

Essay writing

**Title: The impact of crop
pesticide
contamination on
human health.**

The use of pesticide has become an integral part of modern agricultural practices. Majority of pesticides applied in agriculture are not target specific and during their application they also affect non-target organisms. Repetitive use of pesticide leads to loss of biodiversity. Continuous and non-judicious use of pesticide has leads to increase pesticide contamination in the environment. It is associated with various ecological and health problems. It leads to over three million poisoning cases annually and up to 220,000 deaths, primarily in emerging countries. Pesticides may present instantaneous danger to the user if applied inadequately or without appropriate knowledge of their toxic effects. Occupational exposure to pesticides repeatedly occurs in the case of agricultural workers in open fields and greenhouses, workers in the pesticide industry, and exterminators of house pests. Some are highly toxic and may cause serious illness and even death if spilled on the skin, inhaled, or otherwise used imprecisely. Potential future hazards to human health can be created by pesticide residues that may cause accumulation in the food chain and widespread contamination of the environment. Acute and chronic effect of pesticide contamination cause various carcinogenic, oncogenic, genotoxic and

teratogenic effect on the human being.

Pesticide contamination;

The major part of the pesticides applied in any area for a specific reason (about 99%) remain unused and it gets mixed with air, soil, water and causes harmful effects on the people, pets, and the environment. Many pesticides are not easily biodegradable and they remain persistent in the environment either remain on the soil surface, that is, soil contamination or leaching through the soil to the ground water, that is, water contamination. Through soil it may get into the air through wind and contaminate larger area, that is, air contamination. Pesticides contamination depend on the interactions between the physicochemical properties (vapour pressure, stability, solubility, pKa) of the pesticide, soil adsorption and soil persistence, the soil factors (pH, organic components, inorganic surfaces, soil moisture, soil microflora, soil fauna), the plant species, and the climatic variation. Also, the toxicity and dosage application of pesticide, the weather conditions prevailing after application, and persistency of pesticide in the environment could account for its adverse effects on the environment.

Pesticides Can Cause Three Types of Harmful

Effects;

1. Acute Effects: These may appear immediately or within 24 h after exposure to a pesticide. They can be measured more accurately and easily diagnosed than delayed effects. These effects are usually observable and often curable if appropriate medical treatment is given on time. For example nerve, skin, and eye irritation and damage, headaches, dizziness, nausea, fatigue, vomiting, abdominal pain and systemic poisoning. Because these symptoms are similar or identical to those caused by other illnesses, so often misdiagnosed and even occasionally cause fatal death. Major acute effects can cause respiratory problems, nervous system disorders, and aggravation of pre-existing conditions such as asthma.

2. Chronic effects: Chronic effects are those which do not appear even within 24 h after exposure to a pesticide. These effects from pesticides are problematic to study in humans because most people are exposed to low doses of pesticides and have delayed health effects.

Different types of chronic effects:

Carcinogenic effect: It includes many types of cancer in humans. For example: Leukemia, Non-Hodgkins lymphoma, Brain, Bone, Breast, Ovarian,

Prostate, Testicular and Liver cancers.

Bladder and colon cancer: Heterocyclic aromatic amines are found in several cases of bladder and colon cancer. The cancer incidence depends upon the intensity and time of exposure.

For example: Imazethapyr is extensively used in agriculture increased the risk of bladder cancer by 137% and colon cancer by 78%. Research showed that from total 20,646 applicator of this pesticide, 2907 develop cancer.

3. Allergic Effects: These are harmful effects that some people develop in response to some pesticides. These effects are not to be supposed to occur during a first exposure to a pesticide. The first exposure causes the body to develop repelling response but the later exposures result in the allergic response. This process is called sensitization, and the pesticides that cause allergic reaction are known as sensitizers. For example: Asthma or even life threatening shock, skin irritation, such as rash, blisters, or open sores, and eye and nose irritation, such as itchy, watery eyes and sneezing. Unfortunately, it is quite difficult to tell which person may develop allergy to which pesticide.

Conclusion:

Crop pesticide contamination poses a significant threat to human health, with potential acute and chronic consequences. It is crucial to raise awareness about this issue and implement effective measures to reduce pesticide usage, promote sustainable farming practices, and ensure rigorous testing and regulations. Protecting human health should be prioritized alongside agricultural productivity to safeguard both the present and future generations from the potential harmful effects of pesticide contamination.

References:

www.pestcidereform.org

Pesticide contamination and human health risk factor.