**CHAPTER-I**

**INTRODUCTION**

Livestock is one of the most potential sub-sectors of agriculture in Bangladesh which plays an indispensable role in promoting human health and national economy of the country. Livestock not only assists to upgrade the financial condition but also makes a substantial contribution to human nutrition. Large ruminants (cattle and buffalo) and small ruminants (sheep and goat) constitute the major portion of livestock in Bangladesh. The present population of livestock in Bangladesh is 22.87 million cattle, 1.21 million buffaloes, 20.75 million goats and 2.68 million sheep **(DLS, 2008).** The total contribution of livestock sub-sector to Gross Domestic Product (GDP) in Bangladesh is approximately 7.23% and livestock in agricultural production 17.32% **(Anonymous, 2007)**. It also generates 13% of foreign currency and provides 20% fulltime employment and 50% partial employment of rural population **(Alam, 1993).**

In Bangladesh, 80% rural people rear indigenous cattle **(Siddiki *et al*., 2009)** and many people are involved with urban and rural dairy farming. Most animals are reared in houses under the traditional husbandry practices. Now a day, dairy farming in rural and urban areas is increasing with modern husbandry practices **(Sardar *et al.,* 2006)** where cattle are reared for several reasons mainly meat and milk production **(Lako *et al.,* 2007).** The production and productivity of animals are greatly hampered by different diseases **(Ngole *et al.,* 2004**) particularly the frequency of gastrointestinal parasitism is remarkable.

Gastrointestinal parasitism is a world-wide problem **(Regassa *et al.,* 2006).** It is thought to be one of the major constraints that hinders the development of livestock population **(Kakar *et al*., 2008 and Jabber and Green, 1983)** and it also adversely affect the health and productivity of animals **(Irfan, 1984).** The losses caused by parasitic infections are in the form of lowered general health condition, retarded growth rate, diminishing the working efficiency, decrease milk and meat production, abortion, cost associated with preventive measures and reduces the disease resistance capability, which may ultimately lead to higher mortality **(Chavhan *et al.,* 2008, Silvestre *et al.,* 2000 and Radostits *et al.,* 1994).**

However, the geo-climatic conditions of the country also favour the growth, development and survival of various parasites. Occurrence of gastrointestinal parasitic infections in different areas varies greatly depending upon the diverse intrinsic and extrinsic epidemiological and biological factors associated with them **(Sardar *et al.,* 2006).**

Infections caused by gastrointestinal parasites especially nematodes are one of the major causes of calf mortality and act as a big threat for dairy industry of this country. Previous reports revealed that the reasons of 50% death of calves up to 1 year of age is mainly gastrointestinal parasitism **(Debnath *et al.,* 1995).** On the other hand, the adult cattle also severely affect by parasitism as they are kept in the farm for a longer period of time in breeding or milk production purposes **(Sardar *et al.,* 2006)** resulting enormous economic losses.

The total annual loss due to gastrointestinal parasites was estimated 25-30 million sterling pounds in Bangladesh (**Rahman, 1997).** Despite significant losses by gastrointestinal parasitism, the problems are often neglected and overlooked as majority of the infected animals show a number of little obvious clinical signs throughout their productive life and their effects are gradual and chronic **(Raza *et al.,* 2010).**

Epidemiological pattern of the parasitic diseases in the different agro-climatic zones of the country usually provides a basis for developing strategic and tactical control systems against them. In different regions of Bangladesh, several research on gastrointestinal parasitic diseases **(Rahman, 1970, Rahman and Razzak, 1973, Rahman and Mondal, 1983, Afazuddin, 1985, Amin and Samad, 1987, Chowdhury *et al.,* 1993, Shahiduzzaman *et al.,* 1999, Mondal, *et* *al.,* 2000, Samad *et al.,* 2004and Sardar *et al.,* 2006)** have been conducted but in Chittagong region **(Siddiki *et al.,* 2009 and Alim *et al.,* 2011),** it is meager.

Considering the above facts, the present study was undertaken to fulfill the following objectives:

* To investigate the prevalence of different gastrointestinal parasitic infections in Holstein Friesian crossbred calves of under one year at farm level of three different Thanas of the Chittagong district.
* To determine the effect of different factors such as, breed, age, sex, deworming on the occurrence of gastrointestinal parasitic infections.