PREFACE

The *Aspergillus species* is well identified for production of enzymes with industrial, pharmaceutical and biotechnological uses. For degrading a particular polymer substrate like pectin, *Aspergillus species* is known to produce several forms of enzymes identical in catalytic activity but differing in kinetic properties. Amongst the carbohydrate degrading enzymes produced by these fungi, pectinolytic enzymes are the most significant with wide range of applications in industries. Several *Aspergillus species* have been isolated from various sources, identified and studied for pectinase production.

In the present study, a novel strain, *Aspergillus foetidus* MTCC 10367 associated with industrial fruit waste sample was identified, characterized and screened for hydrolytic and depolymerizing multiple enzymes of industrial importance. This thesis unravels production of polygalacturonase by *Aspergillus foetidus* MTCC 10367, influence of cultural factors on polygalacturonase activity in *Aspergillus foetidus* MTCC 10367 and optimization of polygalacturonase production. Purification of polygalacturonase was carried out and studies on kinetic properties of polygalacturonase from this novel strain were done. PCR amplification of DNA isolated from this isolate was also studied and potential application of polygalacturonase from this strain in fruit juice clarification was also established.