

PD 015

How much is the intake of pesticide through our daily milk? (Development of pesticide residue analysis)

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Bovine milk is one of the most widely consumed product mainly by the infants. Its quality as well as contamination of not-intentionally added substances need a constant monitoring study like organochlorinated compounds due to their lipophilic characteristics and persistence in the environment. Substances employed during food production as veterinary drugs, pesticides to control agricultural and animal pests are a concern in any kind of food as a consequence of the increase of their usage. Technological advances in analytical instrument and in sample preparation are procedures that might be applied to investigate and to obtain a more efficient and confident data. These advances help to detect lower concentration of undesired components in foods leading to understand better how they can influence our health. In this work, a development of analytical method to quantify 60 major pesticides and metabolites that are more likely to be found using the GC/MS/MS Triple Quadrupole system with QuEChERS sample preparation method were evaluated. The most consumed and available type of milk, Ultra-heat treated (UHT), was purchased locally selecting 14 brands available in supermarkets in two different periods with 6 months of interval. The low detection limit of the method (LOD) ranging between 0.0005 mg/Kg and 0.0369 mg/Kg and limit of quantification (LOQ) between 0.004 to 0.1 mg/Kg made possible to detect residues in some samples. The quadrupole systems offer more selectivity and sensitivity than conventional GC detectors giving more confident results. Some samples presented traces of pesticides below the maximum residue limits established by Brazilian Ministry of Agriculture, Livestock and food Supply and Codex Alimentarius and it was determined as LOQ of this method. The result of the analysis indicates the importance of correct application of drugs to parasite control and environmental contamination of the grassland/feed.