Effects of chitosan and salicylic acid on physiological characteristics of eggplant (Solanum melongena)

ABSTRACT

Eggplant (Solanum melongena) falls under the fruit species under the family of Solanaceae. It is grown widely throughout tropical and subtropical Zones in the world. It is a good source of phenolics, flavonoids, vitamins, calcium and protein. Due to its high nutritional properties, the demand for eggplant is increasing annually. However, due to limited planting space, it is difficult for the producers to increase the production in order to meet the demand. Thus, the objective of this study is to improve the growth and development of selected physiological characteristics of eggplant with chitosan and salicylic acid. The experiment was carried out in factorial randomized complete block design (RCBD) with 4 replications. This experiment was conducted at Field 15, Universiti Putra Malaysia. The plants were treated with chitosan and salicylic acid at four different rates; 0, 2, 4 and 6 ml/L for chitosan and 0, 50, 100 and 150 mg/L for salicylic acid. The treatments were applied either alone or in combination. Results revealed that the application of chitosan combined with salicylic acid influenced the physiological characteristics of the eggplant compared to the control group. Combination of 4 ml/L chitosan with 150 mg/L salicylic acid gave the highest mean values of plant height (107.13 cm), number of branches (14.91), number of leaves (136.08), total number of flowers per plant (101.8), compared to other treatments. Therefore, due to cost effectiveness and better impact on physiological characteristics the combination of 4 ml/L chitosan and 150 mg/L salicylic acid as foliar fertilizer is recommended to improve the growth and development of eggplant.

Keyword: Solanum melongena; Chitosan; Salicylic acid; Physiology