

# EFFECT OF FOLIAR APPLICATION OF SALICYLIC ACID ON GROWTH AND YIELD OF SELECTED TOMATO (*SOLANUM LYCOPERSICUM* L.) CULTIVARS

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**Abstract:** Tomato is a widely grown, high-demand vegetable in Sri Lanka. Despite the increase in tomato growing area, the improvement in quality and yield is still negligible. This study aimed to determine the effects of foliar application of salicylic acid on the growth and yield of selected tomato cultivars. The pot experiment was conducted in a greenhouse. It was laid out in a complete randomized design in factorial arrangements with twenty replications. Certified seeds of Lanka sour and Thilina were sown in nursery trays, and healthy seedlings were transferred to pots after three weeks. The treatments consisted of three concentrations (150, 200, and 300 ppm) of salicylic acid and the control (deionized water). Foliar applications were applied to the plants during the vegetative, flowering, and ripening stages of the plants twice at one-week intervals. The results showed that there was no interaction effect ( $P < 0.05$ ) on vegetative growth of the cultivars. However, a significant difference was observed between the concentrations in the vegetative growth. The highest dry weight ( $1.98 \pm 0.29$  g) and chlorophyll content index ( $17.08 \pm 0.29$ ) were obtained with 150 ppm salicylic acid. The lowest dry weight ( $0.62 \pm 0.25$  g) and chlorophyll content index ( $11.08 \pm 0.01$ ) were obtained with 300 ppm salicylic acid. However, there were significant ( $P < 0.05$ ) interaction between cultivars and salicylic acid concentrations on yield components and yield. The highest fruit number ( $28 \pm 0.3$ ), single fruit weight ( $186 \pm 1.2$  g), and yield ( $5.1 \pm 4.6$  plant  $\text{kg}^{-1}$ ) were obtained from the Lanka sour at the concentration of 150 ppm. The lowest fruit number ( $17 \pm 0.1$ ), single fruit weight ( $65 \pm 0.2$  g), and yield ( $1.5 \pm 0.7$  plant  $\text{kg}^{-1}$ ) were obtained from the Thilina cultivar with 300 ppm concentration. Hence, it could be concluded that the use of the Lanka sour cultivar and foliar application of salicylic acid at 150 ppm should be encouraged for tomato production to obtain higher growth, yield components, and yield.

**Keywords:** Foliar application; Salicylic acid; Tomato; Yield