

Antioxidant Activity of Daily Foodstuffs

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Introduction

Phenolic compounds, as the secondary metabolites of plants with various bioactive functions, play important roles in human and animal health. Although no certain recommended daily polyphenol intake is given, high polyphenol intake is better because one study observed that overall mortality was reduced by 30% in participants who had rich-polyphenol diets (>650mg/day) in comparison to the participants who had low-polyphenol intakes (<500mg/day).³

Project Aim

The project aims to measure total phenolic content, flavonoid content and ABTS radical scavenging antioxidant activity of 35 daily consumed foodstuffs, giving public an estimation of daily polyphenol intake.

Methods

Total phenolic content was determined by the Folin-Ciocalteu reagent colorimetric method.² The results were expressed mg gallic acid equivalent (GAE) /g or L of sample.

Total flavonoid content was quantified by the aluminum trichloride colorimetric method.² The results were expressed mg catechin equivalent (CE) /g or L of sample.

Measuring ABTS⁺ radical scavenging is a method to evaluate antioxidant activity based on scavenging of free radicals by antioxidants. The method employed the green coloured ABTS free radicals as electron acceptors from antioxidant compounds in extracts.¹ The results were expressed mg GAE/g or L of sample.



Conclusion

Diets that do not include red wine or coffee may find it difficult to reach 650mg/day. The daily polyphenol intake can be as low as 106.9mg/day when eating the recommended 300 grams of apple daily. In order to increase polyphenol intake for the sake of health, people who have low polyphenol intake are encouraged to have more fruits. For example, 1824g apples contain 650mg polyphenol. However, it is too much for one-day consumption. Therefore, 20 fold diluted PhytolinTM drink can assist in boosting this intake. Drinking **500mL** of 20 fold diluted PhytolinTM can help to reach 650mg/day polyphenol intake.



