



The main aim of present study was to isolate the plant growth promoting rhizobacteria (PGPR), characterize their plant growth promoting attributes and evaluate the potential of most potent PGPR as biofertilizer. Fifty rhizobacteria were isolated from the rhizospheric soil samples of eight different agricultural fields and were morphologically characterized. The selected strains were screened for PGP traits including production of ammonia, hydrogen cyanide (HCN), Indole acetic acid (IAA), phosphate solubilization and antagonistic activity against two phytopathogens viz., *Fusarium oxysporum* and *Alternaria alternata*. Maximum ammonia (1.004 mM/mL) was produced by the isolate NF-3, IAA (87.60 $\mu\text{g/mL}$) by NF-28, phosphate solubilization by NF-35 and >50 % in vitro antagonism against both of phytopathogens by NF-35 i.e. 55.55 % against *F. oxysporum* and 57.77 % against *A. alternata*. So, the rhizobacterial isolate NF-35 was considered as the most promising PGPR showing protease, cellulase and lipase activity whereas, no activity of pectinase and α -amylase. The isolate NF-35 showed maximum growth in the medium containing 2 % sucrose, 2 % yeast extract, at initial pH of 7.5 at an incubation temperature of 30°C and 48 hours of incubation. On supplementation of additional nitrogen source to medium the growth of NF-35 strain was significantly enhanced by 2.5 folds (8.64 g/L) over the nitrogen-free medium (3.48 g/L). The strain showed slight growth at high temperature (45°C), alkaline pH 9 and salinity stress of 10 %. The NF-35 strain showing excellent PGP attributes along with the abiotic stress tolerance was evaluated as biofertilizer for plant growth of *Triticum aestivum* (wheat) and *Lycopersicon esculentum* (tomato). Treatment of NF-35 biofertilizer significantly increased the seed germination rate and plant growth parameters; plant wet weight, shoot wet weight, root wet weight, plant height, shoot length, root length, stem diameter, wheat spike morphology and vigor index over the control group. The co-inoculated plants containing both biofertilizer and phytopathogens showed slight disease symptoms i.e. <25 % than positive control group i.e. >50 %. The extent of disease incidence in both plants was found to be 33.33 % in treatment group of *F. oxysporum* while 37.49 % in *A. alternata* treated group. The results suggest that NF-35 strain can be used as potent biofertilizer and biocontrol agent for effectual plant growth.