

EFFECT OF MYCORRHIZA INOCULUM AND INORGANIC FERTILIZERS (N AND P) PHOTOSYNTHETIC PARAMETERS OF *AMARANTHUS TRICOLOR*

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The experiment was conducted to study the effect mycorrhiza inoculum (premixed soil), two inorganic fertilizers (Urea, N and Phosphorous, P) on growth indicators (shoot height, total number of leaves per plant, dry weight of whole plant) and photosynthetic pigments of *Amaranthus tricolor*. The experiment was carried out with four treatment (T) combinations T1: Control (only basal dose), T2: 50% mycorrhiza (M) + 50% P and T3: 50% M + 50% N, T4: 50% N + 50% P separately and the basal dose was - (Urea = (1.78 g/polybag), Muriatic of potash (MOP) = (0.375 g/polybag) and Gypsum = (0.166g/polybag) in polybags containing 15 kg soil/ bag). The parameters; shoot height, number of leaves per plant, fresh weight and dry weight of whole plant were measured (after 40 DAS) and pooled (from three varieties). Chlorophyll and carotenoids content of leaves of three varieties of *Amaranthus tricolor* of treatment T3 were quantified separately using acetone and methanol as solvent after 23 DAS. The experiment was carried out in a Completely Randomized Design (CRD) with three replications. Two-way analysis of variance (ANOVA) was carried out and the mean differences of the treatments were adjusted by Tukey pairwise comparisons at $P \leq 0.05$ of significant level. The treatment (T3) significantly influenced the shoot height of amaranth. The highest (49.07 cm) and lowest (31.78 cm) shoot height were recorded in T3 treatment (M + N) and T1 (basal dose; control) respectively and both are significantly different at $P \leq 0.05$. The highest number of leaves per plant was observed in T3. The treatments T1, T2 and T4 had statistically identical effect. A variation in dry weight of amaranth was observed due to the effect of treatments T2 and T3 with compare to the control. It was observed that the maximum dry weight per plant 4.45 g and 5.42 g was observed in T2 and T3 respectively and that was higher than all other treatments. The experimental results indicated that treatment T3 showed highest mean shoot length, mean number of leaves and mean dry weight compared to T4 and T1. Both solvents showed a significant variation ($P=0.05$) in yielding of chlorophylls a, b and carotenoids. Acetone produced the highest % amount of chlorophyll a ($\mu\text{g}/\text{ml}$) (76.4%) and Carotenoids (30.6%) whereas, methanol was good for extracting chlorophyll b (28.4%).

Keywords: Mycorrhiza, Nitrogen, Phosphorous, photosynthetic parameters, *Amaranthus tricolor*