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Detection of Pesticides in Buffalo Milk Collected from Different Areas of Gandhinagar and Ahmedabad by Thin Layer Chromatography

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Abstract: Different pesticides have been used in tropical countries to control agricultural pests. Problem of the presence of pesticides in milk contributes to the serious issue of human health. The identification of organophosphorous (chlorpyrifos) pesticides in buffalo milk collected from different localities of Gandhinagar and Ahmedabad was performed.

Milk was monitored by using TLC (thin layer chromatography) technique for 3 pesticides residues namely Dichlorovos, Chlorpyrifos and DDT (dichlorodiphenyltrichloroethane) to determine the degree of contamination. Extraction was performed with Hexane: Acetone: 1:1. Extracted milk samples spotted on TLC with pesticides standards. The analysis showed that most of the milk samples were contaminated by the pesticides. Identification of pesticides was done through RF (Retention factor) value and color of the spot developed after spraying the reagent with the standards. Confirmation of pesticides was done through GC-MS. Results showed that 40 % of the milk samples were contaminated with pesticides residues of organophosphorous (chlorpyrifos) was mostsignificantly present in milk samples. The intake of the pesticide contaminated milk might pose health hazardous to humans in thislocal.

Keywords: Pesticides, Residues, TLC, Buffalo milk, Contamination, Gandhinagar and Ahmedabad.

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