

# Exploring *Cynara cardunculus* L. potential for the food industry: the antioxidant pattern

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*Cynara cardunculus* L. (cardoon) is a versatile perennial crop indigenous to the Mediterranean region that has three botanical varieties including wild cardoon (var. *sylvestris* (Lamk) Fiori), cultivated cardoon (var. *altilis* DC.), and globe artichoke (var. *scolymus* (L.) Fiori). Cardoon is mostly renowned for its flower, which is used to coagulate milk in the production of soft cheeses, with the leaves serving as the primary by-product. The bioactive compound-rich leaves are employed in traditional medicine and have interesting antioxidant and antimicrobial properties<sup>1</sup>. Cardoon leaves may therefore be used in the food sector to prolong the shelf life of foods by preventing lipid oxidation and microbiological growth.

This study aims to evaluate the antioxidant capacity, through DPPH free radical scavenging and the  $\beta$ -carotene bleaching assays, and total phenolic compounds content (TPC) and total flavonoids content (TFC) of cultivated cardoon and globe artichoke leaves extracts, both methanolic and ethanolic.

Cardoon extracts, both ethanolic (2.1 mg/mL) and methanolic (0.8 mg/mL), presented lower EC<sub>50</sub> than artichoke extracts (EC<sub>50</sub><sub>EtOH</sub>= 3.9 mg/mL; EC<sub>50</sub><sub>MeOH</sub>= 1.6 mg/mL), which means greater antioxidant capacity. For the  $\beta$ -carotene assay, cardoon extract (AAC<sub>EtOH</sub>:448.06; AAC<sub>MeOH</sub>:279.67) presented a higher antioxidant capacity coefficient (AAC) than the artichoke extract (AAC<sub>EtOH</sub>:90.98; AAC<sub>MeOH</sub>:114.97). Accordingly, cardoon extracts (EtOH: 81.98 mg GAE/g; MeOH: 112.84 mg GAE/g) also had a higher content of TPC than artichoke (EtOH: 49.14 mg GAE/g; MeOH: 29.79 mg GAE/g). The same can also be observed for TFC, where cardoon (EtOH: 145.47 mg ECE/g; MeOH: 129.27 mg ECE/g) presented greater total flavonoids content than artichoke (EtOH: 81.33 mg ECE/g; MeOH: 21.24 mg ECE/g). These results confirm that cardoon leaves are a natural source of antioxidant compounds that can be exploited by the food industry.

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## References:

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