



# Environmental Contamination of Pesticides and its Toxic Effects as Endocrine Disruptors

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**Editorial**

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**Abbreviations:** EPAUSA: The United States Environmental Protection Agency; EDCs: Endocrine System.

## Editorial

The intensive use of pesticides in agriculture inevitably leads to the fact that the residues of these agrochemicals can be detected in water, air and soil. In general, these residues degrade slowly, which is why they are widely distributed in the environment, and even present at low levels, they can cause damage to human health as well as wildlife, due to their toxic, carcinogenic, mutagenic nature and teratogenic [1-4]. This reality is cause for concern in society and the entire world, which is why in several countries there is restrictive legislation developed with the purpose of preserving natural resources and human health, which is little controlled and complied with. The United States Environmental Protection Agency (EPAUSA) [5] considers a set of guidelines whose purpose is to control those pesticides with great potential to contaminate water. They have verified the risks that pesticides represent for human health and the environment [6-8].

The introduction of horticulture in mountainous areas generates profound changes in the occupation of land and water, in traditional agricultural practices. In these areas, the potential risk of contamination is not only located in the soil, but also in surface runoff laden with pesticides that can infiltrate into groundwater or directly contaminate surface water, many of which are used for human consumption. as described by various specialists in the area of this type of research [6,7].

In addition to the accumulation of these persistent compounds in the environment, pesticides enter the human food chain directly through contaminated agricultural products and indirectly through the livestock food chain. These compounds accumulate in some vital organs and cause the development of poisoning of different severity. The long-term impacts of the indiscriminate use of pesticides, from the point of view of human health, can occur both from a single high-dose exposure as well as from low-dose exposures over a long period of time.

It is generally accepted that environmental exposure to agrochemicals during development can cause adverse effects on the morphology and functioning of the nervous system [9,10]. There are several classes of agrochemicals that can cause alterations in brain development by interfering with neuroendocrine function, which is related to the interactions between the nervous system and the endocrine system [11]. The term neuroendocrine refers to the interaction between the nervous system and the endocrine system. Pesticides mimic or antagonize the action of hormones, acting as endocrine disruptors (EDCs). The potential adverse effects of EDCs are multiple, which affect human development and regulation processes, but also affect wildlife habitat, even at extremely low doses, such as the levels at which environmental contaminants can be found. affect an organism causing alterations in the hormonal system and have neurological, reproductive, immunological and metabolic consequences, among others [11].

However, man is constantly exposed to mixtures of pesticides, either through occupational or environmental exposure (water, soil, air) or through the diet, but for several years there have been questions about the impact

of these factors. Environment in the occurrence of various pathologies. A particularly important problem is that environmental exposure to CDEs involves a mixture of substances, making it particularly difficult to associate health effects with a particular pollutant; In these cases, we must think that the problem is much more complex and that there may be a synergistic effect between the different CDEs and other polluting substances.

Therefore, it is necessary to warn about the toxicity of pesticides and establish more rigorous measures on the control of these substances, and even to leave aside the use of these substances, replacing them with natural sources or crops free of pesticides, with herbs. Aromatics near crops that repel pests, development of new agricultural technologies to reduce the use of pesticides that act as crocodile disruptors in health.

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