Effects of Different Population Densities on the Growth and Yield of *Maize (Zea mays* L.) var. *Thadra'* in the Batticaloa District of Sri Lanka

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An experiment was carried out to determine the effects of different population densities on the growth and yield of maize *(Zea mays* L.) var. *Thadra'* in the Batticaloa district of Sri Lanka during the period of June to September, 2017. The experiment was arranged in a randomized complete block design with three replications. Plant population densities were defined as treatments *viz.* 111,111 plants ha" (T1), 83,333 plants ha^{-1} (T2), 55,555 plants ha."[1] (T3), 41,666 plants ha" (T4), and 33,333 plants ha-' (T5). In this experiment, T3 was the control treatment as per recommendation of Department of Agriculture, Sri Lanka. Agronomic practices were followed uniformly for all treatments as recommended by the Department of Agriculture, Sri Lanka. Growth parameters *viz.* plant height, leaf area, plant biomass were measured at monthly interval and yield parameters were measured at the end of the experiment. Analysis of Variance was performed to determine significant difference among treatments ($p < 0.05$). Results revealed that plant height, leaf area, plant biomass and thousand seeds weight of the maize var. *Thadra'* were significantly higher in 41,666 plants ha^{-1} (T4) compared with T3. It could be the optimum plant population for maize cultivation in Batticaloa district. Plants grown at this population density would have received optimum amount of resources. Therefore, growth and yield of maize var. *Thadra'* was higher at this treatment. The lowest population density (33,333 plants ha^{-1}) and the highest population density (111,111 plants ha") reduced the growth and yield of maize var *Rhadra'* . From this experiment, it could be stated that the optimum population densities of maize var. *Rhadra'* was 41,666 plants ha^{-1} for the cultivation in the Batticaloa district of Sri Lanka.

Keywords: Optimum population, Maize population density, Growth parameters of maize, Thousand seeds weight