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Growth and yield performances of cabbage grown under polytunnel in low country wet zone in Sri Lanka as affected by rate and split application of Albert fertilizer

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Abstract

An experiment was accomplished in the low country wet zone of Sri Lanka from October 2021 to January 2022 in a protected house to study the effect of rate and split application of Albert fertilizer on growth and yield performances of cabbage (*Brassica oleracea* L. var Green Coronet). The experiment was carried out in a two-factor factorial (2×3) Completely Randomized Design with four replicates. The tested two factors were, rate of fertilizer; A₁ (1.0 g/plant/day), A₂ (1.5 g/plant/day), A₃ (2.0 g/plant/day) and number of split applications of fertilizer; F₁ (1 time/plant/day), F₂ (2 times/plant/day), F₃ (3 times/plant/day). Treatments were applied daily. Average day temperature inside the protected house was 32.5 °C and average night temperature inside the protected house was 27 °C. Growth parameters (plant height, canopy diameter and number of loose leaves per plant) were taken fortnight intervals while cabbage heads and total biomass yield were taken as yield parameters after 110 days from transplanting. The data were analyzed using ANOVA and means were separated by least significant difference (LSD) at 5% probability level. There was no significant effect of split of fertilizer and no interaction effect between rate and split of fertilizer. Plant height, canopy diameter and number of loose leaves per plant significantly influenced by amount of fertilizer. The treatment of 2.0 g/plant/day gave significantly higher values for above growth parameters with compared to 1 and 1.5 g/plant/day treatments. Even though, no significant difference was recorded in biomass yield, significantly highest head yield was recorded in the treatment of 1.0 g of Albert fertilizer/plant/day. When considering the economic yield, it can be concluded that the treatment of 1.0 g/plant/day is the best fertilizer rate for cabbage grown under polytunnel condition in low country wet zone of Sri Lanka. Also, fertilizer application once per day can be recommended when considering the energy use efficiency since there is no significant effect of split applications of fertilizer.

Keywords: Albert fertilizer, Cabbage, Polytunnel

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