Microbiology has both basic and applied aspects. Many microbiologists are interested primarily in the biology of the microorganisms themselves. They may focus on a specific group of microorganisms and be called virologists (viruses), bacteriologists (bacteria), phycologists or algologists (algae), mycologists (fungi), or protozoologists (protozoa). Others are interested in microbial morphology or a particular functional process and work in fields such as microbial cytology, microbial physiology, microbial ecology, microbial genetics, molecular biology, and microbial taxonomy. Of course a person can be thought of in both ways (e.g., as a bacteriologist who works on taxonomics problems). Many microbiologists have a more applied orientation and work on practical problems in fields such as medical microbiology, food and dairy microbiology, and public health microbiology (basic research is also conducted in fields). Because the various fields of microbiology are interrelated, an applied microbiologist must be familiar with basic microbiology. For example, a medical microbiologist must have a good understanding of microbial taxonomy, genetics, immunology, and physiology to identify and properly respond to the pathogen of concern. One of the most active and important is medical microbiology, which deals with the diseases of humans and animals. Medical microbiologists identify the agent causing an infectious disease and plan measures to eliminate or control it. Frequently they are involved in tracking down new, unidentified pathogens such as the agent that causes variant Creutzfeldt-jacob disease, the hanta virus, the West nile virus, and the virus responsible for SARS. These microbiologists also study the ways in which microorganisms cause disease.
Many important areas of Microbiology do not deal directly with human health and disease that certainly contribute to human welfare. Agricultural microbiology is concerned with the impact of microorganisms on agriculture. Agricultural microbiologists try to combat plant disease that attack important food crops, work on methods to increase soil fertility and crop yields, and study the role of microorganisms living in the digestive track of ruminants such as cattle. With the improvement of quality of livestock through extensive breeding programmes, the susceptibility of cattle to various diseases including bovine mastitis has increased. In order to reduce the incidence of such disease and increase the profitability for the farmers, continuing efforts are being made by the state and central Government. The objective of the present study is to prevent ingress of the bovine mastitis in the Dharwad region.

The thesis is divided into 6 chapters with a view of studying the impact of bovine mastitis with different objectives. The first chapter reviews literature presents an overview of research development regarding the bovine mastitis and its impact on the economics of the farmers. Chapter two Epidemiology of bovine mastitis in cows throws light on the various risk factors leading to the disease bovine mastitis. Chapter three Isolation, identification and antimicrobial susceptibility of bacteria causing bovine mastitis, describes the various bacteria causing bovine mastitis and resistance pattern to routinely used antibiotics. Chapter four Influence of mastitis on haemogram, oxidative stress parameters and biochemical changes in the blood and milk, focuses on the study of effect of bovine mastitis on cattle health and its milk composition. Chapter five Characterization of toxin genes in staphylococcus aureus isolated from bovine mastitis. This unit is concentrated only on S. aureus as it was the predominant bacteria held responsible for causing the bovine mastitis. Chapter six In
silico identification of putative promoters and drug targets in the bovine herpes virus focuses on aetiology of bovine mastitis which cannot be cultured on the nutritional medium, the study was carried out by using various bioinformatics tools. In the light of available literature of earlier work, the pertinent literature is cited under references. To avoid disruption in the flow of text, tables, graphs and photographs are placed at the end of each chapters.