INTRODUCTION

Sericulture is one of the agro based allied activities practiced by farmers in isolated belts in the Tirunelveli district of Tamil Nadu. The present need of Sericulturists is the enhanced silk production and protection of silk worm from pathogens and pests during rearing. Silkworm *Bombyx mori* is susceptible to a number of infectious and non infectious diseases. Serticulture have been stinking constantly to minimize the incidence of diseases and maximize cocoon production. In our country, *B. mori* is continuously reared throughout the year which makes it susceptible to various pathogens due to their perpetuation in the environment leading to secondary contamination (Govindan et al., 1997).

Bacteria are known to play an active role in causing flacherie of silkworms as individual pathogens or contamination with viruses (Savithri and Murali et al., 2003 a, b). Flacherie is an important disease – affecting the silkworm. Microbial flacherie is caused by both bacteria and viruses (Govindan and Devaiah, 1995). Pasteur (1970) first reported bacteria as etiological agents of silkworm flacherie. Flacherie disease of silkworm was considered to be caused by the larval gut lumen . Disease incidence may be due to the lowering of pH by the introduction of bacteria, which provides congeniality for growth of the pathogen, allows fast multiplication and could lead to degeneration of peritropic membrane, which blocks the absorption of nutrients that is reflected by cessation of feeding.
Susceptibility to bacterial infection varies according to the strains of the silkworm and it is controlled by genes. The biological defense against pathogens in insects includes the innate physical barriers like integument and intestinal wall and humoral responses like the activation of prophenol oxidase cascade and induction of immune proteins such as lysozymes, lectins, antibacterial proteins and antifungal proteins primarily by the fat bodies. In insects, antibacterial proteins are not synthesized under instinctive conditions, but are rapidly synthesized upon bacterial infection. Krishnan et al., (1995) reported that 3, 4 dihydroxy phenyl alanine (a precursor of dopamine) enhanced the cellular defence response of silk worm to bacterial infection. Further intestinal microbial environment can be fortified by supplementing probiotic microbes. Feed probiotic organisms are used for improving the digestion by way of the enzymes produced by the microbes, inhibition of pathogenic organisms by competitive inhibition and production of antibacterial substances and immune stimulation. This could lead to higher survival, fewer incidence of diseases and reduced mortality along with low feed conversion ratio (FCR) and increased production (Tannock, 1997).

According to Charles (2004) lower animals do not have well developed humoral immunity and under such circumstances vaccine development may not be of much use and in these lower animals immune stimulation could be achieved easily through probiotics. Thus the concept of probiotics is widely applied in human health care, dairy practices and aquaculture. There is not much work on the beneficial potential of probiotics on silk worm. Hence the present attempt is a new approach on B. mori to strengthen their immunity to resist the microbial pathogenic attack and to promote good yield.
In this regard it is imperative to isolate and identify the flacherie causing bacteria in silk worm in the study area. Because of heavy crop loss due to bacterial disease, different attempts were made to develop suitable antibiotic drugs that can save the silk worm from the jaws of death. As the silkworm larvae are highly sensitive and delicate during moulting process bacterial pathogens easily infect them through food, environment or handling process. Bacterial infection affects moulting process cocoon forming ability and general health. Bacterial flacherie causes the worm to swell, and blacken and cause mortality. In order to control the bacterial pathogen and tend to sustain the yield, varieties of prophylactic and anaphylactic measures must be employed. Hence in the present study an attempt has been made to identify and enumerate the bacterial and fungal pathogens from disease affected farms. Further it is planned to analyse the reasons for disease prevalence and to find out a solution for this problem.