THE EFFECT OF PREHARVEST FACTORS ON
L-ASCORBIC ACID CONTENT OF L. SATIVA, S.
OLERACEA AND A. CEPA

— research paper —

LUANA PUIA *, SIMONA OANCEA **†, IZABEL RUIZ***

*University “Lucian Blaga” of Sibiu, Faculty of Sciences, Department of
Ecology and Environmental Protection, Sibiu, Romania

**University “Lucian Blaga” of Sibiu, Faculty of Agricultural Sciences,
Food Industry and Environmental Protection, Sibiu, Romania

*** Operon S.A. Immunodiagnostics, Camino del Plano, 19, 50410 Cuarte
de Huerva, Spain

Abstract: the present paper deals with the content of one of the most important antioxidant
vitamins in fruits and vegetables - vitamin C, also known as L-ascorbic acid from active
plant tissues of lettuce (Lactuca sativa), spinach (Spinacia oleracea) and onion (Allium
cepa), in the seedling stage. It is known that content of vitamin C varies with plant species
and different environmental factors. Quantitative determination of L-ascorbic acid in the
investigated plants showed in all studied species a slightly increased content of vitamin C
when growing on natural soil without chemical fertilization compared to the nitrogen
fertilized soil. We obtained a higher content of vitamin C in case of Allium cepa, because of
better conditions of growth and development and climate conditions. The obtained results of
the present study confirm the importance of the nutrients content and antioxidant properties
(L-ascorbic acid, respectively) for plants grown in organic agriculture (ecological).

Keywords: L-ascorbic acid, Lactuca sativa, Spinacia oleracea, Allium cepa, preharvest
factors

† Corresponding author. Mailing address: University “Lucian Blaga” of Sibiu, Faculty of
Agricultural Sciences, Food Industry and Environmental Protection, Str. I. Rațiu 7-9,
550012 Sibiu, Romania. Phone: 0040/269/211338. Fax: 0040269212558. E-mail address:
simona.oancea@ulbsibiu.ro

Acta Universitatis Cibiniensis Series E: FOOD TECHNOLOGY
Vol. XIII (2009), no.1, p.13-18