

EFFICACY OF PEAK PERFORMANCE NUTRIENT (PPN) TO PREVENT *TOMATO YELLOW LEAF CURL VIRUS (TYLCV)*

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Extended Summary

Present study had been conducted to evaluate the effect of peak performance nutrient (PPN) on different varieties and lines of tomato against *tomato yellow leaf curl virus (TYLCV)* during the period from October 2014 to March 2015. Five varieties namely BARI Tomato-3, BARI Tomato-7, BARI Tomato-9, Local jessore-2, Local jessore-3 and five lines namely BD-7276, BD-7281, BD-7290, BD-7754, BD-7762 were evaluated against incidence and severity of *tomato yellow leaf curl virus (TYLCV)*. The effect of diseases on yield and yield contributing characters were also observed. The selected tomato varieties and lines differed significantly among themselves in respect of disease incidence and severity. The highest disease incidence was found in Local Jessore-3 (100%), Bd-7281(100%), BD-7754 (100%) and BD-7762 (100%). The lowest disease incidence was found in the variety BARI Tomato-9 (0.0%). Considering the performance of selected tomato varieties and lines, it was observed that variety BARI Tomato-9 and line BD-7276 was graded as resistance against *tomato yellow leaf curl virus (TYLCV)* by using the PPN. The cultivars BARI Tomato-3, BARI Tomato-7, Local Jessore-2 and line BD-7290 showed moderate resistance, while the lines BD-7762, BD-7754, BD-7281 and control variety Local jessore-3 were highly affected by *Tomato Yellow Leaf Curl Virus (TYLCV)* among treatments used in the experiment. In case of number leaves, branch and flowers per plant, the maximum number of leaves, branch and flowers was recorded in the variety BARI Tomato-9 (72.00, 10.67 and 68.33, respectively). The minimum number of leaves, branch and flowers was obtained in the control variety Local Jessore-3 (47.67, 6.00 and 51.67, respectively). On the basis of yield and yield contributing characters, the yield performance also differed significantly. The highest yield per plant was recorded in the variety BARI Tomato-9 (2.70) and the lowest in Local Jessore-3 (1.09). In case of the physiological features, we also founded a significant difference among the different varieties and lines. In case of net chlorophyll content, net assimilation rate, intercellular carbon-di-oxide concentration and respiration rate per plant, in all cases the highest value was recorded in the variety BARI Tomato-9 (65.17, 1.03, 37.33 and 1.25 respectively) and the lowest was in Local Jessore-3 (40.20, 0.33, 16.67 and 0.33, respectively).

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