Exploring the antioxidant potential of green kiwifruit: Nutritional and phytochemical characterization of the peel and pomace

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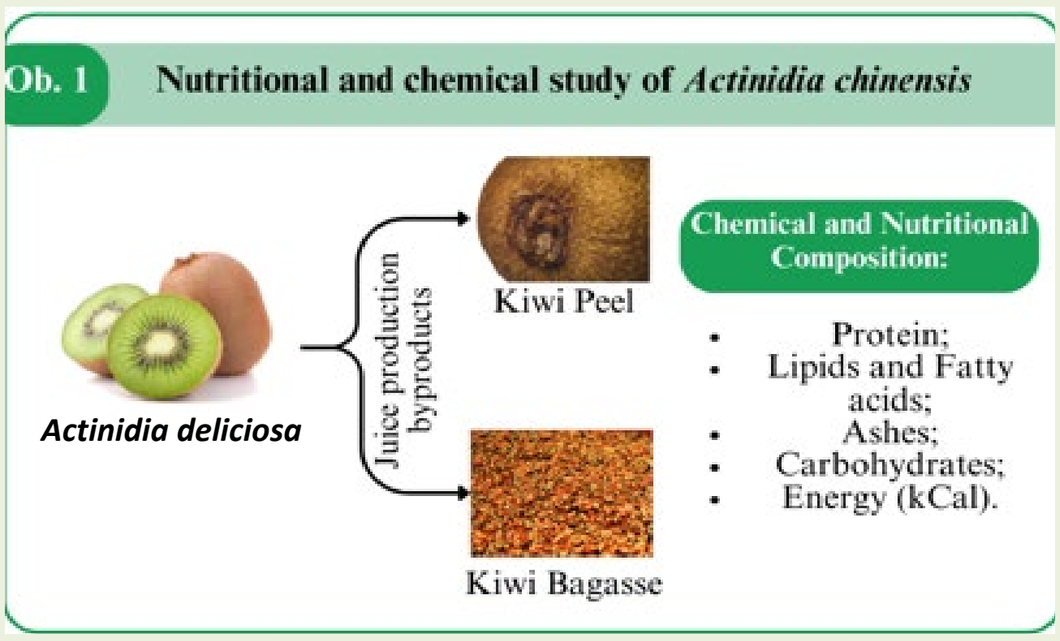
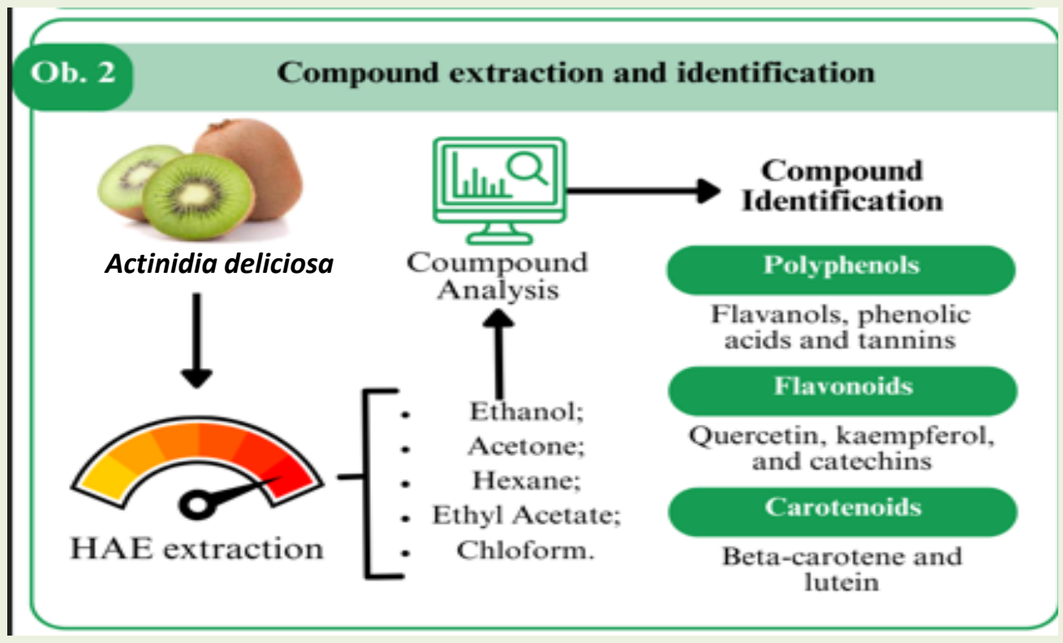
INTRODUCTION

