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The impact of arbuscularmycorrhizal fungi in improving growth, flower yield and tolerance of kalanchoe (*Kalanchoe blossfeldiana Polin*) plants grown in NaCl-stress conditions

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Soil salinity is a worldwide dilemma, restricting plant growth and production particularly in arid and semiarid regions. This study is aimed to investigate the effects of arbuscularmycorrhizal (AM) fungus (*Glomus deserticola*) on growth, flower yield, salinity tolerance and mineral acquisition in kalanchoe (*Kalanchoe blossfeldiana Polin*) plants under different levels of salinity. Mycorrhizal (+AMF) and non-mycorrhizal (-AMF) kalanchoe plants were subjected to four levels of salinity (0, 50, 100 and 200 mMNaCl). The application of NaCl, especially at high levels; significantly reduced growth responses, flower parameters, mineral contents, and levels of mycorrhizal colonization of mycorrhizal and non-mycorrhizalKalanchoe plants comparing to control plants. However, the rate of reduction was more pronounced in non-mycorrhizal treated plants. Leaves of AM kalanchoe at the highest salt level were significantly greener (more chlorophyll) than those of the non-AM plants. MycorrhizalKalanchoe plants significantly had higher biomass, plant height, leaf area, flower yield and concentrations of nutrients (P, N, K, Ca and Mg) than the non-mycorrhizal plants irrigated with or without NaCl. Under salt stresses, AM colonization had greatly reduced the mineral contents (Na and Cl) in leaf tissues of the Kalanchoe plants comparing to their equivalent of the non-mycorrhizal plants. Interestingly, AM inoculations significantly increased salt tolerance index (STI) as compared to non-AM plants. Results of this study suggest that AM fungi contribute alleviation of the deleterious effects of saline soils on growth and flowering yields of the ornamental plants by improving mineral contents, mitigation of NaCl-induced ionic imbalance and increasing the salt tolerance index of the plants.

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Some clinico-laboratory aspects of atopic dermatitis; the value of new cytokines for diagnosis and monitoring severity in Saudi children

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Atopic dermatitis (AD) is a chronic inflammatory skin disease that commonly begins in early infancy, runs a course of relapses and remissions, and is associated with a characteristic distribution and morphology of skin lesions. Furthermore, pruritus and consequent sleeplessness are hallmarks of AD. A complex interaction between susceptibility genes encoding skin barrier molecules and markers of the inflammatory response, host environments, infectious agents, and specific immunologic responses are involved in the pathophysiology of AD. Studies about the role of cytokines on the immunopathogenesis of AD are generally based on *in vitro* observations and this role has not been completely clarified yet. Serum levels of total IgE, IL-18, IL-12/p40 and the relationship between these parameters and disease severity; determined using the SCORAD index, in a group of children with AD were investigated in this study. Serum levels of total IgE were measured by the double antibody sandwich ELISA technique, and serum levels of IL-18, IL-12/p40 were measured by immunoenzymatic assay method. Serum levels of total IgE and IL-18 and IL-12 were found significantly higher in study group than in controls ($P < 0.001$). A statistically significant relationship between SCORAD values and serum levels of total IgE ($P < 0.001$), IL-18 ($P < 0.001$), and IL-12/p40 ($P < 0.001$) was determined. These results showed that serum levels of IL-18 and IL-12 can be a sensitive parameter that importantly correlates with clinical severity of AD, can play a role in the immunopathogenesis of AD, and furthermore maybe used in the diagnosis and follow-up of the disease in addition to other parameters.

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