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EFFECT OF DIFFERENT MULCHING MATERIALS ON THE GROWTH AND YIELD PERFORMANCE OF TOMATO (*Solanum lycopersicum*) VARIETIES

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ABSTRACT

Tomato (*Solanum lycopersicum*) belongs to the family Solanaceae is one of the important vegetable crop grown in Sri Lanka. A field experiment was conducted to evaluate the effect of different mulching materials on the growth and yield performance of tomato (*Solanum lycopersicum*) varieties. Two factor factorial experiment was carried out in Randomized Complete Block Design (RCBD) with three replicates. Six mulches (un-mulch - control, mulch film, white polythene, paddy straw, sun-hemp and *Gliricidia*) and three varieties (KC₁, Mahesha, and Rajitha) were used as treatment combinations. All other management practices were performed based on the recommendation of Department of Agriculture except weed control. The effect of mulching materials on weed population, modification of soil microclimatic condition, growth and yield parameters were recorded and data were analysed in ANOVA using SAS 9.1 package. The means were compared by using Duncan Multiple Range test. Mulches were proved their effectiveness in weed control, ameliorating the soil temperature and soil moisture conservation than un-mulch treatment, but the least weed population was observed under the polythene mulch. There was a significance difference in vegetative growth traits (Plant height and number of branches) and yield parameters (fruit weight, circumference number of fruits per plant and yield) of tomato among mulches and varieties. In growth and yield parameters, the highest growth and yield parameters were observed under *Gliricidia* mulch in Mahesha variety. The usage of organic mulches economically profitable compare to un-mulched and plastic mulched cultivation. It can be concluded that *Gliricida* mulch and Mahesha variety can be recommended as the best combination for growing of tomato in Kilinochchi District during *Yala* season based on the growth and yield performance of the plant.

Keywords: Mulching, Tomato Varieties, Treatment, Growth Parameter, Soil Parameters, Economic