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QuEChERS: A Microextraction Technique for Pesticide Residue Analysis in Food Commodities

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Abstract: *Pesticide residues in food commodities has become a major cause of concern all-over the world. Analysis of pesticide residues from vegetable and fruit samples to ensure the safety of consumers is becoming increasingly important. The most important step of any analytical methodologies is sample preparation step because it determines the efficiency of any method. A good microextraction technique reduces the sample and solvent volume, maintaining the high performance, low-cost and improvement of the sampling steps such as extraction, concentration, isolation of analytes, and clean-up. Lots of analytical methods are developed to analysed multiple pesticide residues analysis and contaminantcontroloffoodproducts,feedstuff,andenvironmentalsamples. While in starting, the QuEChERS was introduced for pesticides residues analysis in fruits and vegetables, but over a period of time, it is gaining significant popularity in the analysis of wide spectrum of analytes. QuEChERS method provided high quality results in a fast, easy, an inexpensive approach. The method is very effective and gives recovery for most of the pesticides in the range of 80 -120 percent and the ruggedness of the method is evident from reproducibility, repeatability being within acceptable range in all the tested samples. Liquid-liquid partitioning using acetonitrile and purifying the extract using dispersive solid-phase extraction (d-SPE) is the key point of this method. The objective of this paper is to give an overview of the benefit of QuEChERS and the recent developments in the QuEChERS (quick, easy, cheap, effective, rugged, and safe) approach for sample preparation.*

Keywords: Pesticides, Pesticide Residue Analysis, Food, QuEChERS Method

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