

Change of Ascorbic Acid Level after Grafting of Tomato Seedlings

Akira Wadano^{a,*}, Mitsuharu Azeta^a, Shin-ichi Itotani^a, Ai Kanda^a, Toshio Iwaki^a, Tomoaki Taira^b, Yasushi Fujii^b, Yoshifumi Nishiura^c, Haruhiko Murase^c and Nobuo Honami^c

^a Department of Applied Biochemistry

^b Department of Plant Science

^c Department of Regional Environmental Science, College of Agriculture, Osaka Prefecture University, Sakai 599-8531, Osaka, Japan.

Fax: 81-722-54-9921. E-mail: wadano@center.osakafu-u.ac.jp

* Author for correspondence and reprint requests

Z. Naturforsch. **54c**, 830-833 (1999); received December 20, 1998/February 3, 1999

Ascorbate Peroxidase, Ascorbic Acid, Glutathione, Grafting, Water Stress

Grafting is an easy way to produce a new seedling, which can tolerate against various stresses. During the acclimation after grafting, however, the seedlings still suffer a severe water stress. It is well known that water stress produces active oxygen to oxidize ascorbic acid. The concentration of ascorbic acid in the leaves was analyzed by HPLC equipped with an electrochemical detector. The column used was SP-120-5-ODS-BP (DAISO, JAPAN) and elution was performed with 0.1 M phosphate buffer, pH 3.0. After grafting the seedlings were acclimated under a 6-hr light/dark regimen. The content of ascorbic acid increased gradually during 2 days compared with control. The ascorbate peroxidase showed about constant activity, so the increase of ascorbic acid may be due to its requirement to cure the grafting.