

# Agriculture & Organic farming

## **Efficacy of bacillus subtilis, trichoderma harzianum, kocide for controlling the bacterial wilt on tomato**

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Tomatoes are now one of the most commercially important vegetables in Cambodia, where they are the fourth most important agriculture crop and the leading tomato growers. Bacterial wilt on tomato disease, caused by *Ralstonia solanacearum*, was observed in Cambodia in 2019 and showed wilting symptoms as well as vascular browning from cut stems, as well as testing positive for *Ralstonia solanacearum* using the Rs Immunostrip. The bacterium has caused losses of up to 100% on tomato plantations, which has likely been a long-standing issue for Cambodian farmers. Due to severe insect pest and disease problems in Cambodia, pesticide use in crops such as cucumbers, cauliflower, brassica, tomatoes, and eggplant is quite high. Because bacterial wilt is readily eliminated in tomato production, this study was undertaken to evaluate the management of bacterial wilt on tomatoes and to determine the various application treatments for controlling bacterial wilt disease. The experiment was set up in a randomized complete block design (RCBD) with four replications and four treatments, totaling sixty-four pots. The plants were injected and examined for disease severity after being planted for 24 days. The results of the experiment revealed that the scoring of disease severity was considerably different, with *Trichoderma harzianum*, *Bacillus subtilis*, and Kocide having the lowest scores compared to the control at 95 percent (P-value 0.05). Although the disease incidence of bacterial wilt was 95 percent (P-value 0.05), the disease incidence of

*Trichoderma harzianum*, *Bacillus subtilis*, and Kocide were lower. In comparison to the successes, the results revealed that *Trichoderma harzianum*, *Bacillus subtilis*, and Kocide are the three species that can achieve the maximum total yield of tomatoes, with average yield amounts.

### **Biography**

Ong Socheath was born on the 08th of January 1988 in Phnom Penh, Cambodia. She is plant pathologist and lecture at the Royal University of Agriculture. Socheath graduated her BSc. (2006) from Royal University of Agriculture, MSc (2015) from University of the Philippines Los Banos and Ph.D. (2021) from Nagoya University. In 2015 she became instructor in the newly established laboratory of plant pathology, and in 2017 she became deputy head of the department of plant protection, faculty of Agronomy, a position she still holds. She has expertise in plant protection. Her