# Inhibition of Sclerotinia sclerotiorum via Cover Crop, Coniothyrium minitans, and Foliar Application

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Sclerotinia sclerotiorum, also referred to as White Mold, is a necrotrophic fungal pathogen which causes damage to Glycine max health and yield. Fungicides to combat this fungus are very expensive and usually ineffective. In this study, evaluation of the use of cover crops for inhibiting germination and growth of Sclerotinia sclerotiorum was completed in comparison to the biological fungicide Contans. Three separate experiments tested the effects of multiple cover crops on the fungus and soybean health. Brassica juncea, Brassica oleracea, and Raphanus sativus were used in PDA plates and soil studies due to their commercialized use or phenolic/antioxidant compounds. Foliar treatment using calcium carbonate and manganese sulfate on potato dextrose agar halted mycelium development in a fourth set of trials. Cover crop extracts and Contans exhibited inhibition of Sclerotinia sclerotiorum germination on PDA plates as compared to control. Statistical analysis revealed no significant difference in soybean growth rates between control and cover crop residue conditions. Germination of soybean seeds exposed to cover crop residues was evaluated. Based on this investigation, test plot studies will be conducted in controlled conditions to observe cover crop relationships to crop germination and White Mold reproductive structures on a larger scale.

**Awards Won:**