

PS-012. Human Health Effects of Pesticide Residues

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Pesticides have been used in the second half of the twentieth century. Although the agricultural benefits; residues, durability, pollution and health problems resulting from irrational and uncontrolled application have been shown up and pesticide use has become increasingly questionable. Pesticides pose significant risks for the whole society, especially those who are working in the manufacturing and agriculture. Organophosphate pesticides which are highly toxic and their retention is up to 12 weeks, are the most widely used ones. Organophosphate exposure has been found to cause permanent nervous system damage. Organochlorine pesticides are forbidden in our country along with many other developed countries since 1970s but the effects are still continuing. They can exist on the plants and soil for a long time (30-40 years) and have very long half-lives. Residues have been measured in air, water, sediment and fish. Due to daily intake and environmental exposure these chemicals accumulate in the human body. Even very low levels of pesticide residues are known to cause a variety of diseases. Scientific studies have shown that many of the pesticides are carcinogenic, mutagenic, neurotoxic and can cause many chronic effects such as sterility, birth defects and endocrine disorders. In a study made by D.W.Knipe and colleagues on 50 hair samples, above 80% was found to be diethylphosphate positive. Studies show that individuals exposed to pesticides and dealing with agriculture compared to those not exposed to these compounds have structural and numerical chromosome aberrations with repeated high rates of sister chromatid exchange. Various preventions should be taken against the adverse effects of pesticides for human and environmental health. In order to minimize the amount of pesticide residues; appropriate time and dosage of pesticide use, manufacturers' education and consumers' awareness should be provided. Safe use of these products is important for the protection of public health.

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