboratory, the decision was made that this research should also be done outdoors. Thus, the following conclusions were reached:

- bees show impaired ability to search for food;
- increased mortality among them;
- reduced colony development;

- poor feeding;
- reduced learning and memorisation capacity;
- queens with problems;
- low honey production;
- wintering with problems. (Dincă, 2020)

Beekeepers tell us that neonicotinoids are toxic to bees but also to other pollinator species, which show an increased sensitivity to these substances according to studies carried out so far (EP, 2011).

In Romania, interest in beekeeping has fluctuated in recent years, influenced by economic, climatic and health factors. Figure 3 illustrates the evolution of the number of bee colonies in the period 2020-2024, providing a clear picture of the trends and changes in this sector.

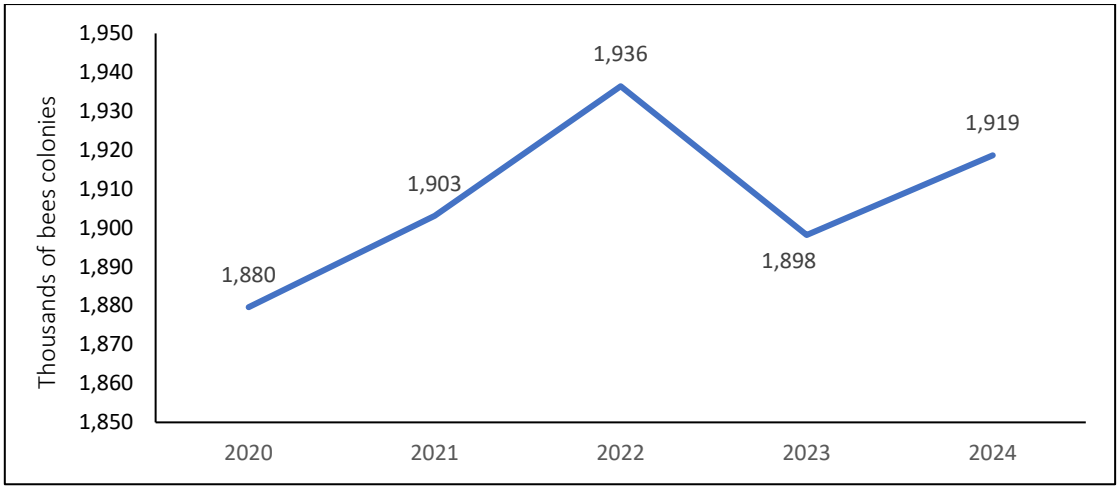

Figure 3. Evolution of bee colonies in Romania in the last 5 years

Source: National Institute of Statistics, Tempo Online (INS, Evoluția numărului de familii de albine în România 2020-2024, 2025)

These studies were also based on the decision of two organisations in Romania, the Federation of Beekeeping Associations in Romania, ROMAPIS and the EcoRuralis Association, to sue the Romanian authorities for suspending the derogation of neonicotinoids for the treatment of sunflower and corn seeds from December 2025. (Dobre, 2025)

As a result of the approach submitted by the two organisations, the competent legal authorities in Romania decided to suspend the emergency authorisation of neonicotinoids for seed treatment with immediate and enforceable effect. This means that any use or marketing of the neonicotinoids concerned must cease immediately.

The vice-president of the Federation of Beekeeping Associations in Romania (ROMAPIS), Constantin Dobrescu, said that this decision marks the end of a disastrous policy that has seriously affected the beekeeping sector in Romania and the entry into a normality that is being found throughout the rest of Europe. Romania must follow the example of European states that support ecological solutions instead of toxic solutions. (EcoRuralis, 2025)

5. Conclusions

In recent agricultural years, due to the climate changes that Romania has gone through, the pressure of pests on crops established in spring has been very high. This is also the main reason why farmers' associations have applied for emergency authorisation of neonicotinoids for seed treatment.

The lack of alternatives for treating sunflower seeds, but also the high costs per hectare for corn, led them to lean towards these products to the detriment of beekeepers. At this moment, we can say that Romanian beekeepers, together with small farmers, have won the battle with neonicotinoids.

For the farmer who used these substances, all that remains is to find alternatives through sustainable agricultural practices that no longer affect the ecosystem.

Neonicotinoid-based products have been widely used by farmers for over two decades if they are used according to the instructions written on the packaging by the manufacturer, they can be safe for both humans and the environment. It should be remembered that the use of these substances as a seed treatment is still allowed in countries outside the European Union.

In the current context, farmers are obliged to turn towards:

- agroecological technologies;
- Integrated pest management practices;
- increasing cultural diversity and rotation to reduce biological pressure;
- biological solutions and new-generation products, which are still in the process of testing and approval.

At the same time, a coherent agricultural policy is needed to support the transition through subsidies for sustainable alternatives, training, and applied research in the field of crop protection without major risk chemicals.

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