Turkish Journal

of

Agriculture and Forestry

Keywords
Authors

agric@tubitak.gov.tr

Scientific Journals Home Page

Turkish Journal of Agriculture and Forestry

Growth and Stomatal Behaviour of Two Strawberry Cultivars under Long-Term Salinity Stress

Ece TURHAN[1], Atilla ERİŞ[2]

[1]Çanakkale Onsekiz Mart University, Bayramiç Vocational College, 17700, Bayramiç, Çanakkale - TURKEY

[2]Uludağ University, Faculty of Agriculture, Department of Horticulture, Görükle Campus, 16059, Bursa - TURKEY

Abstract: Sodium chloride (NaCl) treatments were conducted on strawberry plants (Fragaria x ananassa cvs. Camarosa and Chandler) grown under greenhouse conditions. Modified Hoagland solution (one-third strength) containing 0 (control), 8.5, 17.0 and 34.0 mM NaCl was applied to the plants for 6 months. High NaCl concentrations caused serious reductions in growth parameters such as fresh weight (FW) of leaves, stems and roots, leaf area and the number of leaves. Addition of salt to the growth medium caused a reduction in stomatal conductance (Gs) and transpiration rate (E) of Camarosa. Saline water up to 34 mM NaCl did not have any influence on Gs of Chandler. In addition, 34 mM NaCl treatment caused a marked increase in Gs and E of Chandler. On the other hand, leaf temperature (Tı) increased with salt treatments in both cultivars. We suggest that the reductions in stomatal conductance and transpiration rate represent adaptive mechanisms to cope with excessive salt in Camarosa. As it can relatively maintain its stomatal conductance and transpiration rate, Chandler also tolerates the salt injury at low salt concentrations. Considering the cultivars, Camarosa was characterised as more salt tolerant than Chandler under saline conditions.

Key Words: Strawberry, salt stress, plant growth, stomata Abbreviations: Sodium chloride (NaCl), fresh weight (FW), stomatal conductance (Gs), transpiration rate (E), leaf temperature (Tı).

Turk. J. Agric. For., **31**, (2007), 55-61.
Full text: pdf
Other articles published in the same issue: Turk. J. Agric. For.,vol.31,iss.1.