**Chapter-1**

**Introduction**

Bangladesh is an agricultural based country with a high population density and per capita income is very low. Livestock in Bangladesh is an essential component of crop cultivation and post harvest operation. In Bangladesh, livestock is one of the most potential sub-sectors of agriculture which plays an indispensable role in promoting human health and national economy of the country. About 98 percent of livestock, reared by the landless and marginal farmers in rural areas to provide income (Alam, 1993). Livestock not only assists to upgrade the financial condition but also makes a substantial contribution to human nutrition. However, livestock is an integral part of farming system which has a better contribution to enhance the economy of Bangladesh. large ruminants (Cattle and Buffalo) and small ruminants (sheep and goat) constitute the major portion of livestock. The present population of livestock is 24.7 million cattle, 1.541 million Buffalo, 27.05 million goat and 3.07 million sheep (DLS, 2013-14). The total contribution of livestock sub-sector to Gross Domestic Product (GDP) in Bangladesh is approximately 2.9 % (DLS, 2013). It also generates 13% of foreign currency and provides 20% fulltime employment and 50% partial employment of rural population (Alam, 1993). The annual milk production is 50.67 million ton, meat production 36.20 million ton in our country (DLS, 2011).

In Bangladesh 80% rural people rear indigenous cattle (Siddiki et al, 2009).But many people are also involved with urban and rural dairy farming. Most animals are reared in houses under the traditional husbandry practices .Now a days, dairy farming in rural and urban areas is increasing with modern husbandry practices (Sardar et al., 2006) where cattle are mainly reared for several reasons including meat and milk production (Lako et al., 2007).But the production system is compounded by deficiencies in feeding and breeding; with further aggravate the effects of diseased and parasitism.

Gastrointestinal parasitism is a worldwide 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 animal(Irfan,1984).The losses caused by parasitic infection are in the form of lowered general health condition, retarded growth rate, diminishing the working effenciency , decrease milk and meat production, abortion, cost associated with preventive measures and reduces the disease resistance capability ,which may ultimately lead to higher mortality (Chavan et al 2008,Silvestre et al 2000 and Radostits et al 1994). However, the geo-climatic conditions of the country also favours the growth, development and survival of various parasites. It has been estimated that about 10% animal die annually due to parasitic disease. Gastro-intestinal parasitic infections are widely prevalent in Bangladesh and produce a substantial economic loss. Some GI parasites may cause death in calves in heavy infestations. Prevalence of helminthes parasitic infestation in cattle in some areas of Bangladesh has been reported earlier (Rahman *et* al., 1971; Rahman and Razzak, 1973).

In Bangladesh, parasitic infestation is the major cause of hindering the development of livestock population (Jabber and Green, 1983). The climate of Bangladesh is suitable for the parasites, which are to great extent responsible for calf mortality in this country. The mortality rate of crossbred calves is more than that of indigenous ones (Haque, 1986).

Occurences 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).

Most cattle population in Bangladesh comes from primitive and low productive breeds. Most animals are reared in house under the age old traditional husbandry practices. Many cattle are over worked and most of them are under fed or half fed during most of the time of the years. They are not supplied with adequate balanced ration. As a result the general nutritional status of most of the cattle is in subnormal level which greatly increases susceptibility to parasitic diseases (Blood et al., 1990).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. Earlier reports revealed that 50% calves up to 1 year of age died due to gastrointestinal parasitism( Debnath et al.,1995).On the other hand, the adult cattle also severely affect by parasitism as they are kept for a longer period of time in breeding or milk production purposes and often supply insufficient feed against their high demand (Sardar et al.,2006)resulting enormous economic losses. The total annual loss due to gastrointestinal parasites was 25-30 million sterling pounds reported by 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.,2004 and Sardar et al.,2006).have been conducted but in Chittagong region(Siddiki et al., 2009 and Alim et al.,2011),it was very meager. Considering the above facts, the present study was undertaken to fulfill the following objectives:

* To investigate the prevalence of gastrointestinal parasitic infestation at Anwara upazilla in Chittagong.
* To determine the effect of different factors such as breed, age, sex, body score, body weight etc. in the occurrences of such infestation.