Seroprevalence of brucellosis in small ruminants in selected area of Bangladesh

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Abstract

A seroprevalence study of small ruminant brucellosis was conducted in sheep and goat rearing selected areas of Mymensingh district and Dhaka district, Bangladesh, from March, 2005 to May, 2006. Sera from 62 sheep and 300 goats were tested by rose bengal plate test (RBPT), plate agglutination test (PAT), tube agglutination test (TAT) and mercaptoethanol test (MET). Out of the 62 sera tested 3.25% (n = 2) were positive to RBPT, PAT and TAT and 4.84% (n = 3) were positive MET. In case of 300 goats, 1.67% (n = 5) were positive to RBPT and PAT, 2% (n = 6) were positive to TAT and 2.33% (n = 7) were positive to MET. This investigation is the first of its type to be performed in small ruminants in Bangladesh. Higher prevalence rate (8.0 %) was found in BAU nutrition farm in case of sheep and 10 % in Bangladesh Agricultural University (BAU) Veterinary Clinic in case of goat while lower prevalence (0.0 %) was recorded in Pharmacology project and BAU adjacent villages in case of sheep and (0.0 %) in Dhamrai upazila in case of goats respectively. Brucella antibodies were more prevalent in sheep (8.84 %) than in goat (2.33 %).

Key Words: Brucellosis, Small ruminants, Villages (Boyra and Char Nilaykha), Ishwargonj Upazila and Dhamrai upazila.

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Introduction

Bangladesh hosts a large number of small ruminants that are raised usually under free range system or in adjunct to crop production. The ruminants especially small (sheep and goat) ruminants in Bangladesh are mainly utilized for meat purposes, although goat milk is used some extent for human consumption. The small ruminants are not only important for meat and milk but also important for good quality leathers and source of income to farmers. Among the Asiatic countries Bangladesh has got the second highest population of goats which accounted for 34.47 million. The goat rank second in terms of meat, milk and skin production representing about 28.0, 23.0 and 28.0 per cent among the total contribution of livestock, in Bangladesh. There are about 33.55 million goats and 1.16 million sheep in Bangladesh. The sheep and goats enterprise is becoming more popular due to socio-economic condition and their ability to survive on poor quality pastures and forage that is unsuitable for other species of ruminants. Besides, goats require relatively small investment and can therefore, be a source of cash income for small-scale farmers. The disease constrains make hindrance for the development of goat industry and there is a lot of report for abortion but there is no report whether the abortion is due to brucellosis. In spite of the presence of huge small ruminant population, Bangladesh fails to optimally utilize this resource as the sector is suffering from lower productivity. Among many factors that limit the economic return from small ruminant production diseases stand in the front line. One of such diseases that hamper the productivity of small ruminants is brucellosis.

Brucellosis is a wide spread disease of livestock and human beings resulting in reproductive inefficiency and abortion. Small ruminant brucellosis is mostly caused by *Brucella melitensis*. *B ovis* is also an important cause of orchitis and epididymitis in sheep but it is not recognized as a cause of natural infection in goats. Persistent infection is a common feature of the disease with frequent shedding of the bacterium in reproductive and mammary secretions. Brucellosis is an important zoonosis threatening the public health in many countries of the world. The risk of brucellosis is presumed to be high in nomadic pastoral societies where close and frequent contact between man and animals is unavoidable part of the ecology.

Brucellosis has been reported in small ruminants from different parts of the world. Prevalence rates of 1.7% in sheep and 1.5% in goats in Sudan, 6.01% in sheep and 2.8% in goats in Kenya, 5.29% in goats and 7.2% in sheep in Somalia, 3.8% in goats and 1.4% in sheep in Eritrea, 4% in goats and 1% in sheep in eastern Sudan, 6.6% in sheep and 4.75% in goats in Nigeria have been...