GLOBAL WARMING: COMBATING TEMPERATURE STRESS ON GREEN LEAF LETTUCE (*Lactuca sativa*) PLANTS BY MODIFYING GROWTH MEDIA

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The study was carried out at The Open University of Sri Lanka to identify the suitable growth media to combat temperature stress due to Global warming on growth and yield of Lettuce. Two temperature conditions as temperature stress (T1), ambient temperature (T2) and five types of growth medias as coir dust (M1), Coir dust: sand (1:1) (M2), coir dust : sand (1:2) (M3), Coir dust : sand : cow manure (1:1:1) (M4) and top soil (M5) were tested in this study. All the treatments were arranged in a Completely Randomized Block Design (CRD) with three replicates. Green leaf lettuce was the variety selected and growth parameters were measured at two weeks interval. Yield parameters such as number of leaves, fresh biomass per plant and dry biomass per plant were measured after harvest. Moisture (%) and porosity of the media were measured to determine the water retention ability under the temperature stress condition. SAS Statistical software (university version) was used for the statistical analysis and the data were statistically analysed according to the General Linear Model (GLM) procedure and the mean separation was done using the Least Significant Difference (LSD) at p = 0.05 level. The factors media, temperature and their interaction effect were significantly influenced on the growth and yield parameters. Treatment at temperature stress with coir dust: sand (1:2) (T1M3) and treatment at ambient temperature with coir dust: sand (1:2) T2M3 were shown higher porosity and moisture content. However, media which were shown higher porosity beyond the optimum level resulted in lower moisture content due to high rate of drainage. Media of Coir dust: sand: cow manure (1:1:1) (M4) was the only treatment which was positively affected on growth and yield of lettuce under temperature stress condition. Therefore, media of Coir dust: sand: cow manure (1:1:1) (M4) is the best suited growth media for Lettuce cultivation to combat temperature stress due to global warming.

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