08-2: Drug and chemical residues in camel milk in Nanyuki, Kenya

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This study identified and quantified selected chemical and drug residues in camel milk in Nanyuki, Kenya. Samples (n=15) were collected and analyzed at University of Nairobi, Department of Public Health Pharmacology and Toxicology laboratory. Twenty three (23) types of residues including heavy metals, trypanocides, anthelmintics, pesticides and aflatoxins were analysed. The methods for analysis of chemical residues were Atomic Absorption Spectrophotometry (AAS) for heavy metals, Gas Liquid Chromatography (GLC) for chlorinated hydrocarbons and organophosphates pesticides and Enzyme Immunosorbent Assay (ELISA) for aflatoxins. Analysis for veterinary drug residues was done using High Performance Liquid Chromatography (HPLC). Out of the 23 types of residues, 14(60.9%) were detected while 9(39.1%) were not present at detectable levels. In milk samples, chemical and drug residues which were detected included: arsenic, lead, heptachlor epoxide, aldrin, 2'4'DDT, 4'4'DDT 4'4'DDD, endrin, deltamethrin and cypermethrin. However, in all samples the following were not detected: lindane, 4'4'DDE, 2'4'DDD, dimethoate, diazinon, malathion, fenthion, diminazine aceturate, hominidium bromide, albendazole, levamizole and aflatoxins M_1. Lead and arsenic were detected in all samples at concentrations ranging from 0.072 to 0.449 ppm and 0.007 to 0.099 ppm, respectively. It was concluded that for most of the test substances the residues levels were within permitted maximum residue limits (MRL) and acceptable daily intakes (ADI). However, some samples contained levels of lead and some pesticides above MRL and ADI. This was a preliminary study and it is recommended that a comprehensive study be conducted to assess the safety of camel milk in Kenya with regard to drug and chemical residues.

Key words: chemical, drug, residues, camel, Nanyuki, Kenya