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Impact of Pesticides on Human Health Poonam Bharti

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ABSTRACT

Pesticides like herbicides, insecticides, fungicides, weedicides, fumigants and rodenticides are chemicals used to increase agricultural production and for prevention of diseased in crops, however rodenticides used to kill rats. There has been a long concern about environmental pollution and human health. The estimated world wide use in 2007 was 5211 millions pounds of active ingredients. Human occupational exposure during pesticide production and application through contamination of water, food supplies and food chain. Pesticides used for vector control and elimination of pests in an important source of exposure of world population which showed deleterious effects on children, elderly persons and developing foetuses.

The human health effects may be acute or chronic results in mild's to fatal disease and disorders. Keywords: Pesticides, Human health, Acute or Chronic diseases and Food chain.

INTRODUCTION

Pesticides are substances which are utilised to control pests, and weeds. Pesticides are widely used chemicals in agriculture, intended to preserve and increase the productivity of crops (Costa et al., 2015). Pesticides are designed to benefit the human population but opponents claim that due to its chemical value it has several negative impacts on human health. It is estimated that use of pesticides has increased by 80 % over the past two decades. Pesticides spread in the environment can cause long term diseases. There is no doubt, pesticides help to control insects and rodents, they also prevent the spread of disease and protect buildings from termite infestations. Although pesticides are designed to benefit humans, this essay will argue that pesticides applied to plants can cause significant health issues for humans by affecting the environment, agriculture and encourages gene mutation and is therefore not beneficial to human health.

Pesticides can have a negative impact on human health because they harm the environment. It is claimed that pesticides are widely used to control the vectors of diseases such as malaria and contribute to the prevention of vector-borne diseases (Newsome, Davies, 1995). Furthermore, among different classes of pesticides, Organochlorines is known as a famous pesticide which is widely used for their persistence, low cost, and toxicity against various pests. For example, the main anti- malaria measures have been the use of chlorinated hydrocarbons as a residual spraying against the adults and larvae of malaria vectors in some areas during the World War 2 and it was successful in controlling the louse-borne typhus and malaria (Omer, Georghiou and Irving, 1980). Hence, pesticides can be used to kill the vectors of malaria and help in preventing malaria.

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However, other alternative medicines which could cure malaria are already available and can be put into use (Johnson and Strinchcombe, (2007). Thus, even if pesticides help in reducing the intensity of vector-borne diseases, other alternative sources could possibly be a better approach towards preventing and curing of Malaria. Further to this, Zacharia and James Tano (2011) suggested that pesticides released to the environment have detrimental impact on human health which can cause long term to short term health effects by changing the normal function of environment. Normal function of environment includes food chain which is being affected by pesticides. Zacharia and Tano also state that Pesticides that are sprayed directly on food and plants affect the human health by causing side effects. Hence, the use of pesticides result in the damage of food chain which keeps the environment functionality balanced. Additionally, the air can be easily contaminated by the spraying of pesticides which decreases air quality. Decreased air quality results in respiratory diseases in humans, asthma being an example. Thus, pesticides result in harmful effects on the environment such as soil and air. Thus, the environment around the farms have been damaged by pesticides because of its chemical value thereby having major ill-effects towards nurturing the environment even if they were put in use as preventive measures.

Pesticides are harmful for the human health because it can affect the agriculture directly. Pesticides are used to increase the production of crop. Furthermore, pesticides applied on the crop negatively affect human health. Additionally, humans who work in the farms and live nearby the farms get affected by the pesticides. In developing countries, lack of education of pesticides is another factor of diseases caused by it. Therefore, people who can not read given instruction of how to use may easily get affected by pesticides. Pesticides applied in the agriculture find their way into homes, exposing resident in agricultural communities to pesticides, even those agri- culture work which directly affect the human health (Stern et al., 1959). As a result of this, the population which is not in direct contact with the pesticides possibly bears the negative effects of pesticides. Zacharia and James Tano (2011) consider Organochlorine pesticides as an example, they have shown to be persistent in the environment which results in contaminating the ground water, soil, food products and they all may affect the human health through direct contact. Hence, direct contact of pesticides can cause skin disease, respiratory disease, and reproductive diseases. Therefore, this aspect of pesticides raised a concern among the scientist to study about their adverse effect on human health through agriculture. Pesticides can cause severe long term genetic disorder by gene mutation. Parkinson disease is one of the most common genetic disorders which affect the health directly (Caudl, Guillot, Lazo, et al., 2012). Furthermore, Parkinson disease caused by the excessive intake of pesticide in humans. This method of intake of pesticides can be direct and indirect, in the direct way of consumption it is usually consume through air and water and on the other hand in indirect way of consumption of pesticides is through the food chain. Pesticides often ex-pose children through air spray. Moreover, chronic disease such as Parkinson disease is especially challenging because exposure of pesticides may take long life health effect. For example in California, over the past decade assessment of long term affect of population based pesticides exposure reported PUR system to explore genetic diseases (Ritz et al. (2016). PUR system is based on the law to produce the report for pesticides exposure against the genetic disease. Therefore, exposure to pesticides to the future generation will probably leave them with unwanted complication in their genes. Moreover, the PUR revealed a monitoring study conducted in a small elementary school roofs over one-year period and found twenty-three pesticides known to be applied in the area. This exposure can cause long term genetic diseases in humans (Wofford, Segawa, Schreider, et al. 2014). Thus, pesticides application in gardens find their way to homes, schools, even to those who are not involved in the use of pesticides thereby causing long term genetic disorders.

This essay has shown many aspects of negative impacts of pesticides over human health. Environment deterioration being the vital aspect, the pesticide usage has led to imbalance in the food chain thereby creating an hazard to biotic and abiotic living. Secondly, as the pesticides are directly connected with agriculture, the food to eat and the water to drink are being contaminated by the use of pesticides. Finally, long terms effects of pesticides are being introduced thereby affecting the future generations with reduced brain functionality. Hence despite of its involvement in increasing the yield of the crops, the use of pesticides should be minimised so as to conserve the Environment, continue Agricultural practices that leads to protect the human health.

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