A Scientific Attempt to Decrease the Mortality Rate of Solanum lycopersicum Plants in Tropical and Subtropical Areas

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The purpose of this project is to determine whether garlic and rooting hormone, along with water, can be used to help Solanum lycopersicum (tomato) plants resist Ralstonia solonacearum bacteria in tropical and subtropical soils. It was hypothesized that tomato plants treated with garlic, rooting hormone powder, and water together will survive better than individual treatments of garlic and water, rooting hormone powder and water, and water. 100 tomato plant seeds were planted in two potting trays with fifty cubicles each. A randomized complete block design was used to decide the location of different treatments in a field so all treatments can experience similar soil benefits. There were four different treatments, each with five replications. Water was kept as the control and each of the other treatments were the variables. Each treatment in a replica had five plants. Since there were five replications, there were a total of twenty-five plants all together for each treatment. Water treatments received 100mL water daily. Garlic treatments received 0.5 grams garlic powder in 100mL water weekly, and 100mL water during other days other days of the week. Rooting hormone treatments received 0.5 grams rooting hormone in 100mL water weekly, and 100mL water during other days of the week. The mixture treatment received 0.5 grams of each powder (rooting hormone and garlic) in 100mL water weekly, and 100mL water during other days of the week. Data indicated that the garlic and mixture treatments aided better in the resistance of R. solonacearum, with a mortality rate of just 4%. Rooting hormone powder produced a mortality rate of 40%. Water treatments gave a mortality rate of 32%. Therefore, garlic may be a potential source of medicine to eradicate R. solonacearum.

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