

THE EFFECT OF SUCCESSIVE ULTRASOUND-ASSISTED EXTRACTION ON PHENOLIC CONTENT OF CAROB POD, MASTIC LEAVES AND MYRTLE LEAVES AND FRUIT

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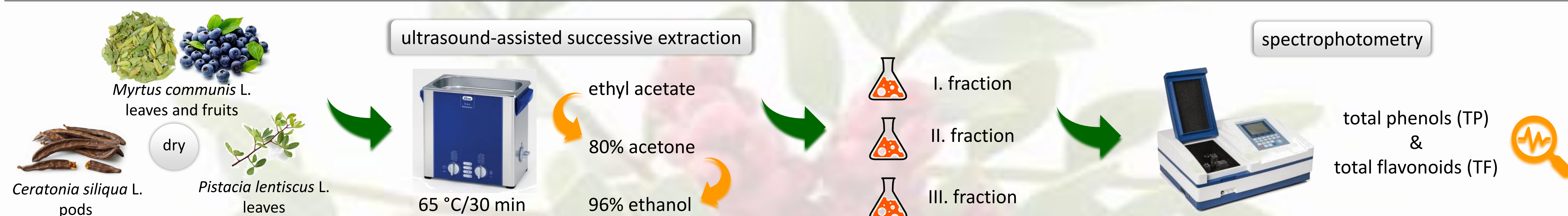
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INTRODUCTION

Recently, there has been a significant increase in consumer awareness of the importance of natural, plant-based ingredients with beneficial effects on human health. Among these, polyphenols are highly regarded for their antioxidant and anti-inflammatory effects. Mediterranean medicinal plants are a rich but still underutilized source of valuable phenols. To take advantage of their benefits, the first and most important step is their isolation. Nowadays, novel, "green" and energy-saving techniques such as ultrasound-assisted extraction have taken the lead over traditional reflux and heat-assisted methods.

Therefore, the **aim** of this study was to evaluate the effects of successive ultrasound-assisted extraction with three different solvents, ethyl acetate, 80% acetone, and ethanol, on the content of total phenols and total flavonoids in carob pods, mastic leaves, and myrtle leaves and fruits.

MATERIAL AND METHODS



RESULTS AND DISCUSSION

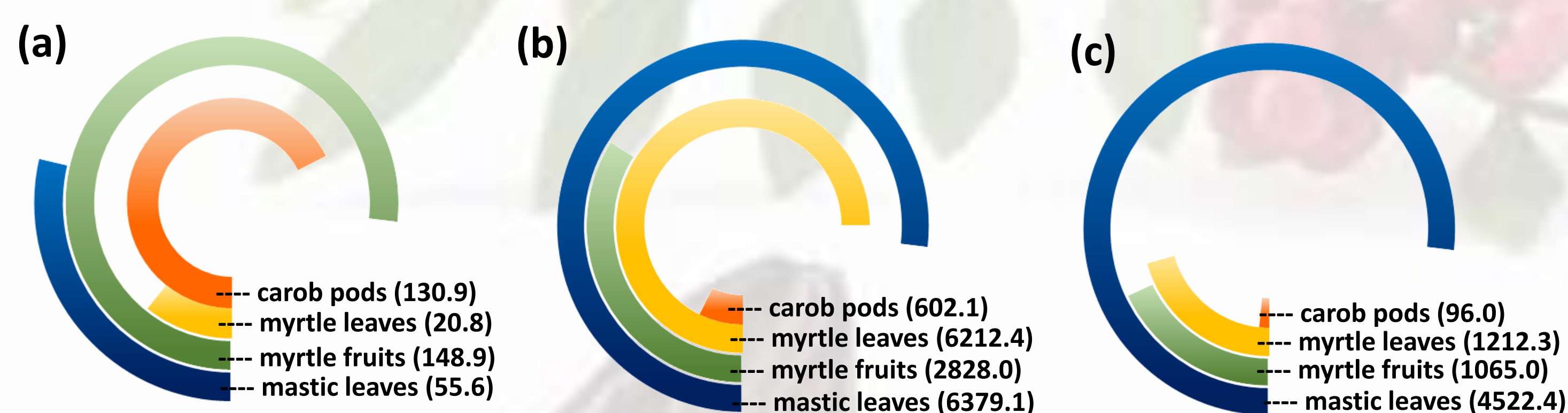


Figure 1. Content of total phenols (mg/100 g d.m.) in fractions: (a) ethyl acetate, (b) 80% acetone and (c) 96% ethanol

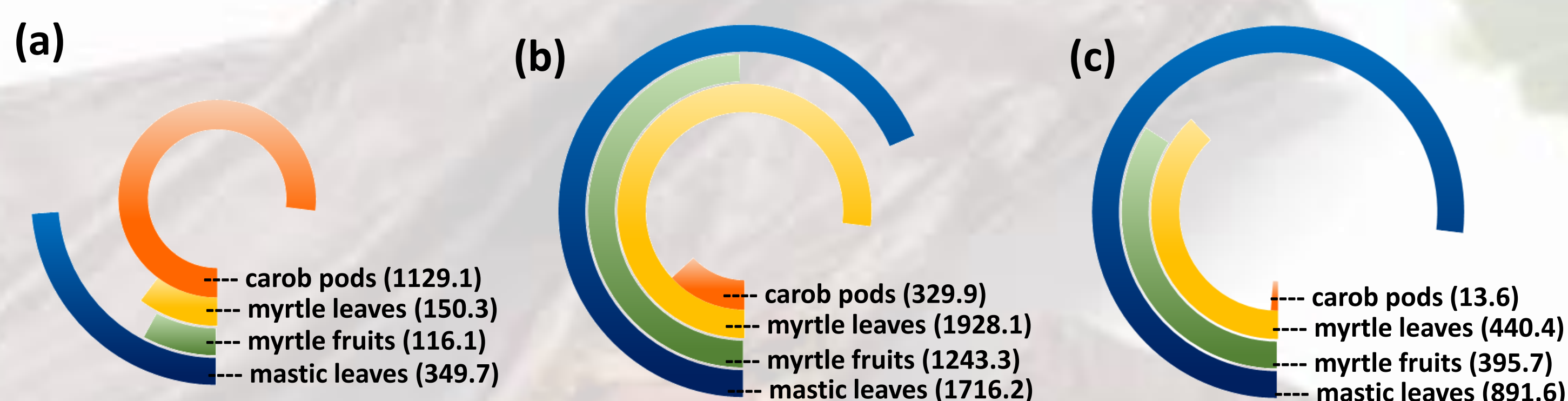


Figure 2. Content of total flavonoids (mg/100 g d.m.) in fractions: (a) ethyl acetate, (b) 80% acetone and (c) 96% ethanol

The results showed that all plant species were rich sources of flavonoids and phenolics, with the highest content found in mastic leaves, followed by myrtle leaves and fruits, while carob pods had the lowest content of TP and TF. The highest extraction yield of TP and TF was found in all plant species in the second fraction, i.e., with 80% acetone, except in carob pods, where the first fraction, ethyl acetate, showed the highest yield of TF.

CONCLUSION

The results of this study indicate the suitability of the acetone fraction for the isolation of total phenols and flavonoids from selected Mediterranean plant species and confirm that they are a rich source of polyphenols and therefore suitable for further use in value-added foods and nutraceuticals.

Key words: carob, mastic, myrtle, solvent, phenols



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