

CHAPTER I

INTRODUCTION AND OBJECTIVES

1.1 Background and description of the problem

Poultry meat is often contaminated with *Campylobacter* (*C.*). Contaminated poultry and poultry meat is thought to be the major source of human campylobacteriosis (EFSA, 2012, Rahimi et al., 2011). With over 190,000 human cases annually, this disease is the most commonly reported food-borne disease in the European Union (EU) (EFSA, 2012). Despite the zoonotic importance of this pathogen, few studies on *Campylobacter* were yet conducted in the Philippines (Baldrias and Raymundo, 2009, Magistrado et al., 2001). The focus of most studies in the country is still on more common diarrheagenic microorganisms such as *Escherichia coli*, *Vibrio cholerae*, and *Salmonella* spp. (Bungay et al., 2005).

As of January, 2012, the country's broiler population was estimated at 57.28 million birds. Around 26.66% of the total inventory was in Region III (Central Luzon) which is the top producing region of chicken meat in the country (BAS, 2011). Yet, in this region, which serves as the main source of chicken meat to the capital city of Manila, no studies were conducted on *Campylobacter* particularly on prevalence in broiler flocks or broiler meat so far. In contrast, *Campylobacter* spp. contamination was observed in neighboring countries such as, Japan, Thailand and Vietnam where they reported prevalences of 60%, 52% and 31%, respectively, in poultry meat at retail (Luu et al., 2006, Suzuki and Yamamoto, 2009, Vindigni et al., 2007).

Campylobacter with resistance to antimicrobial agents have been observed in both developed and developing countries (Chokboonmongkol et al., 2013, Hong et al., 2007). However, in developing countries, where the use of antimicrobial drugs in

humans and animals is moderately unrestricted, higher rates of enteric infections with antimicrobial-resistant bacteria could be detected (Bungay et al., 2005).

1.2 Objectives

- To determine the prevalence and to identify *Campylobacter* spp. by standard microbiological culture method and multiplex PCR
- To determine quantitative load of *Campylobacter* spp. by semi-quantitative detection method
- To determine antimicrobial resistance patterns of the *Campylobacter* spp. isolates from chicken meat at four local retail wet markets in Nueva Ecija, Philippines