Pak. J. Nematol., 27 (2): 281-296, 2009

EFFECT OF MELOIDOGYNE JAVANICA AND MOISTURE STRESS ON GROWTH AND PHYSIOLOGICAL RESPONSE OF BRINJAL

S.S. SHAUKAT, A.K. MOAZZAM, W. AHMED AND F. SHAHINA*

Institute of Environmental Studies,
University of Karachi, Karachi-75270, Pakistan

Abstract

This investigation was undertaken to ascertain the effect of root-knot nematode (*Meloidogyne javanica* (Treub.) Chitwood) and moisture stress on growth and physiological parameters of brinjal (*Solanum melongena* L.). Moisture stress was created by practicing various watering regimes: watering plants at 1 and 2 – day intervals, while plants watered daily served as controls. Moisture stress alone or in combination with root-knot disease caused wilting of leaves and chlorotic patches on the surface of brinjal leaves. Moisture stress alone significantly suppressed pigment synthesis, shoot and root fresh and dry weights of brinjal. These effects were more pronounced in root-knot infected plants and at greater moisture stress. Reducing and non-reducing sugars were significantly diminished to varying degree in plants subjected to soil moisture stress or root-knot nematode or both in combination and the effect being more accentuated at greater moisture stress. Non-reducing sugars declined to a greater extent than did the reducing sugars, particularly under moisture stress condition. Moisture stressed plants, particularly those infected with *M. javanica,*accumulated ample amounts of soluble phenols as an induced mechanism against the stress. The results are discussed in the light of physiological responses of plants to biotic and abiotic stress..