

Status of persistent organic pesticide residues in water and food and their effects on environment and farmers: a comprehensive review in Nigeria

ABSTRACT

Pesticide helps to enhance agricultural production, however, it significantly affect both socio and environmental entities of a country. In Nigeria, pesticide is widely used, thus its traces have been detected in water, soil and air. Several studies have already indicated that most of the environmental ecology (air, water, and soil) in Nigeria has been contaminated by persistent organic pesticides like organochlorine and organophosphate. Other reasons of high pesticide residues present in Nigeria environment is due to inappropriate dosage applied of pesticides that leaves behind excess. However, its residues are found above safety levels in the air, water, and soil across the nation. Based on previous analysis, it is indicated that 125,000-130,000 metric ton pesticides are being applied annually in Nigeria. Despite banned of some pesticides such as dichlorodiphenyltrichloroethane- and -Hexachlorocyclohexane, they are still being used by farmers in their agricultural production. Many of the Class 1 (high extremely toxic) pesticides are still being used in developing countries like Nigeria. Hence, there is need to sensitize and educate the general public especially the end-users (farmers) particularly on management practices of pesticides. Considering these entire hazardous situations, in this article the history of pesticide used in Nigeria has been reviewed in detail. The article also discussed the effects of pesticide use in Nigerian waters, soil and on crops. The risk of residual pesticide on agricultural workers, pesticide residue risk preventive measures by the Federal Government of Nigeria, banned and restricted pesticides in Nigeria, Nigerian Government and its efforts to eliminate persistent organic pesticides in use are also reviewed in details.

Keyword: Organic pesticide; Organochlorine; Organophosphate; DDT; HCH; Residue

