



# Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



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## PCF-61

**NUTRITIONAL VALUE AND CHEMICAL COMPOSITION OF PURSLANE LEAVES IN RELATION TO HARVESTING STAGE**

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Purslane (*Portulaca oleraceae* L.) is an omnipresent weed, while it is also considered a common ingredient of the Mediterranean diet due to its high nutritional value with particular reference to omega-3 fatty acids content. In the present study, we evaluated the nutritional value and chemical composition of purslane leaves in relation to harvesting stage. Plants were harvested at three growth stages (29, 43 and 52 days after sowing (DAS)), while leaves were separated from the aerial parts of the plant. Leaves contained high amounts of macronutrients, especially at 52 DAS.  $\alpha$ -Tocopherol was the main isoform, which increased at 52 DAS, as well as the total tocopherols (values were in the ranges of 197–327  $\mu\text{g}/100$  g fresh weight (fw) and 302–481  $\mu\text{g}/100$  g fw, for  $\alpha$ -tocopherol and total tocopherols, respectively). Glucose and fructose were the main detected free sugars, while total sugars content ranged between 0.160 g and 0.330 g/100 g fw). Oxalic and total organic acids content increased at late harvesting (52 DAS; 8.6 g and 30.3 g/ 100 g fw for oxalic acid and total organic acids, respectively). Regarding the fatty acids content, leaves were abundant in  $\alpha$ -linolenic acid (35.4–54.92%), although a decreasing trend was observed with successive harvesting. Oleracein A and C were the major oleracein derivatives detected in leaves, regardless of the harvesting stage (values were in the ranges of 8.2–103.0 mg and 21.2–143 mg/100 g dried weight (dw) for oleraceins A and C, respectively), while the highest content was recorded at 29 DAS for both compounds. Hepatotoxicity assays showed no toxicity with  $\text{GI}_{50}$  values being higher than 400  $\mu\text{g}/\text{mL}$  for all the harvesting stages. In conclusion, early harvesting could increase the nutritional value of the final product through increasing the content of valuable compounds, such as omega-3 fatty acids, phenolic compounds and oleracein derivatives, while at the same time, the contents of anti-nutritional compounds such as oxalic acid are reduced.

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