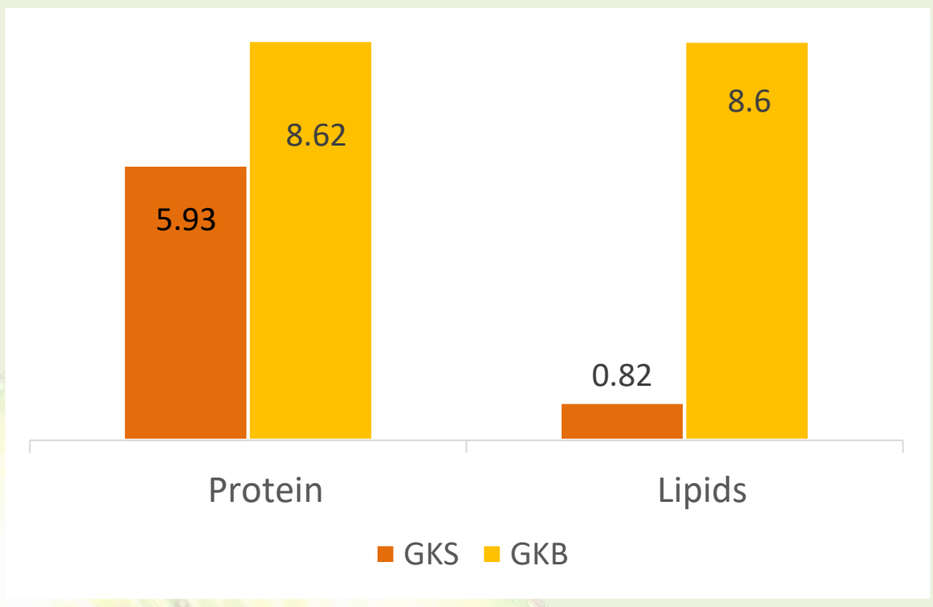
Green kiwifruit (***Actinidia deliciosa***) is appreciated not only for its flavor and nutritional value, but also for its richness in compounds with health-promoting properties [1]. As a result of its industrial processing, waste and/or by-products such as the peel (**GKS**) and the bagasse (**GKB**) are generated, which are often discarded despite containing components of nutritional and functional interest. It has now been shown that both **GKS** and **GKB** are relevant sources of dietary fiber, polyphenols, flavonoids, and vitamin C [2]. These compounds are associated with antioxidant and anti-inflammatory effects and could contribute to the prevention of chronic diseases [3]. Revaluing these by-products not only represents an opportunity in terms of health but also responds to a more sustainable production model aligned with the principles of the circular economy.This study studies the potential of **GKS** and **GKB** from green kiwifruit (*Actinidia deliciosa*) as functional ingredients for incorporation into value-added foods. The nutritional analysis included the determination of proteins, lipids, and minerals according to **AOAC standardized methods**. In addition, the **chemical profile** was characterized by thermal extraction followed by metabolomic analysis with **HPLC-ESI-QqQ-MS/MS**.

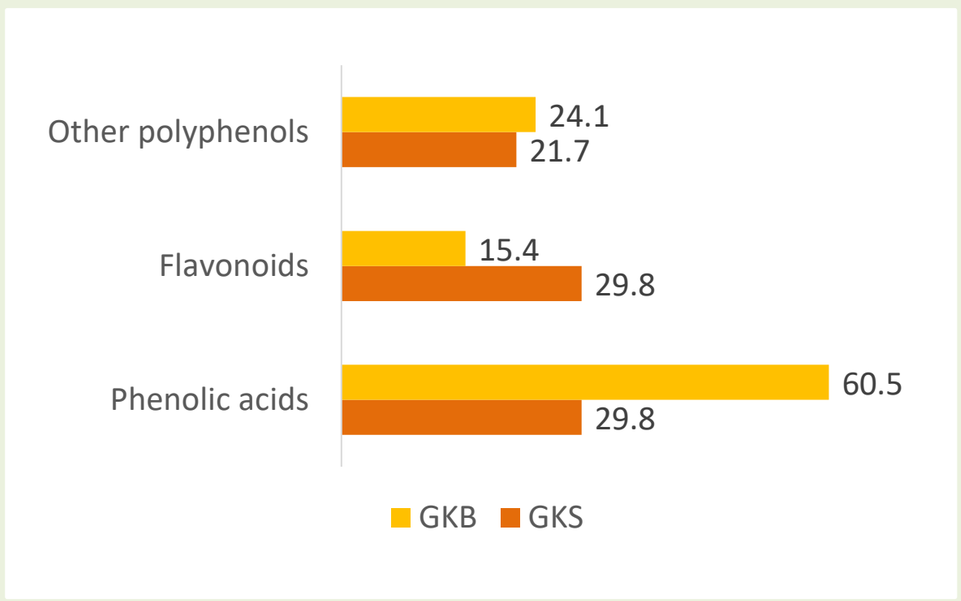
OBJECTIVES AND METHODOLOGY





RESULTS





CONCLUSIONS

The study reports that **GKS** and **GKB** constitute a source of nutrients, **GKB** highlighting **8.62 g/100 dw of protein** and **8.60 g/100 dw of lipids** of which **42%** corresponds to **polyunsaturated fatty acids**. In contrast, **GKS** stands out for its high content of minerals **K+, Ca+, P+, Mg+**. The metabolomic study reports **GKS** **48.5% of phenolic acids**, **29.8% of flavonoids** and **21.7% of other polyphenols**, while **GKB** contains **60.5% of phenolic acids**, **15.4% of flavonoids** and **24.1% of other polyphenols**. These findings reinforce the theory that **GKS** and **GKB** constitute a natural source of compounds with antioxidant properties, which may have food, **pharmaceutical** and **cosmetic** applications, providing benefits for **human health**.

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