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Antioxidant Activity of Essential Oils: Focus on Portuguese Companies

Isabela dos Anjos[1], Caio da Silva[2], Bruno Medronho[1,3], Luis Alves[4]

[1] MED – Mediterranean Institute for Agriculture, Environment and Development & CHANGE – Global Change and Sustainability Institute, Faculdade de Ciências e Tecnologia, Universidade do Algarve, Campus de Gambelas, 8005-139, Faro, Portugal
[2] Biochemistry undergraduate student Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal
[3] Surface and Colloid Engineering, FSCN Research Centre, Mid Sweden University, SE-851 70 Sundsvall, Sweden
[4] Universidade de Coimbra, CERES, Department of Chemical Engineering, Pólo II – R. Silvio Lima, 3030-790 Coimbra, Portugal

INTRODUCTION & AIM

Essential oils are derived from aromatic plants and can be extracted from various parts, including flowers, leaves, bark, fruit, seeds, and other important parts of the plant. Historically, these oils have been utilized for their therapeutic properties and continue to be an integral part of folk medicine across diverse cultures, owing to their multifaceted and remarkable medicinal benefits, which encompass antioxidant, anti-inflammatory, analgesic, anti-cancer, liver-protective, and neuroprotective properties, among others. As part of the "Albread" project, supported by the Promove 2023 competition and titled "Aromatic plants from Alentejo, probiotics, and acorn flour in the development of functional bread", this study aimed to investigate the antioxidant potential of essential oils marketed by companies in the Alentejo and Algarve regions of Portugal.

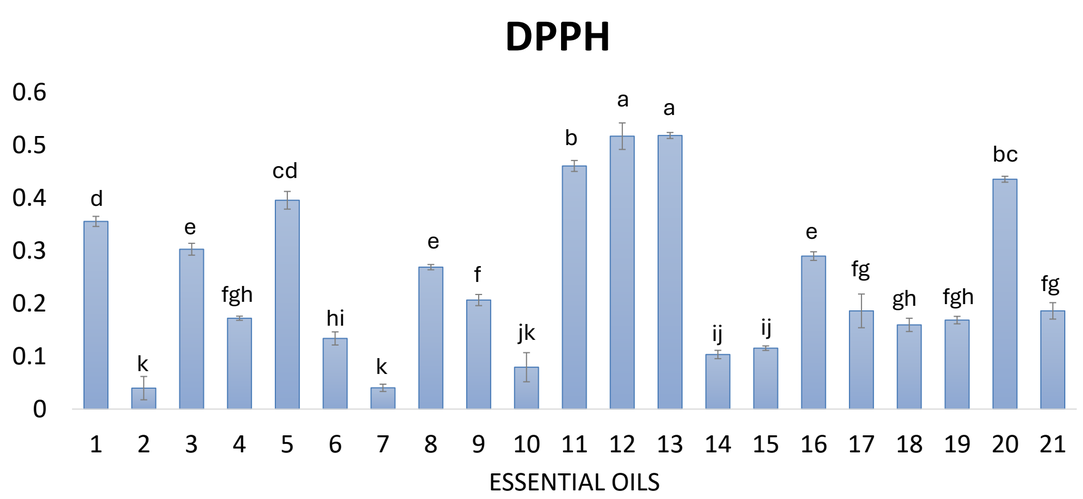
METHOD

21 essential oils from Portuguese companies

Antioxidant activity:
DPPH
ABTS

Statistical analyses:
ANOVA
Duncan's Multiple Range Test

RESULTS



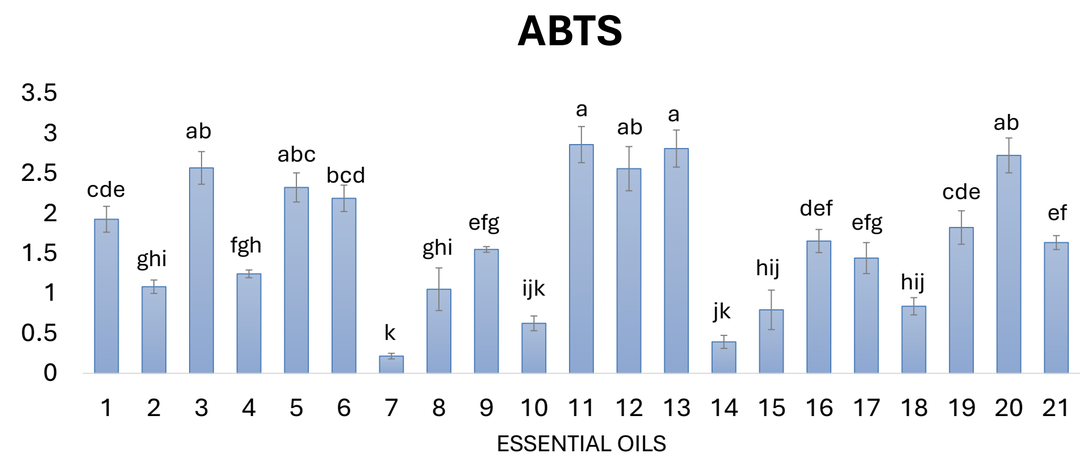


Figure 1. Antioxidant activity of essential oils (EO) as measured by DPPH and ABTS assays. The x-axis represents 21 different essential oils, while the y-axis shows the mean ± standard error (SE) of antioxidant activity in mg Trolox Equivalent (TE) per gram of essential oil (g EO).

CONCLUSION

The results indicated a successful differentiation of the antioxidant potential of the essential oils across both methodologies.

The DPPH method revealed antioxidant activity ranging from 0.039 to 0.518 mgTE/gEO, while the ABTS method demonstrated a range of 0.21 to 3.08 mgTE/gEO.

It can be concluded that the 21 essential oils assessed from Portuguese companies exhibited variability in their antioxidant potential but maintained comparable patterns between the DPPH and ABTS methods.

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