

Pesticides and Cancer: The Use of Pesticides in the Developing Country

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Editorial

The use of pesticides has been on increase worldwide for the last sixty years [1]. In developed countries the levels of exposure have been sharply reduced they however, still remain high in the developed countries which is causing serious human health problems. This is due to uncontrolled and unregulated use of synthetic pesticides in agriculture which will reach our bodies through the fruits and vegetables we eat. A World Health Organization/United Nations working group estimated in a 1990 report, "Public Health Impact of Pesticides Used in Agriculture", that 3 million people, mostly in the developing countries, suffer acute pesticides poisonings each year.

Growing body of experimental evidences has shown that there is a link between pesticides and cancer. The British Medical Association (BMA), in its 1990 report, "Pesticides, Chemicals and Health," provided detailed studies linked the pesticides use with different forms of cancer among farmers which include lymphomas, leukaemia, myeloma, prostate cancer and soft tissue sarcomas. Hepatocellular carcinoma (HCC), the major primary malignant tumor of liver, is the sixth most common cancer and the third-leading cause of cancer-related deaths worldwide [2]. HCC has been linked to one of pesticides, DDT, dichlorodiphenyltrichloroethane which exists in our diet [3].

Due to the fact that we would not be able to stop the use of pesticides, at least in the time being, the modern biotechnologies and techniques could play an important part of getting rid of remaining pesticides from the environment and minimize the risk of these pollutants on human health. Microorganisms play a significant role in the degradation or detoxification of many of these pesticides [4,5].

The enzymes from these microorganisms however, are not optimized to work on industrial scale. Modifying these enzymes to produce ultra-active variants for the detoxification of the pesticides would be a huge benefit for human health.

DNA shuffling, also known as molecular breeding, is a technology that enables the generation of large libraries of novel genes from which improved variants can be selected based on functional properties [6]. This technology have been implemented to produce novel enzyme variants to efficiently biodegrade pollutants [7-9].

In addition to the application of science and technology there is a need to rigorous legislation and regulations to control pesticides as well as educational program for awareness of the public as well as personnel involved in pesticides industries.

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