

Research Paper :

Survey of chilli growing areas in Guntur district for variations in input and yield levels, soil properties and microbial populations

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ABSTRACT

A survey was conducted in chilli growing areas of Guntur district on soil properties, nutrient status and microbial populations besides collection of rhizosphere samples for isolation of *Azospirillum* inoculants. The survey indicated that out of 50 rhizosphere soils surveyed, 40 samples were heavy black or mixed black, the rest of 10 were sandy or red sandy loams. All the soils were neutral to alkaline in reaction, non saline and high in potassium status. Only 12 and 18 per cent of the surveyed samples were medium in organic carbon and available nitrogen, respectively. Rest were low in both the parameters. Only 8 per cent of samples recorded medium in available P_2O_5 and the rest were high. Population of *Azospirillum* ranged from 3.53 to 5.82 \log_{10} CFU. High population of *Azospirillum* ($>5 \log_{10}$ CFU) was noticed in rhizosphere of chilli grown in heavy black soils. Comparatively, higher populations of other bacteria, fungi and actinomycetes were noticed where the crop was grown on heavy black soils under high level of input utilization. A non significant negative correlation was observed between the soil pH and EC and microbial population. Significant positive correlation was noticed between organic carbon and population of *Azospirillum*, other bacteria and fungi. Similar significant positive correlation was noticed between soil N and *Azospirillum*, other bacteria and fungi.

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