

**DETERMINATION OF Cr, Cd, and Zn IN LOCAL VEGETABLES
USING ATOMIC ABSORPTION SPECTROMETRIC TECHNIQUE**

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ABSTRACT

DETERMINATION OF Cr, Cd, and Zn IN LOCAL VEGETABLES USING ATOMIC ABSORPTION SPECTROSCOPY (AAS)

Each plants species has its nutritive requirements different from others. Thus different plants have similar nutritive environment will contain minor and macro elements of different concentrations. The main objectives of the study are to identify the heavy metals present in the samples using Atomic Absorption Spectroscopy (AAS). In this experiment, three samples of vegetables were obtained from wet market in Shah Alam which were spinach, water spinach, and mustard leaves and was characterized using Atomic Absorption Spectroscopy (AAS). Mustard leaf has highest total concentration of metals where the value was 0.3348 mg/g. Concentration of Cr and Cd were highest in spinach and mustard leaf and exceeded the safe limit by FAO/WHO (Codex Alimentarius Commission, 1984) standards. Concentration of Zn in water spinach at leafy and stem part were 0.0506 mg/g and 0.0276 mg/g and did not exceeded the safe limit. The study suggested that to reduce the health risk, vegetables should be washed properly to reduce the concentration of heavy metals. Government should pay more attention about this problem and alternatives should be taken to overcome this kind of problems. Farmer should be aware to surroundings and should bother about production sites and try to minimizing the factors present.

CHAPTER 1

INTRODUCTION

1.1 Background and problem statement

The consumption of vegetables and fruits as food offer rapid and simple means of providing adequate vitamin supplies, minerals and fiber. Vegetables are taken as food include those making soups or served as integral parts of the main sources of a meal. Each plant species has its nutritive requirements differing from others. Thus different plants supported by similar solutions will contain varying concentrations of minor and macro elements. The presence of industrial effluent decreases the budding and growth rate of vegetables. (Ihekeronye *et al.*, 1985).

Leafy vegetables occupy a very important place in the human diet, but unfortunately constitute a group of foods which contributes maximally to nitrate and other anions as well as heavy metals consumption. The excessive application of nitrogen and other inorganic fertilizers and organic manures to these vegetables can accumulate high levels of nitrate and other anions as well