

Preface

The research work “**Over-expression of stress tolerant genes in endosymbionts and its application in stress management of *Hevea brasiliensis***” carried out, has opened an avenue for genetically manipulating endosymbionts to over-express stress tolerant genes in *Hevea*. With this idea, an attempt was made to over-express chitinase gene in endosymbiotic *B. subtilis* in order to prevent spreading of fungal diseases like *Corynespora* leaf fall disease in *Hevea*. Since developing a transgenic *Hevea* engineered to over-express chitinase is a cumbersome and time-consuming process, transformation of endosymbiotic organisms of *Hevea* could be explored as a better alternate. The relevant protocols needed to transform endosymbiotic *B. subtilis* to produce the desired proteins/enzymes were standardized.

This thesis consists of six chapters. The first chapter explains the concept of the work, the second chapter deals with the review of related works from various literatures, the third chapter includes all the materials and methodologies adopted in the work. The fourth chapter deals with the results obtained from this work followed by discussion in the fifth chapter. The sixth chapter is a brief summary of the whole work.