Enhancing Resistance of Red Pepper to Phytophthora Blight Diseases by Seed Treatment with Plant Growth Promoting Rhizobacteria

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Abstract

Plant growth promoting rhizobacteria (PGPR) have been shown to suppress phytopthora blight. This suppression has been related to both microbial antagonism and induced resistance. The PGPR isolates were screened by dual culture plate method and most of the isolates were showed varyinglevels of antagonism. Among the PGPR isolates pyoverdin, pyochelin and salicylic acid producing strains showed the maximum inhibition of mycelial growth of *Phytophthora capsici* and increased plant growth promotion in red pepper. PGPR isolatesfurther analysed for its ability to induce production of defence related enzymes and chemicals. The activities such as Phenyle alanin ammonia lyase (PAL), Peroxidase (PO), Polyphenol oxidase (PPO) and accumulation of phenolics were observed in PGPR pretreated red pepper plants challenged with *Phytophthora capsici*. The present study shows that an addition of direct antagonism and plant growth promotion, induction of defense related enzymes involved to enhance resistance against invasion of *P. capsici* in red pepper.