

CONTENTS

CONTENTS

| CHAPTER NO. | TITLE | PAGE NO. |
|-------------|------------------------|----------|
| | LIST OF TABLES | |
| | LIST OF FIGURES | |
| | LIST OF PLATES | |
| | LIST OF APPENDICES | |
| 1 | INTRODUCTION | 1 |
| 2 | REVIEW OF LITERATURE | 7 |
| 3 | MATERIALS AND METHODS | 21 |
| 4 | RESULTS AND DISCUSSION | 28 |
| 5 | SUMMARY AND CONCLUSION | 50 |
| | BIBLIOGRAPHY | 52 |
| | APPENDICES | 60 |

LIST OF TABLES

| TABLE NO. | TITLE | PAGE NO. |
|-----------|---|----------|
| 1. | Pheylalanine ammonia lyase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 30 |
| 2. | Peroxidase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 33 |
| 3. | Polyphenol oxidase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 35 |
| 4. | Total phenol content in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 37 |
| 5. | Indole acetic acid level in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 42 |
| 6. | Gibberellic acid level in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 44 |

LIST OF FIGURES

| FIGURE NO. | TITLE | PAGE NO. |
|------------|--|----------|
| 1. | Life cycle of <i>Pythium aphanidermatum</i> | 10 |
| 2. | Deamination of L-phenylalanine by L-phenylalanine ammonia-lyase (PAL) | 14 |
| 3. | Overview of the Specific Roles of Plant Peroxidase in Defense Reactions | 16 |
| 4. | Chemical Structure | 19 |
| 5. | Phehylalanine ammonia lyase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 31 |
| 6. | Peroxidase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 34 |
| 7. | Polyphenol oxidase activity in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 36 |
| 8. | Total phenol content in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 38 |
| 9. | Indole acetic acid level in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 43 |
| 10. | Gibberellic acid level in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 44 |
| 11. | Root length in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 46 |
| 12. | Shoot length in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 47 |
| 13. | Total chlorophyll content in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 48 |

LIST OF PLATES

| PLATE NO. | TITLE | PAGE NO. |
|--------------|--|-------------|
| 1 | Peroxidase isoforms in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 40 |
| 2 | Polyphenol oxidase isoforms in <i>Pseudomonas fluorescens</i> (AUPF8) treated tomato plants | 40 |

LIST OF APPENDICES

| APPENDIX NO. | TITLE | PAGE NO. |
|-----------------|---|-------------|
| I. | Media used | 60 |
| II. | Preparation of talc based preparation | 61 |
| III. | Preparation of sand – maize medium | 62 |
| IV. | Estimation of phenylalanine ammonia lyase | 63 |
| V. | Estimation of peroxidase | 64 |
| VI. | Estimation of polyphenol oxidase | 65 |
| VII. | Estimation of phenol | 66 |
| VIII. | Native PAGE analysis | 67 |
| IX. | Estimation of indole acetic acid | 68 |
| X. | Estimation of gibberellic acid | 69 |
| XI. | Estimation of chlorophyll content | 70 |