

# NUTRITIONAL POTENTIAL OF CARDOON LEAVES: A SUSTAINABLE FOOD INGREDIENT

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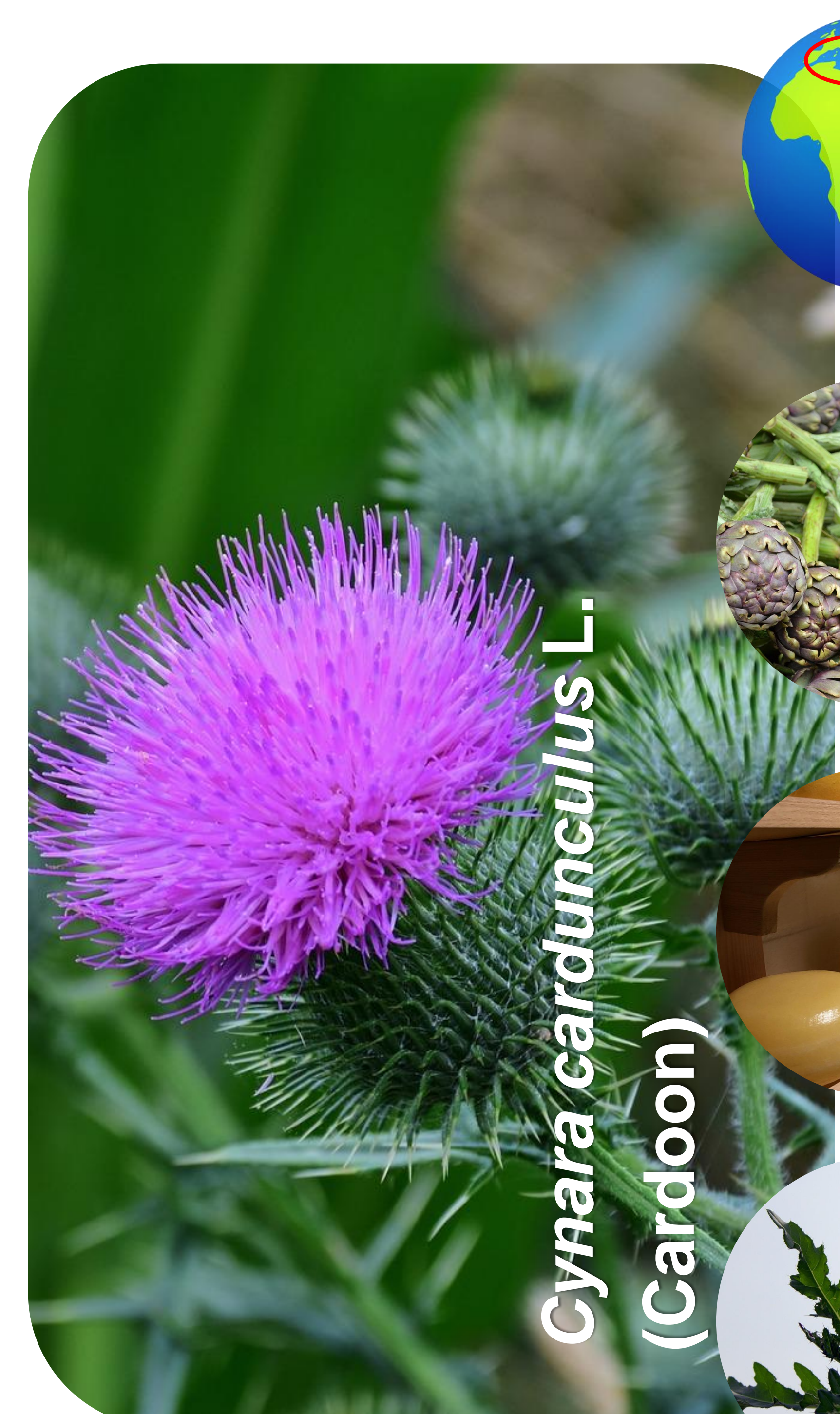
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## INTRODUCTION



Perennial plant from the Asteraceae family  
Native to the Mediterranean region.  
Can grow naturally in adverse climate conditions.

Three botanical varieties:  
The globe artichoke (var. *scolymus* (L.) Fiori)  
The cultivated cardoon (var. *altilis* DC.)  
The wild cardoon (var. *sylvestris* (Lamk) Fiori)

The flowers are used as vegetal rennet in cheese making.  
The stems are traditionally used in salads and soup dishes.

The leaves are the main by-product generated.  
Excellent source of bioactive compounds.  
Therapeutic properties.

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## AIM

This study aims to evaluate the nutritional value of fresh cardoon leaves harvested during spring 2024 and explore their potential as a food ingredient.

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## METHODOLOGY

- Moisture (gravimetric method)
- Ash (incineration at 525 °C)
- Total fat (acid hydrolysis with extraction)
- Fatty acid profile (gas chromatography)
- Total protein (Kjeldahl method)
- Total fiber (enzymatic-gravimetric method)
- Total sugars (Munson and Walker method)
- Mineral profile (Inductively Coupled Plasma Optical Emission Spectrometer)

## RESULTS

| Nutritional Declaration |              |      |
|-------------------------|--------------|------|
|                         | Per 100g     | %RI* |
| Energy (KJ/Kcal)        | 211KJ/51Kcal | 2.6  |
| Fat (g)                 | 0.2          | 0.3  |
| Of which                |              |      |
| Saturates (g)           | 0.1          | 0.3  |
| Monounsaturates (g)     | 0.1          |      |
| Polyunsaturates (g)     | 0.1          |      |
| Carbohydrate (g)        | 3.2          | 1.2  |
| Of which                |              |      |
| Sugars (g)              | 0.9          | 1.0  |
| Fiber (g)               | 7.9          | –    |
| Protein (g)             | 4.2          | 8.4  |
| Salt (g)                | 0.1          | 1.5  |
| *RI – Reference Intake  |              |      |

Moisture – 81.3 g/ 100g

Ash – 2.4g/ 100g

Total Fatty Acids – 0.19 g / 100g  
 Trans fatty acids – 0.00 g/ 100g  
 Linoleic acid – 0.06 g/ 100g  
 Lignoceric acid – 0.04 g/ 100g  
 Oleic acid – 0.04 g/ 100g  
 Pentadecenoic acid – 0.01 g/ 100 g

### Nutrient reference values (NRVs) %

Magnesium – 16%  
 Iron – 30%  
 Potassium – 34%  
 Calcium – 41%  
 Manganese – 71%

## CONCLUSION

Cardoon leaves are rich in fiber, protein, and minerals, while low in fat and sugars, making them nutritionally valuable. Their composition supports use in low-fat diets and as a source of plant-based protein. High fiber content may benefit digestive health. As an agro-industrial by-product, their inclusion in food helps reduce waste and supports the circular economy. Their use can promote sustainable and healthy eating.

