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Isolation of Possible Biocontrol Endophytic Bacteria from Solanum tuberosum Effective Against Streptomyces scabies.

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Use of biological control offers a cost effective and environmentally safe method for controlling plant diseases. Biocontrol agents that can colonize roots and live endophytically within plant tissue should allow for effective disease control. The goal of this research was to develop protocols to isolate putative *Streptomyce*s species from potato stem and tuber tissue due to their ability to produce inhibitory compounds which could potentially reduce diseases caused by *Streptomyces scabies*. Endophyte isolation from *Solanum tuberosum* (potato) plants (stem and tuber tissues) that were grown in a biocontrol field trial were the focus of this study. Several surface sterilization processes were assessed and two different tissue-processing methods were focused on to obtain endophytes: 1) excising cross-sections of stem tissue and 2) use of a maceration technique for tuber and stem tissue. From the stem tissue, four putative *Streptomyces* species were isolated; one of the four isolates was inhibitory to *Streptomyces scabies* in agar plate bioassays. To date, two putative *Streptomyces* species and several other bacterial species were isolated from tuber tissue. Further characterization of these isolates are underway with the goal of discovering endophytic pathogen-inhibiting bacteria that could then be used in concert with soil-dwelling biocontrol agents to enhance disease control of the potato scab pathogen.