

P-147 (231)**EFFECT OF ASCORBIC ACID ON MORPHO-PHYSIOLOGICAL CHARACTERISTICS AND PRODUCTION OF STEVIA REBAUDIANA (BERT.)**

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Stevia rebaudiana (Bert.) is an herbaceous perennial plant of the Asteraceae family, native to Paraguay. To study the effect of foliar application of ascorbic acid on growth indices of *Stevia*, an experiment based on a completely randomized design with three replications was conducted in the University of Zanjan. Four levels of Ascorbic acid (0, 0.5, 1, 2 mM) were applied three times after establishment of transplants in the field with 10 days intervals. Factors including plant height, number of branches, number of nodes, number of leaves/plant, leaf fresh and dry weight/plant, total fresh and dry weight/plant, phenol, total flavonoid and total chlorophyll were studied. Based upon statistical analysis, the results showed that ascorbic acid significantly influenced above mentioned characteristics. The highest average plant height (46.77 cm compared to 37.33 cm in control) was recorded in 2 mM ascorbic acid. The highest number of nodes (23.33 compared to 18.00 in control), number of leaves/plant (957.67 compared to 608.33 in control), leaf fresh weight/plant (127.13 gr compared to 63.18 gr in control) and leaf dry weight/plant (37.13 gr compared to 17.48gr in control), phenol (6.02 mg/g DW compared to 4.01 mg/g DW in control), total flavonoid (14.26 mg/g DW compared to 9.34 mg/g DW in control), total chlorophyll (5.33 mg/g FW compared to 3.72 mg/g FW in control) were recorded in 1 mM ascorbic acid. Collectively the results showed that application of Ascorbic acid significantly improved vegetative growth and production of *Stevia rebaudiana*.

Keywords: Ascorbic acid, Chlorophyll, Foliar application, Flavonoid, Phenol, Vegetative growth, Yield