EFFECT OF SOIL MOISTURE DEFICIT STRESS ON SELECTED AGRONOMIC PARAMETERS OF TOMATO (*Lycopersicon esculentum* Mill.) AT DIFFERENT GROWTH STAGES

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ABSTRACT

A study was conducted in the land of the Agronomy Farm at the Eastern Eastern University of Sri Lanka, Vantharumulai located in Eastern region during the *Yala* season of April 2007 to August 2007 to determine the Agronomic responses of soil moisture deficit stress of Tomato (*Lycorpersicon esculentum*) variety KC 1 during the vegetative, flowering, early fruiting and fruit ripening stage. The experiment was designed out in a Randomized Completely Block Design (RCBD) with five treatments and four replications in accordance to the recommended practices of Department of Agriculture (DOA) with relation to farmer adaptation at Eastern region.

Moisture stress was imposed for different treatments for a period of four days each at the above growth stages. The stress treatment was imposed by with holding water completely at once. The control plants were watered to field capacity for every day. The observation and data measurement were made from ten days after transplanting to harvesting during each stress cycle at different growth stages (vegetative, flowering, early fruiting and ripening stage). Measurement data were analyzed by using SAS (ANOVA) to determine the suitable stage/ stages able to give better yield at moisture stress condition.

In each treatment the Crop Growth Rate (CGR), Net Assimilation Rate (NAR) and Root → Shoot Ratio (RSR) and yield were changed by moisture stress and significant differences were found among them and the plants without any effect of moisture stress on yield / relatively avoidable effect on yield should be the suitable for, it was the long period of moisture stress in the stage of ripening and vegetable through the comparison of moisture stress condition with control treatment without moisture stress.

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