

Abstract

Brassinosteroids are plant hormones which are also known for their pleiotropic effects on plants exposed to various biotic and abiotic stress factors. The aim of this study was to evaluate the role of 10^{-8} M 24-epibrassinolide in *Zea mays* L. and *Vicia faba* L., grown under conditions of drought stress (6, 10, 14, 18 days) with an emphasis on different answer to their drought sensitive and resistant genotypes. Net photosynthetic rate (P_N) and transpiration rate (E), stomatal conductance (g_s), osmotic potential (ψ_s), proline (Pro) and malondialdehyde (MDA) content and membrane injury index (MI) were measured in stressed plants and plants grown under controlled conditions. The most important factor influencing these parameters was drought, which led to a gradual decrease of P_N , E, g_s , ψ_s and increase of Pro, MDA a MI. The effect of 24-epibrassinolid was significant rather exceptionally and in these cases, more pronounced response was observed in drought stressed plants compared with plants grown under controlled conditions. Plants showed intraspecific variability in their reactions, which in sensitive and tolerant genotypes were not clear and differed depending on the studied parameters and conditions of plant cultivation.