1. INTRODUCTION AND OBJECTIVE

1.1 Introduction

Vietnam is a country in Southeast Asia. The country shares borders with China in the north, Laos in the West and the northwest, Cambodia in the southwest, and the South China Sea in the east and the southeast. Climatically, Vietnam is located within the tropical and sub-tropical areas. The latter are quite hot and humid.

Vietnam is a developing country with an old agricultural production system that is undergoing modernization. In recent years, the issue of food hygiene and safety has received special attention from many countries in the world, including Vietnam. According to the Ministry of Health of Vietnam, there are about 3.000-4.000 cases caused by food-borne infections with at least 100-200 fatalities annually. In 2004, there were 145 outbreaks with 3,584 cases and 41 deaths. A proportion of 55.8% of these cases were caused by several pathogens (MOH, 2005).

Hanoi, the capital city, has an estimated human population of three million. This population is ever increasing due to tourists and immigrants. As a result of this, Hanoi is continuously facing high demand for food, quantitatively and qualitatively. This has led to increases of food establishments, for example vendors, small shops, and services. However, the owners of these establishments have little knowledge or awareness of food hygiene and safety. Hence, a great majority of consumers buy food from vending or small shops at which food hygiene and safety conditions are not assured.

There are several causes of food-borne infections, for example by *Salmonella*. It is found in the intestinal tracts of both animals and humans. *Salmonella* is recognized worldwide as an important food-borne pathogen that causes salmonellosis in many people (Doyle and Cliver, 1990). For example it affects as many as 3.84 million Americans, and costs billions of dollars in lost productivity and medical costs

per years (Farmer and Kelly, 1991). In recent years the occurrence of this disease in humans has increased (NIAID Fact Sheet, 2005).

The infections caused by *Salmonella* serovars are implicated as important Public health problems worldwide (Van der Klooster and Roelofs, 1997; Workman *et al.*, 1999). The zoonoses, which occur most frequently in the industrialized world today, are food-borne infections caused by *Salmonela* and *Campylobacter* (Jørgensen *et al.*, 2002). In 2000, there were about 15,000 laboratory confirmed cases of *Salmonella* infection in the United Kingdom (Public Health Laboratory Service, 2002).

The vehicles indicated in these infections are mostly *Salmonella* contaminated foods (Cartwright and Evans, 1988). Poultry meat and its derivatives are among the food products that cause the most concerns to public health authorities, owing to the associated risks of bacterial food poisoning (Bäumler, 2000; Beli *et al.*, 2001). The most frequently reported and important source of *Salmonella* contamination is cross – contaminated or undercooked chicken meat (Todd, 1994). *Salmonella* and *Campylobacter* are the most important pathogens associated with poultry products in the world (Bryan and Doyle, 1995).

In Hanoi, there are so far no modern chicken slaughtering and processing facilities. Thus, small butchers in the markets provide most of the chicken meat. Live poultry markets are common not only in Hanoi, but also in all other parts of the country. Furthermore, street or vended food is very popular. However, food hygiene practices and food handling are still big problems in the city and in the country as a whole. Therefore, a study of the ***"Isolation and Identification of Salmonella from chicken meat in Hanoi- Vietnam"*** was necessary.

The result of this study will provide information necessary for the authorities to control and prevent future outbreak of salmonellosis in Hanoi.

1.2 Objectives

The objectives of this present study are as follows:

2.2.1 To determine the prevalence of *Salmonella* in chicken meat in an urban area in Vietnam.

2.2.2 To determine the serotypes of *Salmonella* found in chicken meat in Hanoi.

2.2.3 To determine some potential risk factors associated with chicken meat contamination with *Salmonella.*