

Application of *Streptomyces* isolates to control chili bacterial wilt disease

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ABSTRACT

Bacterial wilt disease reduces chili production and quality in Indonesia. Disease control is difficult because the pathogens are found in the plant rhizosphere, for that we need a control approach using biological agents that can reach the plant rhizosphere. One of which is the use of *Streptomyces* as biocontrol agents. *Streptomyces* isolates can be isolated from the rhizosphere of healthy plants in infected areas, but the effectiveness of their control against bacterial wilt disease needs to be selected. The aim of the study was to select *Streptomyces* species that have good biological control abilities against chili bacterial wilt disease. Ten isolates isolated from various rhizospheres of healthy chili plants were then tested for their antagonistic ability in vitro against *Ralstonia solanacearum* chili isolates. The four best isolates independently and composites were applied to chili plants infected with *R. solanacearum*. The test results showed that 5 out of 10 *Streptomyces* isolates had antagonistic activity against *R. solanacearum*. The application of composite *Streptomyces* can reduce the highest number of wilt infections. Composite *Streptomyces* isolates were proposed as potential biological agents to control bacterial wilt disease in chilies.

Key word: *Streptomyces* isolates, control, Bacterial wilt disease, chilli