LIST OF GRAPHS.

1. Fig.1.1 Diversity in pigmentations observed in chickpea isolates.
2. Fig. 1.2 Diversity in pigmentation exhibited by tomato rhizosphere isolates.
3. Fig. 1.3 Diversity in yellow pigmentation exhibited by tomato rhizosphere isolates.
4. Fig.2.1 Zones of phosphate solubilization by chickpea isolates after 72 h of incubation.
5. Fig.2.2 Phosphate solubilization by chickpea rhizosphere isolates after 7 d and 14 d of incubation.
6. Fig.2.3 pH reduction in Pikovyskyaya's medium by chickpea isolates
7. Fig. 2.4 Zones of phosphate solubilization by tomato isolates.
8. Fig.2.5 Phosphate solubilization by tomato rhizosphere isolates.
9. Fig. 2.6 pH reduction in pikovyskyaya's medium by tomato isolates.
10. Fig. 2.7 Zones of phosphate solubilization by Azotobacter and Rhizobium.
11. Fig.2.8 Phosphate solubilization by Azotobacter and Rhizobium isolates after 7 d and 14 d of incubation.
12. Fig. 2.9 pH reduction in pikovyskyaya's medium by Azotobacter and Rhizobium isolates.
13. Fig. 2.10 Zones of phosphate solubilization by Azospirillum isolates.
14. Fig. 2.11 IAA production by selected chickpea isolates.
15. Fig.2.12 IAA production by tomato isolates up to 168 h of incubation.
16. Fig.2.13 IAA production by Azotobacter and Rhizobium isolates.
17. Fig. 2.14 Inhibition of M. Phaseolina biomass in PD broth by different percent NT1 inoculum.
18. Fig.2.15 Catecholate type of siderophore production by selected isolates.
19. Fig. 2.16 Hydroxamate siderophore and ACC deaminase production by selected isolates.
20. Fig. 2.17 Long term survival studies of selected PGPR.
21. Fig. 3.1 Growth of isolates in MM9 medium.
22. Fig. 3.2. Comparative study of quantitative siderophore production by selected isolates in SSM, MM9 and FMM media.
23. Fig. 3.3 Influence of different FeCl3 concentrations on growth of selected PGPR.
24. Fig. 3.4 Influence of different FeCl3 concentrations on siderophore production by selected PGPR.
25. Fig.3.5 Relative fluorescence of NT1 and T15 at different FeCl3 concentrations.
26. Fig.3.6 Growth of selected isolates at different Zn concentrations and time intervals.
27. Fig.3.7 Influence of Zn and time on siderophore production by selected isolates.
28. Fig. 3.8 Growth of selected isolates at different Ni concentrations and time intervals.
29. Fig. 3.9 Siderophore production at different Ni concentrations and time intervals.
30. Fig.3.10 FTIR analysis of NT1 siderophore crystals.
31. Fig.3.11 UV spectra of different fractions of siderophore extract of NT1.
32. Fig.3. 12 Influence of pH on UV spectra of NT1.
33. Fig. 3.13 HPLC analysis of siderophore produced by NT1.
34. Fig.4.1 Nickel Tolerance level of selected isolates.
35. Fig.4.2 Influence of nickel on growth of NT1.
36. Fig. 4.3 Influence of nickel on growth of T15
37. Fig. 4.4 Influence of nickel on growth of T5
38. Fig. 4.5 Influence of nickel on growth of C4
39. Fig. 4. 6 Influence of nickel on growth of C5.
40. Fig.4.7 Influence of different NiCl2 concentrations on nickel kinetics of the PGPR.
41. Fig. 4.8 Siderophore production by PGPR in presence of 2 mM NiCl2.
42. Fig. 4.9 Influence of 2 mM NiCl2 on ACC production by PGPR.
43. Fig.4.10 Influence of PGPR on root length and shoot length of chickpea in presence of 2 mM nickel.
44. Fig.4.11 Influence of PGPR on fresh wt, dry wt, and chlorophyll a/b of chickpea in presence of 2 mM nickel.
45. Fig.4.12 Influence of PGPR on Ti and Tf of chickpea in presence of 2 mM nickel.
46. Fig.4.13 Rhizosphere colonization by PGPR in chickpea rhizosphere at 2 mM NiCl₂.
47. Fig.4.14 Influence of different PGPR on root length and shoot length of Tomato in presence of 2 mM NiCl₂.
48. Fig. 4.15 Influence of different PGPR on fresh wt, dry wt and chlorophyll a/b of tomato in presence of 2 mM NiCl₂.
49. Fig. 4.16 Tolerance index and Transfer factor of different PGPR in Tomato at 2 mM NiCl₂.
50. Fig. 4.17 Rhizosphere colonization by PGPR in tomato rhizosphere at 2 mM NiCl₂.
51. Fig.5.1 Growth of selected isolates at different NaCl Concentrations.
52. Fig.5.2 Influence of different NaCl concentrations on growth of NT1.
53. Fig.5.3 Influence of different NaCl concentrations on growth of T15.
54. Fig 5.4 Influence of different NaCl concentrations on growth of T5.
55. Fig.5.5 Influence of different NaCl concentrations on growth of C4.
56. Fig.5.6 Influence of different NaCl concentrations on growth of C5.
57. Fig. 5.7 Siderophore production by selected PGPR in presence of 6 % NaCl concentration.
58. Fig. 5.8 ACC deaminase production by selected PGPR in presence of 6 % NaCl concentration.
59. Fig. 5.9 Influence of different PGPR treatments on root length and shoot length of chickpea in presence of 2 % NaCl.
60. Fig. 5.10 Influence of different PGPR treatments on fresh wt, dry wt and chlorophyll content in chickpea in presence of 2 % NaCl.
61. Fig. 5.11 Influence of different PGPR treatments on tolerance index and transfer factor of chickpea in presence of 2% NaCl.
62. Fig. 5.12 Colonization of PGPR in presence of 2% NaCl in Chickpea rhizosphere.
63. Fig. 5.13 Influence of different PGPR treatments on root and shoot length of tomato plants in presence of 2% NaCl.
64. Fig. 5.14. Influence of different PGPR treatments on fresh weight, dry weight and chlorophyll content of tomato in presence of 2% NaCl.
65. Fig. 5.15 Influence of different PGPR treatments on tolerance index and transfer factor of tomato due to PGPR in presence of 2% NaCl.
66. Fig. 5.16 Colonization of PGPR in tomato rhizosphere under 2% NaCl stress.
67. Fig. 5.17 Phylogenetic tree of NT1 identified as P. fluorescens.
68. Fig. 5.18 Phylogenetic tree of T15 identified as P. aeruginosa PA7.
69. Fig. 5.19 Phylogenetic tree of C4 identified as P. stutzeri A1501.