

# Biological Activities of hydroethanolic Extracts from Sumac (*Rhus* spp.)

Elizandra Ardohain<sup>1,2,3</sup>, Bárbara Menezes<sup>2,3,4</sup>, Cristina Caleja<sup>2,3,\*</sup>, Lillian Barros<sup>2,3</sup>, Isabel C.F.R. Ferreira<sup>2,3</sup>, Ricardo Calhelha<sup>2,3</sup>, Miguel Pietro<sup>1</sup>, Ângela Fernandes<sup>2,3</sup>

<sup>1</sup>Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

<sup>2</sup>Laboratório para a Sustentabilidade e Tecnologia em Regiões de Montanha, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

<sup>3</sup>Grupo de Nutrição e Bromatologia, Departamento de Química Analítica e Alimentar, Faculdade de Ciência e Tecnologia de Alimentos, Universidade de Vigo, C. Ourense, E-32004 Ourense, Espanha;

<sup>4</sup>Universidad de Valladolid (UVa), Departamento de Ingeniería Agrícola y Forestal, Escuela Técnica Superior de Ingenierías Agrarias, Palencia, Espanha

\*ccaleja@ipb.pt



## INTRODUCTION

*Rhus* spp., commonly known as sumac, is a plant belonging to the Anacardiaceae family. It is traditionally used as a spice and flavoring agent, and is widely used as a seasoning in Iran and Arab countries [1, 2]. Due to its valuable benefits, sumac has been used in traditional medicine for the treatment of several diseases. It is rich in a variety of phytochemicals, including flavonoids, tannins, polyphenolic compounds, organic acids, among others [3].

## MATERIALS AND METHODS

**Samples:** The samples of the *Rhus* spp. plant were collected in the region of the Portuguese city of Foz Côa, located in the Douro sub-region, which belongs to the North region and the district of Guarda.

**Methodology:** The antioxidant activity was evaluated by DPPH radical-scavenging activity, reducing power, and inhibition of lipid peroxidation (TBARS). Our studies revealed that all parts of the plant have good antioxidant capacity.

## OBJECTIVE

This study aimed to characterize the bioactive properties of the hydroethanolic extracts from the fruit, stem, and leaves of the *Rhus* spp. plant.

## REFERENCES

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## RESULTS

The leaf stood out in all methods, being the most effective part of the plant. In the DPPH assay, the leaf had the best result, with 1.63 µg/mL, while the stem presented 4.80 µg/mL and the fruit 6.04 µg/mL. In the TBARS assay, the leaf also demonstrated the best antioxidant capacity, with 2.02 µg/mL, compared to the fruit (4.28 µg/mL) and the stem (8.61 µg/mL). In the reducing power assay, the leaf once again stood out in relation to the other parts of the plant, with 5.47 µg/mL, followed by the fruit with 5.78 µg/mL. The stem presented the lowest antioxidant capacity, with 14.21 µg/mL. The results obtained showed better activity than the positive control, trolox, in all methods.

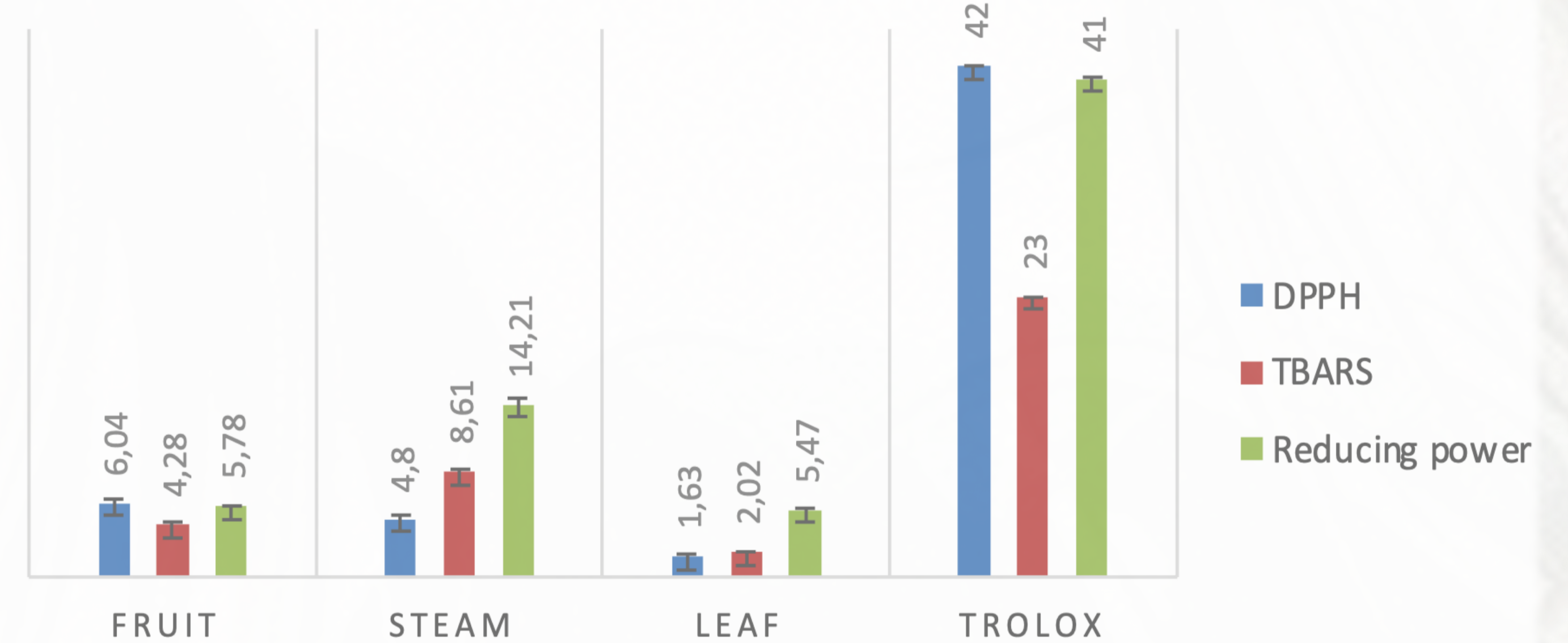


Figure 1. Results of the antioxidant activity of fruit measured by the DPPH, reducing power, and TBARS assays (EC<sub>50</sub> values µg/mL).

## CONCLUSION

The results indicate that the plant possesses a high antioxidant capacity, with this activity being more pronounced in the leaves, surpassing the fruits and stems. These findings hold significance in determine which parts of the plant may offer the most advantages in applications requiring antioxidant properties, such as in the food, pharmaceutical or cosmetic industries.

This work aims to explore natural matrices to safely incorporate them into food, supporting food quality and safety and developing high-quality products (Goals 3 and 12)

