

Research Article

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Response of biofertilizers on biomass partitioning pattern and yield of pea (*Pisum sativum* L.)

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Summary

Among legumes, pea (*Pisum sativum* L.) is the second most important grain legume, which is widely used in human nutrition. The yield potential of cultivars is one of the major factors that determine the use of vegetable pea. Currently, pre-sowing inoculation of pea seeds is a promising treatment and is one of agronomic solutions for sustainable agriculture development. The research was based on the precise field experiment, conducted in three replicates and carried out in the experimental field. The examined inoculants were applied during sowing. The presented results of the studies on the symbiotic nitrogen fixation and phosphate solubilizers by leguminous plants indicate that the productivity of pea was positively affected by the application of microbial inoculants. The supplementation of live inoculums of *Rhizobium*, *Azotobacter*, *Azospirillum* and phosphate solubilizing bacteria (PSB) in the rhizosphere of pea can significantly enhanced the biomass accumulation and yield (27 – 55 %) as compared to uninoculated control. The degree of influence was found to be dependent on variety and preference of genotypes for biofertilizer. A steady increase in root, shoot and leaf biomass accumulation from seedling stage to flowering was evidenced in all the three variety. The shredding of leaf biomass was highest irrespective of varieties followed by shoot biomass at pod formation stage, thereafter up to senescence the leaf and shoot biomass was static. A preference to PSB for arkel and rhizobium plus free N fixers for Azad P₁ and Azad P₃ in terms of accumulation of partitioned biomass were noticed which suggested the use of low cost biofertilizers for higher productivity in pea.

Key words : Biofertilizers, Pea varieties, Biomass, Yield

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