

**THE ANALYSIS OF CHLORINE AND ORGANOCHLORINE  
PESTICIDES (OCPs) CONTENT IN FRESH DAIRY MILK**

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## **ABSTRACT**

### **THE ANALYSIS OF CHLORINE AND ORGANOCHLORINE PESTICIDES (OCPs) CONTENT IN FRESH DAIRY MILK**

Since 1970's, the dairy industry in Malaysia has shown a remarkable growth. As there is an increase in the local demand of dairy milk, an appropriate and thorough research is in need to confirm whether there is any contamination occurs in fresh dairy milk, especially from the excessive usage of chlorine and traces of OCPs which are harmful to human consumption. This analysis is done to analyze the total chlorine content and to determine whether there is a presence of OCPs in milk. This analysis has been done using Mohr titration method for the analysis of total chlorine content and milk extraction and treatment using liquid-liquid extraction (LLE) or solid phase extraction (SPE) with GC / MS technique. From the analyses done, the total chlorine content of six different milk samples shows that the range is between 4.1834 mg and 6.0814 mg. As for the analysis using GC / MS, eldrin, a type of OCPs was found in one of the analyzed milk sample. However, other chemical groups such as butylated alkylphenols, plasticizers, antimicrobial chemicals, fatty acids, furfural and its derivatives, and natural insecticide and antifeedant, by which some of them are toxic for human consumption. In conclusion, the average total chlorine content in analyzed dairy milk samples is less than the recommended total chlorine intake as recommended by US National Library of Medicine and the World Health Organization (WHO). There is only one OCPs residue present in one of the analyzed milk samples. However other toxic contaminants were found in the samples, proving the occurrence of food contamination in dairy milk manufacturing process.