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I International Conference on Research for Sustainable Development in Mountain Regions

Book of Abstracts

INSTITUTO POLITÉCNICO DE BRAGANÇA
Centro de Investigação de Montanha
Embrapa
United Nations Educational, Scientific and Cultural Organization
UNESCO Chair in Sustainable Mountain Development
University of the Highlands and Islands
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Sy06P01

Nutritional value and chemical composition of Cichorium spinosum L. under saline conditions.

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Soil salinity is an ever-growing problem that hinders vegetable cultivation in many areas within the Mediterranean basin. Cichorium spinosum is native to the Mediterranean basin and is usually found in coastal areas and plateaus. In the present study, C. spinosum plants were grown under saline conditions (1.8, 4 and 8 dS/m), in order to evaluate the effect of salinity on their nutritional value and chemical composition. From the results it was observed that high salinity levels (8 dS/m) affected nutritional value by increasing dry matter and ash content, whereas carbohydrate content decreased. Sugar composition and total sugar content was also affected, since a decrease in fructose and glucose content as well as in total carbohydrates content was observed. Increasing salinity resulted in an increase of α- and δ-tocopherol and consequently of total tocopherols. Ascorbic acid was not detected in any of the studied treatments, whereas chlorophyll a and b content increased under high salinity conditions. Fatty acids consisted mainly of linoleic, α-linolenic and palmitic acid, whereas no significant differences were observed between control and salinity treatments. PUFA/SFA and n-6/n-3 ratio was higher than 0.45 and lower than 4.0, for all the treatments respectively. Considering the great genetic diversity and the adaptation under harsh conditions that various C. spinosum ecotypes exhibit, this species could be a potential alternative crop for mountainous areas and especially in soils with salinity problems.