Outcomes

Antioxidants in Fresh Fruits

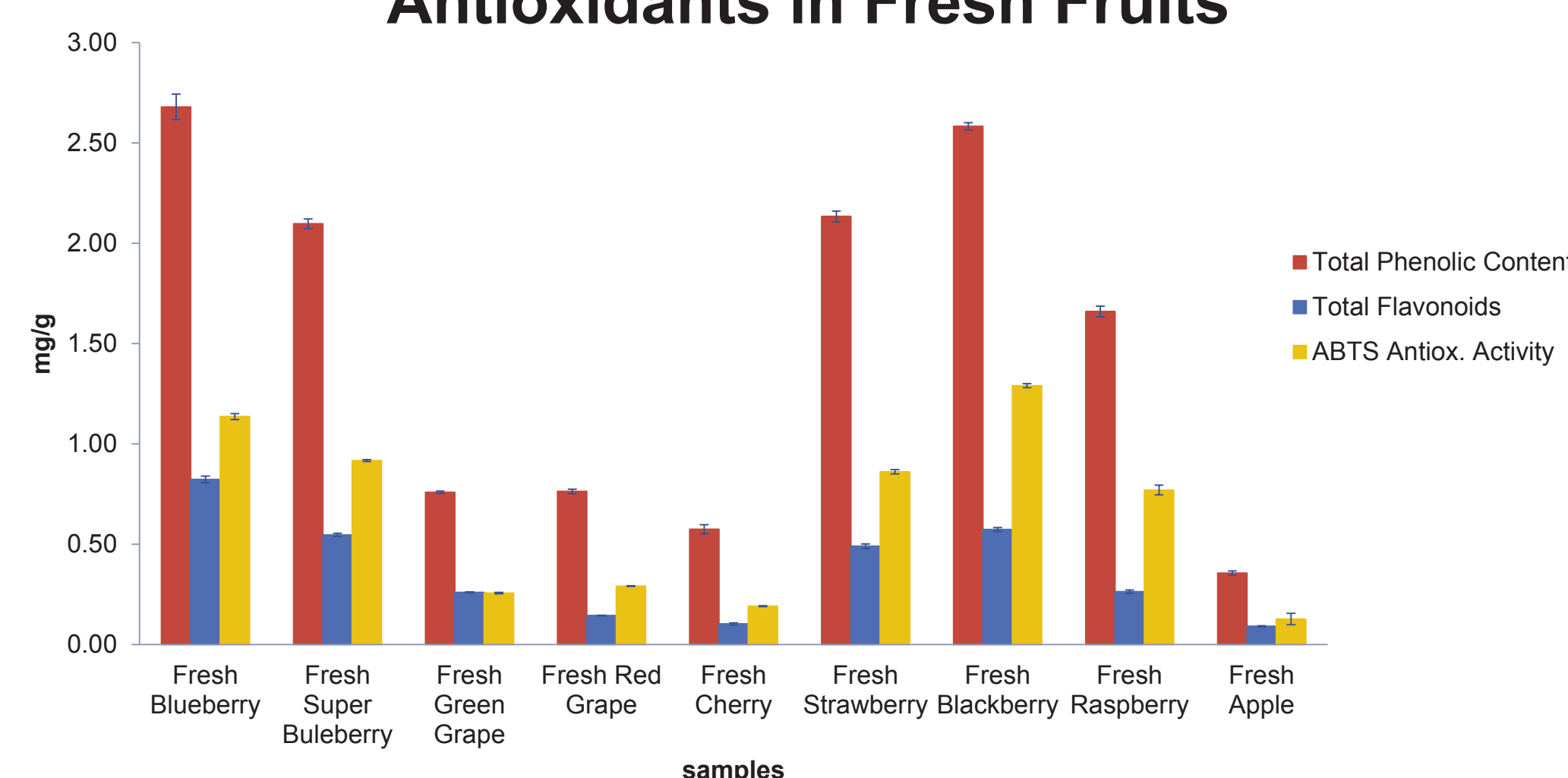


Figure 1. Total phenolic content, flavonoids and ABTS radical scavenging activity of 9 fresh fruits. The results were expressed as Mean \pm SD, n = 3.

Antioxidants in Tea Bags

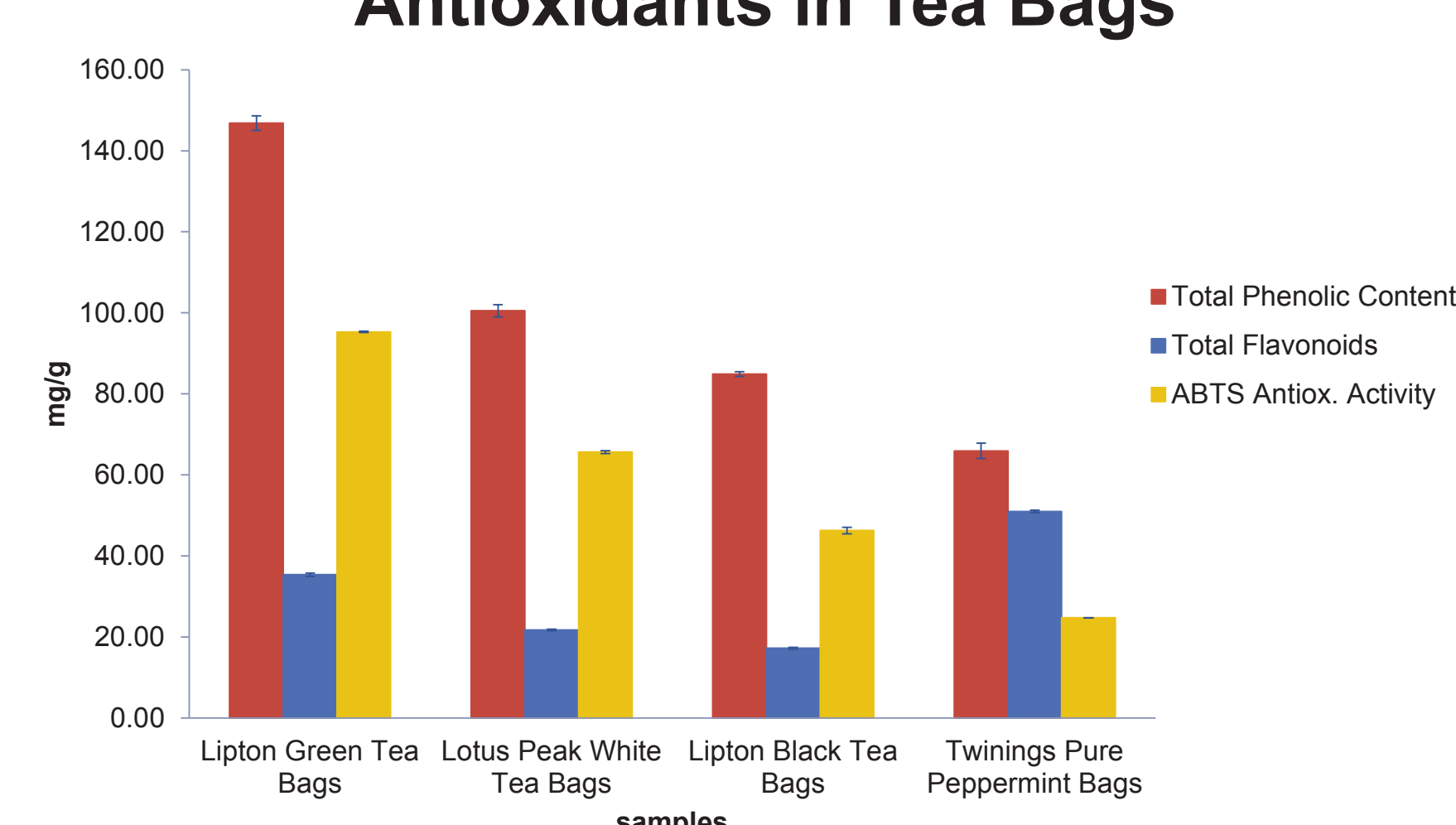


Figure 2. Total phenolic content, flavonoids and ABTS radical scavenging activity of 4 kinds of tea bags. Error bar in the figure indicated standard deviation of sample value from triplicate determinations (n = 3).

