

TRACE METAL ANALYSIS OF ORGANIC VEGETABLES SOLD IN SOME SUPERMARKETS IN MANILA, PHILIPPINES

Vicente Luis M. Medenilla, Neil Adri, Rafael A. Espiritu*

Department of Chemistry, De La Salle University, 2401 Taft Avenue, Manila 0922, Philippines;
*rafael.espiritu@dlsu.edu.ph

Article history:

Received

30 October 2016

Accepted

17 August 2018

Keywords:

Atomic absorption;

Spectroscopy;

Organic food;

Trace metal analysis;

Vegetables.

ABSTRACT

Recent years have seen the rapid growth of the *organic* food products industry, primarily driven by the consumers' desire for a healthier lifestyle. Similar to worldwide trend, explicitly-labeled "Organic" food products have become ubiquitous in the Philippines, with the consumers most of the time having no information on the quality of the products. In the Philippine setting, very few researches have focused on the analysis of *organic* vegetables, and in this study, the trace-metal (cadmium, copper, iron, nickel, and zinc) concentration of specific organic and conventional vegetables (cabbage, celery, leek, lettuce, and spinach) that are being sold in some shops in the cities of Makati and Manila, Philippines were determined using atomic absorption spectroscopy. The mean concentration for copper, iron, nickel and zinc in the samples were calculated to be between 0.0146-0.881 mg/kg, 0.648-13.1 mg/kg, 0.0409-2.04 mg/kg, and 0.266-2.87 mg/kg, respectively, while cadmium levels varied from 0.005-0.772 mg/kg (with some samples below the limit of detection). Nevertheless, statistical analysis ($p < 0.05$) showed more organic vegetables having no significant differences than conventional ones indicating that in terms of the content of these trace metals, being organic may not necessarily mean better.
