Agriculture Development, Pesticide Application and Its Impact on the Environment: extended analysis

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Pesticides are indispensable in agricultural production. They have been used by farmers to control weeds and insects, and their remarkable increases in agricultural products have been reported. The increase in the world's population in the 20th century could not have been possible without a parallel increase in food production. About one-third of agricultural products are produced depending on the application of pesticides. Without the use of pesticides, there would be a 78% loss of fruit production, a 54% loss of vegetable production, and a 32% loss of cereal production. Therefore, pesticides play a critical role in reducing diseases and increasing crop yields worldwide. Thus, it is essential to discuss the agricultural development process; the historical perspective, types and specific uses of pesticides; and pesticide behavior, its contamination, and adverse effects on the natural environment. The review study indicates that agricultural development has a long history in many places around the world. The history of pesticide use can be divided into three periods of time. Pesticides are classified by different classification terms such as chemical classes, functional groups, modes of action, and toxicity. Pesticides are used to kill pests and control weeds using chemical ingredients; hence, they can also be toxic to other organisms, including birds, fish, beneficial insects, and non-target plants, as well as air, water, soil, and crops. Moreover, pesticide contamination moves away from the target plants, resulting in environmental pollution. Such chemical residues impact human health through environmental and food contamination. In addition, climate change-related factors also impact on pesticide application and result in increased pesticide usage and pesticide pollution. Therefore, this review will provide the scientific information necessary for pesticide application and management in the future.

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