Proline Accumulation Pattern in Species of an Inland Saline Habitat

Éva Patricia Murakeözy, Zoltán Nagy and Zoltán Tuba*
University of Gödöllő, Department of Botany and Plant Physiology, Páter K.u.1, Gödöllő H-2103, Hungary. Fax: +36 28 410 804. E-mail: tuba@fau.gau.hu
* Author for correspondence and reprint requests
Z. Naturforsch. 54c, 718–722 (1999); received December 3, 1998/March 16, 1999
Proline, Sodium Accumulation, Cold Stress, Salinity Stress

Seasonal and diurnal fluctuations were measured in the leaf proline content of three dicot species (Limonium gmelini, Lepidium crassifolium and Camphorosma annua), natives to an inland saline area of Hungary. Proline contents were negatively correlated to the mean monthly temperature in all three species. All the investigated species accumulated proline in February and/or March, while increases in temperature were followed by a drop in proline level by the beginning of April/May. Sodium accumulation in the leaves as well as soil water content influenced the amount of proline to a smaller extent than temperature in all of the investigated species. Accumulation of proline did not show significant correlations with the accumulation of sodium in the leaves. Diurnal pattern of leaf proline content changed during the growing season with a decreasing trend at the beginning (April) and increasing trend at the end (August) of the season.