



RESEARCH PAPER

Effect of essential heavy metals on leaf area, absolute growth rate and flower yield of tuberose cv. 'Prajwal'

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Abstract : An experiment was conducted with graded levels of three essential heavy metals viz., $MnSO_4$, $CuSO_4$ and $ZnSO_4$ at three different concentrations *i.e.*, $MnSO_4$ @ 1000, 2000 and 3000 mg kg^{-1} soil, $CuSO_4$ @ 100, 200 and 300 mg kg^{-1} soil, $ZnSO_4$ @ 200, 400 and 600 mg kg^{-1} soil in addition with no application of nutrients as well as essential heavy metals in the soil (Control). The experiment was carried out with polybag culture method and conducted with a Completely Randomized Design using three replications. Data recorded on leaf area, absolute growth rate, and flower yield of tuberose cv. 'Prajwal' were analyzed using OPSTAT software and the least significant difference was used to differentiate the treatments. Mean analysis of the data indicated that application of $ZnSO_4$ @ 400 mg kg^{-1} soil recorded significant increase in the leaf area (209.22, 239.31 and 224.87 cm^2 per plant respectively during 2018-19, 2019-20 and the pooled data analysis) and absolute growth rate (0.035, 0.109 and 0.073 $cm\ day^{-1}$ respectively during 2018-19, 2019-20 and the pooled data analysis). A substantial increase in the weight of single floret in tuberose cv. 'Prajwal' was noticed by application of $ZnSO_4$ @ 400 mg kg^{-1} soil which might be attributed to the consequential increase in the leaf area and absolute growth rate, even though the analyzed data was found non-significant.

Key Words : $CuSO_4$, Heavy metals, $MnSO_4$, Leaf area, AGR, Tuberose, $ZnSO_4$

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