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Study of the nutritional profile of *Cichorium Spinosum* L. after fertilization with different nutritional solutions

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The concentration of fertilizing via nutrient solution can affect the production and quality of the nutritional value of leafy vegetables. *Cichorium spinosum* L. is a wild edible plant used as a basic ingredient in the Mediterranean diet. Its nutritional composition has already been described and correlated with the prevention of chronic diseases and disorders, making it an important complement to human nutrition [1,2]. Considering it is usually collected in the wild, its accessibility and availability is limited; therefore, market potential cannot meet the growing consumer demands for healthier foods. Thus, the aim of the present study was to evaluate the effect of fertilization with nutrient solutions that contained different ratios of nitrogen, phosphorus, and potassium on the nutritional profile of *C. spinosum* leaves. The content of crude protein (AOAC, 991.02), total fat (AOAC, 989.05), total dietary fiber (AOAC, 991.43), ash (AOAC, 935.42), and carbohydrates (by difference) [3] were evaluated. Energy was calculated according to the equation: energy (kcal per 100 g) = 4 x (g protein + g carbohydrate) + 2 x (g total dietary fiber) + 9 x (g fat). The sample fertilized with 300:100:100 ppm of N:P:K (C311) stood out for its high crude protein (22.0±0.4 g/100 g dry weight dw) and fiber content (46.4±0.9 g/100 g dry weight dw), followed by the sample fertilized with 200:200:200 ppm of N:P:K that also showed promising fat values (6.8±0.1 g/100 g of dw), carbohydrates (20.2±0.1 g/100 g of dw), and energy (301±1 kcal/100g). The control sample (without fertilization) showed the lowest levels in all the studied parameters, except for the protein content in which there were no significant differences compared to the C311 sample. With the results obtained, it was possible to verify that the concentration of macronutrients in nutrient solution (N:P:K) may directly affect the nutritional value of the plant under study, with high concentrations of phosphorus and potassium having a negative impact on the protein and fiber content. It is thus possible to select the proper nutrient solution to obtain final products with a promising nutritional profile and promote their incorporation into commercial cultivation systems and the exploration of the species in sustainable cropping.

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