

## The Grave Health Concerns of Using (Rather Overusing) Pesticides.

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### Abstract:

Considering agricultural hub Indian farmers used pesticides as plant protection agent for boosting yield. Use of pesticides causes a range of human health problems like cancers and many others. Compared to the general population, who is exposed to substantially lower amounts of pesticide residues through food and water, agricultural worker have a higher risk of developing health issues as a result of pesticides. This article will not only enable the provision of key data about the carcinogenic risk related to the duration, type & degree of pesticidal exposure in all age groups, but will also aid in determining the risk of pesticidal residues in food & water which demand timely assessments.

**Key Words:** Pesticides, Agriculture, Occupational hazard

### Risks of Using, rather Overusing, Pesticides:

India is a nation which is recognized as one of the largest agricultural hubs. Agricultural planning and growth is a pivotal part of the country's GDP.[1] The process of development of agriculture is indeed highly dependent on the use of pesticides as a plant protection agent for boosting yield.[2] However, exposure to pesticides, both occupationally and environmentally, causes a range of human health problems.

Pesticides are said to be risk factors for various kinds of cancers including prostate cancer, head and neck cancers, brain cancer, kidney cancers, Non-Hodgkin's lymphoma, leukemia, bladder cancer, and colon cancer among others.[3-6] Furthermore, according to the previous research done regarding links between the use of concerning amounts of pesticides and increased risk of malignancies, an increase in leukemias, neuroblastoma, Wilms' tumor, soft-tissue sarcoma, Ewing's sarcoma, non-Hodgkin's lymphoma, and cancers of the brain, colorectum and testes have been reported. However, the data

provided by these studies is limited and not blindly reliable as the study has not evaluated the risk of an increase in cancer concerning to the duration of exposure, type of exposure, degree of exposure, age of the person, and the potential for case-response bias. It is noteworthy that many of the increased risks reported are of greater magnitude in children than those observed in studies of pesticide-exposed adults, suggesting that children may be particularly sensitive to the carcinogenic effects of pesticides.[7]

The risk is greater among people who are directly exposed to pesticides. This is mainly applicable to agricultural workers who apply pesticides to the crops.[8] They tend to have an elevated risk of developing health complications because of pesticides compared to the general population who are exposed to significantly lower levels of pesticide residues through food and water. However, the risk of pesticide residues in food and water also cannot be undermined and demands continuous regulation and assessment.

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### Preventing the Overuse and Injudicious Use of Pesticides: The Need of the Hour

The United Nations has predicted a huge population surge by the year 2050 (30% more people as compared to 2017) and most of this increase is predicted to be limited to the developing nations. According to the Food and Agriculture Organization of the United Nations (FAO), the expansion of agricultural land is estimated to account for only 20% of new food production. Whereas 80% of the concomitant rise in food production is expected to be attributed to increased yields and the number of times per year crops is grown on the existing agricultural land. According to the Food and Agriculture Organization of the United Nations (FAO), the expansion of agricultural land is estimated to account for only 20% of new food production. Whereas 80% of the concomitant rise in food production is expected to be attributed to increased yields and the number of times per year crops is grown on the existing agricultural land. Pesticides can help farmers avoid severe crop losses, thus they will continue to be used in agriculture and their use will only increase with time. Exposure to pesticides, on the other hand, will be an issue of grave concern for the population.[8] Thus tight regulation on their use must be advocated. Their safety limits as residues in food need to be assessed time and again. Prior research states that most pesticide residues in food fall within the safety limit bracket and do not pose a threat to human safety. However, an interesting finding reported from the same study, which cannot be overlooked, is that there has been an increase in the detection of pesticides in food that exceed permissible levels although it has not crossed the boundaries of safety. A point of consideration is that this research is based in a foreign setting and thus, the lack of adequate Indian data reinstates the need for assessing the safety limits of pesticide residues in Indian foodstuffs.[9]

### Practically Addressing the Concern:

Owing to the potential public health threat that pesticide residues are likely to cause, it is extremely important to adopt strict guidelines about the use of permissible amounts of pesticides in food, their time

of use, levels of pesticide residues in foodstuffs, and preventive methods to restrict the exposure of pesticides to individuals. Pesticide restrictions, particularly maximum residual limits, should be followed when food is sold or supplied (such as food aid). Individuals who are likely to encounter long-term pesticide exposure must be made aware of the same and also be educated about the use of protective pieces of equipment such as hand gloves and masks. Wherever possible, the use of pesticides should be avoided and if at all it cannot, then they must be used with utmost care and responsibility. There should be no scope for the use of carcinogenic pesticides at all. On the other hand, consumers should adopt a more hygienic approach to the consumption of fruits and vegetables by reducing the risk of ingestion by peeling or thoroughly washing fruits and vegetables. Literature review in the past has shown that, in most circumstances, processing (particularly washing, peeling, and cooking activities) results in significant decreases in residue levels in processed food.[10] Due to the concentration effect, preservation processes such as drying, greatly enhance the pesticide content in foodstuffs.[11]

Consumption of organic fruits and vegetables is also highly recommended to reduce exposure to chemical pesticides.[12] Novel techniques and methods for handling pesticides and managing their levels in foodstuffs must be adopted to keep their incidence of exposure to the minimum possible level.

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