

## MAGNESIUM AS A MARKER IN DETECTION AND QUANTIFICATION OF ADULTERATION WITH DOLOMITE IN DOMIATI CHEESE

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### ABSTRACT

This work presents novel and very simple method for the simultaneous determination and detection of magnesium as a marker element that contained in adulterated domiati cheese with dolomite. Formulated domiati cheese samples were prepared with 0, 3, 6 and 9% commercial Dolomite. Six cheese samples were collected from the local market in two different governorates Cairo and Giza. Three methods have been used to determine elements in the cheese samples, plasma ICP-spectrometry, atomic absorption and titration method with EDTA (disodium dihydrogen-ethylene diamine tetraacetate). Ca, Mg, Mn, Fe, Na, K, Ni, Cu, Zn and Pb elements were detected by atomic absorption. Titration with EDTA and ICP methods used to detect Ca and Mg elements. Values that measured by ICP method was found to be not correlated with the percent of dolomite contained in the spiked samples. Strong correlation coefficient (0.968) of Mg concentration and dolomite percentage was reported in titration with EDTA method which is a simply and clearly detect the possible adulteration with dolomite via Ca and Mg concentration in tested cheese samplaes.

**KEYWORDS:** Ca, Mg, Minerals, Atomic Absorption, ICP, Titration with EDTA, Adultration, Domiati Cheese