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Monitoring of certain pesticide residues and some heavy metals in cattle

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Abstract Monitoring study of 50 samples of cattle milk collected from different locations at Hyderabad during different seasons of the years 2011-12 was taken up to determine the contamination levels of seven pesticide residues including four organophosphorus (chlorpyrifos, dimethoate and malathion) and three synthetic pyrethroides (cypermethrin, deltamethrin and fenvalerate), as well as five heavy metals (copper, iron, cadmium, zinc and lead). The results showed that there were no contamination with investigated pesticide residues found in all analyzed samples, except for malathion which was detected in a single sample with a negligible existence (0.018 mg kg^{-1}), by ratio of (0.02%) of all samples. With regard to heavy metals detection, all milk samples were contaminated with heavy metals all year around. The contamination with heavy metals was generally dominant at summer season. Level of lead was higher than other metals. The mean levels of Cu, Fe, Cd, Zn and Pb were 0.251, 0.607, 0.159, 0.371 and 2.462 mg kg^{-1} , respectively. Cu, Fe and Zn level were under the permissible limits, while the Cd and Pb were exceeded the permissible limits, indicating serious heavy metals pollution in the region.

Keywords pesticide residues; organophosphorus; pyrethroides