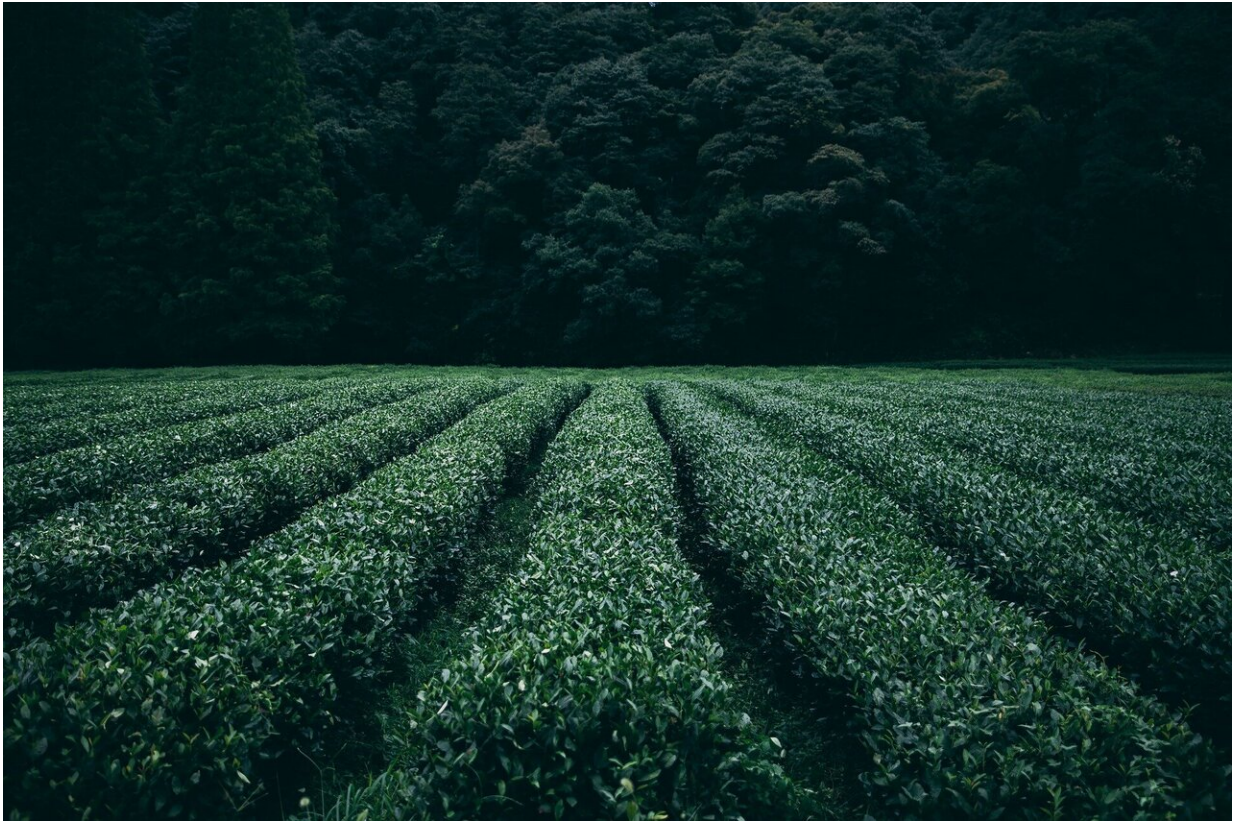


RNAi-based products: A sustainable alternative to hazardous pesticides

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RNAi-based biocontrol is a great alternative to hazardous pesticides and can contribute towards reversing the alarming decline in farmland birds and beneficial insects (especially pollinating ones).

RNAi is a well-known natural biological process in most organisms (plants, fungi and animals, including humans) that is based on RNA molecules. By creating technology based on this process, it is possible to protect crops and animals from a specific disease or [pest](#).

RNAi-based pest control products can be directly applied using current agricultural practices, such as spray application, trunk injection for [tree species](#), seed soaking, or root drenching through hydroponic systems in greenhouses. For example: you can inject a tree with an RNAi-based product to protect it from a certain disease or pest.

Advantages of RNAi

Compared to hazardous pesticides, RNAi-based products can be designed to be very specific to a pest or pathogen, leaving no negative side effects in the environment or to humankind.

The trend towards the development of RNAi-based products for application against crop pests and pathogens is favored because plants treated with these products are not considered to be genetically modified organisms (GMOs). Unlike GMOs, RNAi-based products delivered externally do not alter the organism's structure, they simply perform their [specific task](#), which is protecting the plant against pests or diseases.

Additionally, because of extensive research over the last few years, RNAi-based technology has a short development time and is affordable in cost, making it a truly interesting alternative to hazardous pesticides.

European Green Deal

The European Commission's Green Deal aims to reduce agrochemical inputs, such as pesticides, fertilizers, and antimicrobials, to achieve

greater sustainability and health, and reduce loss of biodiversity while ensuring continued crop protection. RNAi-based technology could be the ideal catalyst to help fulfill the commission's vision.

Technology based on RNA molecules isn't new. It's already been used in the medical world for the COVID-19 vaccine. As a spin-off of the coronavirus vaccine, the existing production capacity for RNA molecules may be ramped up exponentially in the near future to provide the global community with other types of RNA-based vaccines. The same platforms could be converted for use in the production of RNA molecules for agricultural purposes. This would further promote the cost-effective manufacture of sizable volumes of RNAi-based products needed for large-scale pesticide applications.

According to researchers, RNAi-based pest control is still a new concept for the main public and several key tasks will have to be accomplished to enable societal acceptance. The co-creation of new, effective and safe RNAi-based products in collaboration with stakeholders under the responsible research and innovation paradigm promoted by the EU, will help to foster greater knowledge and acceptance of technology. Furthermore, an advancement in understanding consumers' perception will facilitate the successful market introduction of RNAi-based, sustainable products for crop protection.

More information: Clauvis Nji Tizi Taning et al. Does RNAi-Based Technology Fit within EU Sustainability Goals?, *Trends in Biotechnology* (2020). [DOI: 10.1016/j.tibtech.2020.11.008](https://doi.org/10.1016/j.tibtech.2020.11.008)

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