

Growth and Yield response of Maize (*Zea mays*) intercropped with different crop densities of Green gram (*Vigna radiate*)

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Abstract: The recent statistics showed that the extent under maize cultivation is increased in Jaffna as there is no way to bring maize from other parts of the country. But the maize cultivation is not very profit due to high cost of production. The income per unit area has to be increased to sustain the cultivation of maize in Jaffna. Therefore an experiment was conducted to test the possibilities of introducing green gram as an intercrop with maize planted at recommended spacing (90cm x 30 cm). A field experiment was conducted during August 2007 to December 2007 to find the growth and yield response of maize intercropped with green gram at the Agricultural Research Station, Thirunelvely, Jaffna, Sri Lanka. The population of the maize crop was maintained as same at recommended spacing and three different spacing of green gram were tested. The experiment was carried in randomized complete block design with four replicates. Maize was planted in rows at 90 cm x 30 cm and green gram was planted as intercrop in between maize rows in the spacing of 30cm x 10cm (T₁), 22.5 cm x 10cm (T₂) and 18cm x 10cm (T₃). Green gram was seeded 15 days after seeding maize. The yield and growth parameters such as height, leaf area, pod number, etc. of maize and green grams were recorded. The yield parameters and growth parameters of maize among the treatments are non-significant. Therefore yield of maize was not significantly affected by intercropping with green gram. But the yield components of green gram were differed significantly. The three rows of green gram between maize rows (T₂ treatment) gave higher yield than other treatments. The highest land equivalent ratio (LER) 1.20 was also recorded in the same treatment (T₂). The farmer in Jaffna district can be advised to intercrop three rows of green gram at the spacing of 22.5cm x 10 cm in between maize to maize rows which is planted at recommended spacing of 90cm x 30 cm to increase the profit from unit land area.

Keywords:

Growth Parameters
Intercrop
Land Equivalent Ratio (LER)
Main Crop
Yield Parameters