

Foliar application of methanol for mitigation of temperature stress on okra plants

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Temperature stress due to global warming is one of the limiting factors for crop production. Therefore, suitable methods have to be developed to overcome the temperature stress in order to increase production in the unit area. Foliar application of methanol is a method which increases crop CO₂ fixation in unit area and influence on crop yield. The main objective of the study was to evaluate the effect of foliar spray with different concentrations of ethanol on growth and yield of okra under temperature stress conditions. The experiment was done as a factorial based on completely randomized design with three replications at poly tunnel of the Open University of Sri Lanka. Treatments tested in this study were as follows: four concentrations of methanol (0, 20, 25, and 30 (v/v)) and two levels of temperature (ambient temperature (32⁰ – 33⁰ C) / Temperature stress (35⁰–36⁰C). Results revealed that interactions between temperature stress and methanol were significantly different ($P \leq 0.05$) in growth and yield traits of okra. Concentrations of 25% and 30% of methanol were positively influenced the plant height, number of leaves, leaf area, chlorophyll content and fresh weight of pods per plant under temperature stress but no significant difference between these two methanol treatments were observed. Therefore, 25% of methanol can be recommended as economically viable concentration at temperature stress to obtain higher yield.

Keywords: methanol, temperature stress, okra and yield

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