

Environmental Impact of Nano Pesticides: A Comprehensive Review [†]

Gagandeep Kaur ¹, Vaibhav Mishra ^{1,*}

¹ Department of Forensic Science, (UIAHS), Chandigarh University, Mohali, Punjab, India; gkpanglia2622001@gmail.com (G.K.); vaibhavmishra674@gmail.com (V.M.);

* Correspondence: vaibhavmishra674@gmail.com (V.M.);

[†] Presented at 3rd National Conference on Environmental Toxicology: Impact on Human Health (Env-Tox 2024)

Received: 16.02.2024; Accepted: 20.03.2024; Published: 28.03.2024

Abstract: In today's era, involvement of pesticides in field of agriculture have become very vast and important. The rise in population leads to the increased demand of food, which requires the pesticides with brilliant working. Nowadays, in field of agriculture the use of nano pesticides is more favored over the common pesticides due to their application of safeguarding and increasing the productivity of food to meet the needs of population. Nano pesticides are mixture of chemicals, introduced using the nanotechnology and are used for protecting plants from pests and diseases. Nano pesticides are nanoparticles with size ranges between 1- 100 nanometers. These contain agrochemical ingredients (AcI) which are prepared using nanotechnology. On other hand along with advantages there are also disadvantages of solid nanoparticles like hazardous impact on non-targeted organism and microorganism. These have adverse effect on human health, aquatic life and can cause environmental toxicity and disturbance in ecosystem is also detected. This review article focuses on the environmental repercussions of nano pesticides and emphasizes the necessity of thorough evaluation of their long-term effects on ecosystems. Furthermore, it covers the types of nano pesticide formulation, their delivery system, and the toxicity of nano pesticides.

Keywords: ecosystem; toxicity; nano pesticides; pesticide formulation.

© 2024 by the authors. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Funding

None.

Acknowledgments

None.

Conflicts of Interest

The authors declare no conflict of interest.