Graded Level of Nitrogen and Mulching on Growth and Yield Parameters of Tomato (*Solanum lycopersicum* L.) in Agrhakhanchi, Nepal

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Abstract

A field experiment was carried out to find out the effect of different levels of nitrogen and mulching on growth and yield parameters of tomato (Solanum lycopersicum L.) var. VL443 at commercial tomato farm in Sandhikharkha, Arghakhanchi from February – June 2022. The eight treatments were laid out in two factorial RCBD with three replications. The treatment combinations were T1 (Nonmulching with 0 kgha-1), T2 (Non-mulching with 50 kgha-1), T3 (Non- mulching with 100 kgha-1), T4 (Non-mulching with 150 kgha-1), T5 (Mulching with 0 kgha1), T6 (Mulching with 50 kgha-1), T7 (Mulching with 100 kgha-1) and T8 (Mulching with 150 kgha-1). Growth parameters, yield and yield attributing traits were recorded. The result indicated that the 150 kgha-1 dose of N application contributes to the higher plant height (178.13 cm), the number of leaves (47.83), fruit length (72.50 mm), fruit diameter (58.83 mm), individual fruit weight (71.67 g) and yield (2.51 kg/ plant). Similarly, plastic mulch contributes significantly higher plant height (173.6 cm), the number of leaves (47.30), fruit length (68.84 mm), fruit diameter (54.20 mm), Individual fruit weight (72.52 g) and yield (2.53 kg/ plant) as compared to non-mulched condition. Furthermore, fruit yield per hectare in mulching with 150 kgha-1 plot was 2.7 times higher in comparison to non-mulching with 0 kgha-1 plot. So, the application of 150 kgha-1 nitrogen along with plastic mulching is recommended to increase the yield of tomatoes under the plastic tunnels in Arghakhanchi.

Keywords: Mulching, Nutrient, Plastic tunnels, Urea