

عنوان مقاله:

The Effect of Aminolevulinic Acid on Physiological and Biochemical Characters of Red-fleshed Apple (*Malus* sp. Genotype R1R1) under Salinity Stress

محل انتشار:

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خلاصه مقاله:

The present study was conducted to evaluate the ameliorating effect of δ -aminolevulinic acid (ALA) on physiological and biochemical changes of induced NaCl-salinity stress on in vitro shoot and callus cultured of red-fleshed apple. Shoot and callus segments of the red-flesh apple of Local Iranian genotype were cultured on MS medium containing different levels of NaCl (0, 30, 60 and 90 mM) and ALA (0, 2.5, 5, 10 and 20 μ M). Physiological and biochemical variations of treated explants with or without NaCl and ALA treatments were recorded. In both explants, salinity reduced chlorophyll and carotenoids contents, but the activities of antioxidant enzymes and accumulation of total phenol and anthocyanin increased with increasing salinity level (90 mM). Exogenous ALA in 5 and particularly in 10 μ M was effective in enhancing chlorophyll and carotenoids contents, increasing the activities of superoxide dismutase, ascorbate peroxidase and accumulating of total phenol and anthocyanin. These results indicate that ALA has a powerful salinity-ameliorating potential on in vitro cultured shoot and callus of Iranian red-fleshed apple.

کلمات کلیدی:

Red-fleshed apple, Salinity, δ -aminolevulinic acid, Antioxidant, Anthocyanin

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