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Evaluation of Bacterial Endophytes for Controlling Southern Blight in Hemp Production

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Abstract

Removal of Hemp from the federal controlled substance made it widely accepted as a new lucrative crop across the United States. is one of the States promoting the Cultivation of hemp is legal in Tennessee in and the state has a potential of being the leading hemp grower in the southeastern region. Southern blight caused by *Sclerotium rolfsii* pose agronomic challenges in Hemp production, it reduces plant growth and leads to death of infected plants. The objective of this study was to evaluate selected bacterial endophytes for southern blight disease management and plant growth improvement. Four bacteria isolates PRT, PSL, IMC8 and HEB1 were tested in the greenhouse for control of southern blight disease and plant growth promotion measured by plant height and biomass, and chlorophyl content. A replication of four individual plants was used ad data analysis used statistical software R studio 2022.02.2 Build 485. Although disease suppression in greenhouse condition was inconclusive, results on plant growth promotion showed that plants treated with HEB1 and PRT had best growth performance and a reduction in southern blight disease severity. The study will be repeated and the amount of infection adjusted to match what plants may encounter in the field.