



PLANT PEELS AS RICH SOURCE FOR OBTAINING PHENOLIC COMPOUNDS

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ABSTRACT

A Flavonoid group of polyphenols such as quercetin has been observed to exhibit many beneficial consequences, including those resulting from anti-inflammatory, antioxidant activities and etc. Antioxidant properties were investigated using DPPH radical scavenging activities and met with suitable results, further digging into its anticarcinogenic and anti-inflammatory activities, the outcome met our satisfactory standards.

INTRODUCTION

Flavanols being one of the most ubiquitous pigment occurring abundantly in onions, results in more antioxidant properties due to presence of hydroxyl group.

Antioxidant properties are of great importance within food industry regarding packaging of food as it inhibits degenerative diseases and by increasing the products life by impeding oxidation reactions.

Current study is also highlighting the case of zero waste as our organic solvent is condensed back. The used peels obtained from flask can be further used as a component in natural fertilizer, hence providing nutrition to plants.

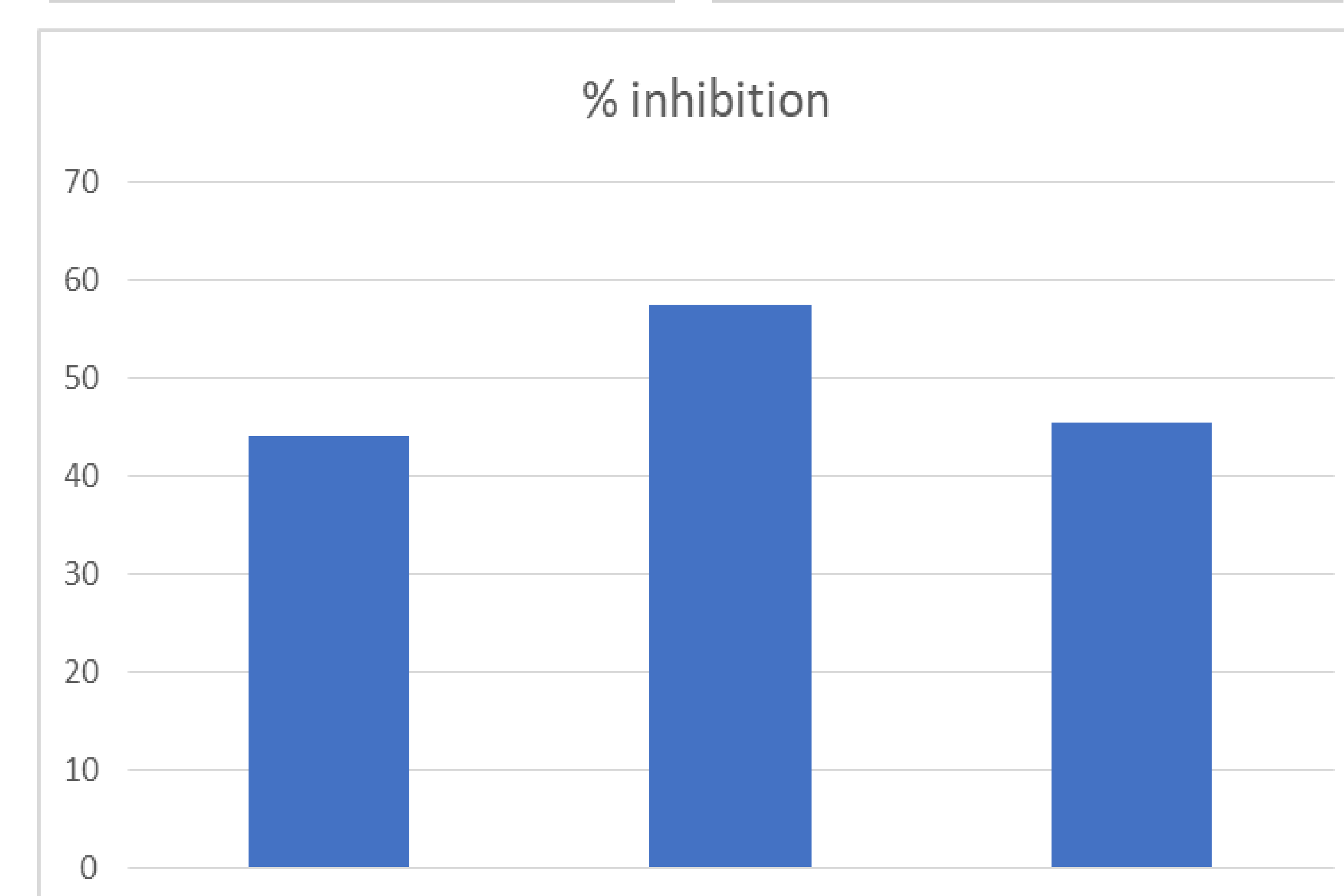
METHODOLOGY

1. Dry skin was peeled off from our natural source and shredded into pieces
2. The shredded piece was then weighed about 13g and fit into an Iodometric flask filled with 125ml ethyl acetate
3. The Iodometric flask was then kept for 30 minutes on reflux (hot plate) and a condensing column was connected to it and the solution started to boil at 77.1°
4. After 30 minutes, the solvent is then filtered into a tunic round bottom flask and further set up the solution in a simple distillation setup
5. The solution is left to boil for 2 hours, a brownish layer is obtained on the walls of the flask which is then obtained as our compound quercetin

RESULT & DISCUSSION

UV/Visible spectroscopic and Thin Layer Chromatographic testing in comparison with standard proves the successful extraction of target compound. Anti-oxidant activity and inflammatory activity of the plant extract were performed and was met with positive results.

Test performed	Results (plant extract)
Anti-oxidant activity	Yes (ranging from 10-60%)
Anti-inflammatory	Yes (ranging from 20-50%)



REFERENCES

1. Kleemann, R. (2011). Anti-inflammatory, anti-proliferative and anti-atherosclerotic effects of quercetin in human in vitro and in vivo models. *atherosclerosis*, 44-52.
2. Yukio Murakami¹, A. K. (2015). Radical-scavenging and Anti-inflammatory Activity of Quercetin.

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