CHAPTER I

INTRODUCTION

Zinc and copper are essential trace elements for plants, animals and human beings (1). Manifestations of zinc deficiency include growth retardation, hypogonadism, anorexia with impaired taste and smell, acrodermatitis skin lesion, alopecia, impaired wound healing, and impaired immune functions (2). It is also known that a wide variety of disorders has been associated with dietary deficiency of copper or with responses to copper therapy for instance, anemia, retarded growth, bone disorders, defective keratinization and pigmentation of hair, neonatal ataxia, impaired reproductive performance, heart failure, cardiovascular defects and gastrointestinal disturbances (3,4). Zinc and copper have been associated with the metabolism of cholesterol. It has been suggested that a metabolic imbalance produced by a high ratio of zinc to copper or an absolute deficiency of copper results in hypercholesterolemia, in turns, leads to coronary heart diseases (4,5,6,7). Since cereals are good dietary sources of zinc and copper (8, 9), it is very interesting to determine the concentrations and the ratios of these two elements in some cereals, such as rice, glutinous rice, millet and corn, especially rice and glutinous rice, the staple food of Thailand.

So this experiment was conducted to determine the concentrations of zinc, copper and the ratios of zinc to copper in rice, glutinous rice, millet and corn available in Bangkok's markets.