

Pesticides in Vegetable and Food Commodities: Environment and Public Health Concern

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ABSTRACT

Haphazard use of pesticides in the field and stored food commodities for the control of insect and pest has been a serious problem from view of environment and public health. The nutritional value of these is suppressed due to addition of toxins. The increased trend of Non communicable disease and communicable diseases may have close relation with the nutritious value and life styles associated with. The impacts on health should be considered as important issues from the view of public health. The article gives emphasis on organic farming & Integrated Pest Management (IPM) to minimize the harm of chemicals. It is deemed essential to think again about the current trend of malnutrition & obesity overweight among the Nepalese people and relationship with pesticides on the foods and vegetables.

Keywords: foods; health impacts; pesticides; public health; vegetables.

INTRODUCTION

It is suggested to take sufficient fruit and vegetables as a part of the diet to maintain healthy body and keep free from the diseases¹. This is true for those people who are economically capable and keep sufficient knowledge about the tips for healthy life. In developing and underdeveloped countries, most of the people neither have knowledge about nutrition nor get sufficient food to fill-up their stomach. In such circumstances, it has no meaning to advocate taking sufficient fruit and vegetables with their meal. Most of the people in the developing world do not know about the status of food products they consume. Their concern is how to neutralize the apatite and eat whatever is available. In order to be healthy, the consumed food should be safe and with sufficient calories. Nepal is a country where most of the people are living under malnutrition. This is indeed a serious public health problem from view point of nutritionist but at the same time obesity and overweight is also emerging as another health problem among the people in few Nepalese communities. The

obesity and over weight is mostly due to consumption of foods full of calories but no physical activities. Similarly, the food behavior and living style also cause a number of health problems such as hypertension, cardiovascular disorder and dubieties Miletus².

CURRENT SITUATION

When such pesticides are exposed to environment, they affect environmental quality by polluting air, water, and soil and also cause problems. The common health complications caused due to pesticide exposure in humans are; kidney failure, nervous system disorder, liver problems etc^{3,4}. These are lethal to chronic based on the dose of exposure, nature of pesticides and route of exposure.

The haphazard usage of pesticides has worsened the situation. With uncontrolled use of pesticides, the predators (useful pest) also destroyed which eventually affect natural ecosystem and the food items are filled with toxins in the form of chemicals and vitamins for plants. Government has banned some of pesticides to

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use in Nepal but they are still coming from open borders & other sources.

Most of the foods and vegetables are coming in valley from nearby districts. To give fresh and natural look, the chemicals are added even at the point of sale. Talking about canned foods, they are already full of preservatives to save it from decay.

Recently the government has initiated a monitoring system in Kathmandu at Kalimati vegetables market to check the pesticides and chemicals in vegetables. The program is still full of challenges as not having proper law⁵. The farmers are against it since they cannot grow food and vegetables without chemicals. It would be better to have alternative first before disclosing the information. The public have got big psychological doubt & threat of toxins in foods.

RISK TO FUTURE

We need to eat what is safe and healthy. As we are not safe from chemical and pesticides exposure in the forms of foods, we need to rethink about our future what we are going to live. What we are going to be tomorrow and how we are going to have offspring in future as the quality of food and vegetables is full of toxins. It is obvious that the toxin won't consider that we are from Nepal that will produce more and more effects as like cancer, kidney problems, pesticides poisoning, allergies and ranging from small scale fatalities to the death etc. Also, the symptoms of respiratory illness in children are closely associated with chemical exposure⁶ & low birth weight as the pregnant mothers⁷ have exposure to toxins.

There is strong evidence that the gene of human may be mutated⁸ due to use of such chemicals in the form of fertilizer to grow, pesticide to control pest and others vitamins to grow and have maximum agricultural efficiency. At the same time we forget to talk about ourselves, what we need to eat more food or adequate nutritious food which is free from toxins. Entomology Division under Nepal agriculture research council⁹ has done some monitoring technologies still which have full challenges.

Considering the present evidence and trend of diseases as discussed, the current trend may continue to future. It is evident that the prevalence of Non communicable diseases will be more as we are consuming chemicals in our daily life. It is not mean to say communicable disease won't be problems, though it is foreseen that the immunology of body will be suppressed which will

lead more and more complex disease. We need to think whether we are ready to tackle with such problems.

REGULATORY PROVISION

Pesticide act, 1992 and pesticide regulation, 1994 were formulated for overall management of pesticides. The act and regulation were formulated to regulate import, export, production, marketing and use of pesticides in Nepal. The act has a provision to establish a pesticide registration agency to register appropriate pesticides, issue certificates and develop guidelines for their proper use. There will be restriction to import, export, production, marketing and use of unlisted pesticides and a license will be required for the formulation, marketing and professional use of listed pesticides. The act also provides for the appointment of pesticide inspectors who will have the authority to seize any pesticide being imported or sold in contrary to this act and regulations.

Nepal does not have specific agency to look after the management of hazardous wastes including pesticides. The ministry of agriculture is the sole agency responsible for regulation of pesticides in Nepal. In the absence of exclusive regulating body, there is no specific implementing agency to monitor, generate, storage, and transportation of such materials in Nepal. However, at present, the government of Nepal has prepared a draft policy on hazardous waste management to look after the management of hazardous wastes.

RECOMMENDATIONS

Following recommendations can be drawn based on the practices of pesticide usages in Nepal.

- Suggested to form a separate pesticide regulating body to formulate, import, and usage of pesticides within the country
- Organic farming and IPM should be encouraged and implemented.

CONCLUSIONS

Haphazard use of pesticides causes environmental and public health problems. Environmental threats of pesticide exposure include water pollution, air pollution and soil pollution. When exposed to human body, pesticides accumulate in different body organ and tissues and cause a number of health problems by damaging physiological system. Keeping in view the threat of pesticides, farmers should be encouraged and educated for organic farming. The accepted method of pest control i.e. Integrated Pest Management (IPM)

system should be adopted and gradually replace the chemical pesticides.

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