Antioxidants in Coffee Granules

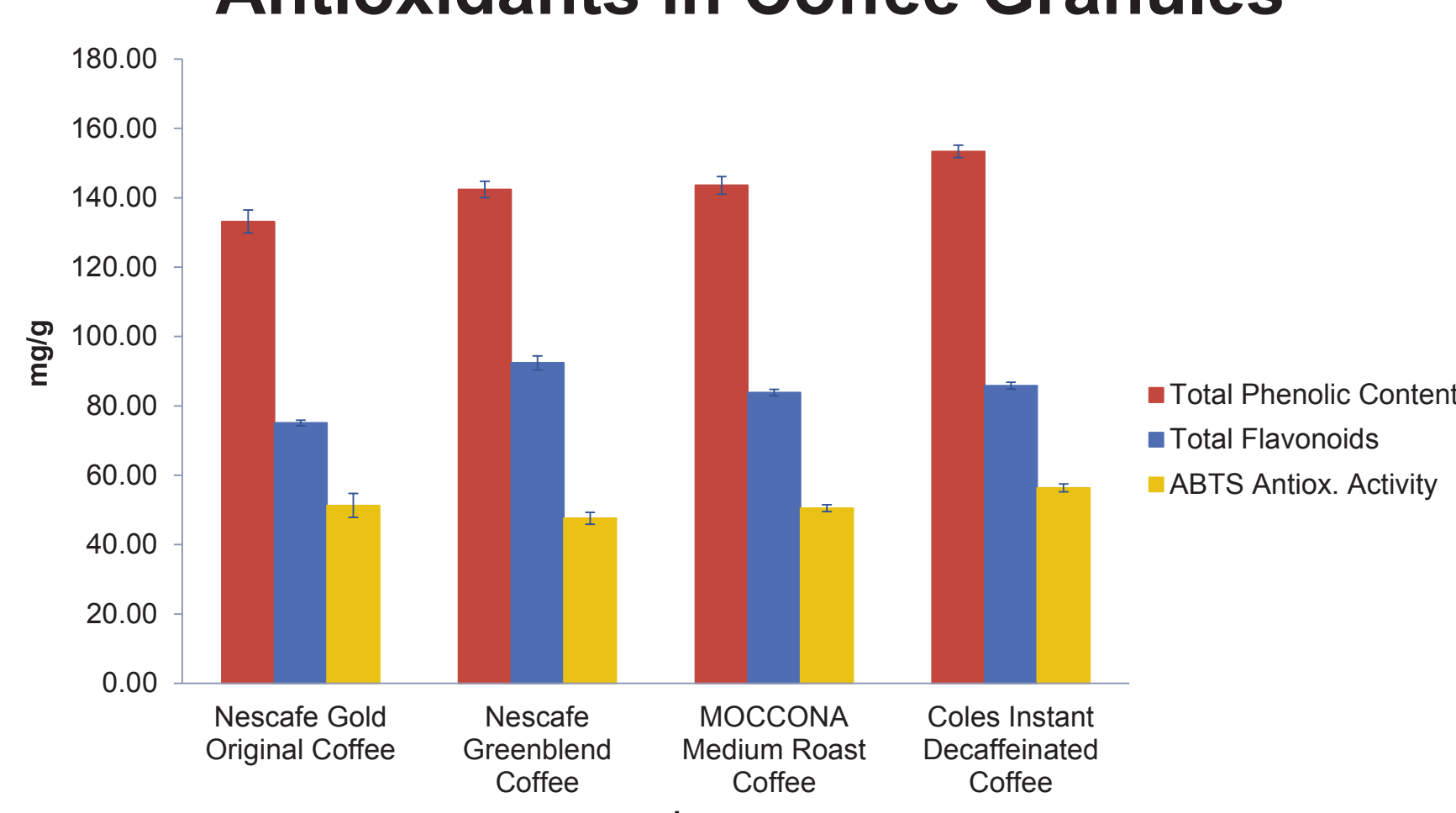


Figure 3. Total phenolic content, flavonoids and ABTS radical scavenging activity of 4 types of coffee granules. The results were expressed as Mean \pm SD, n = 3.

Antioxidants in Wines

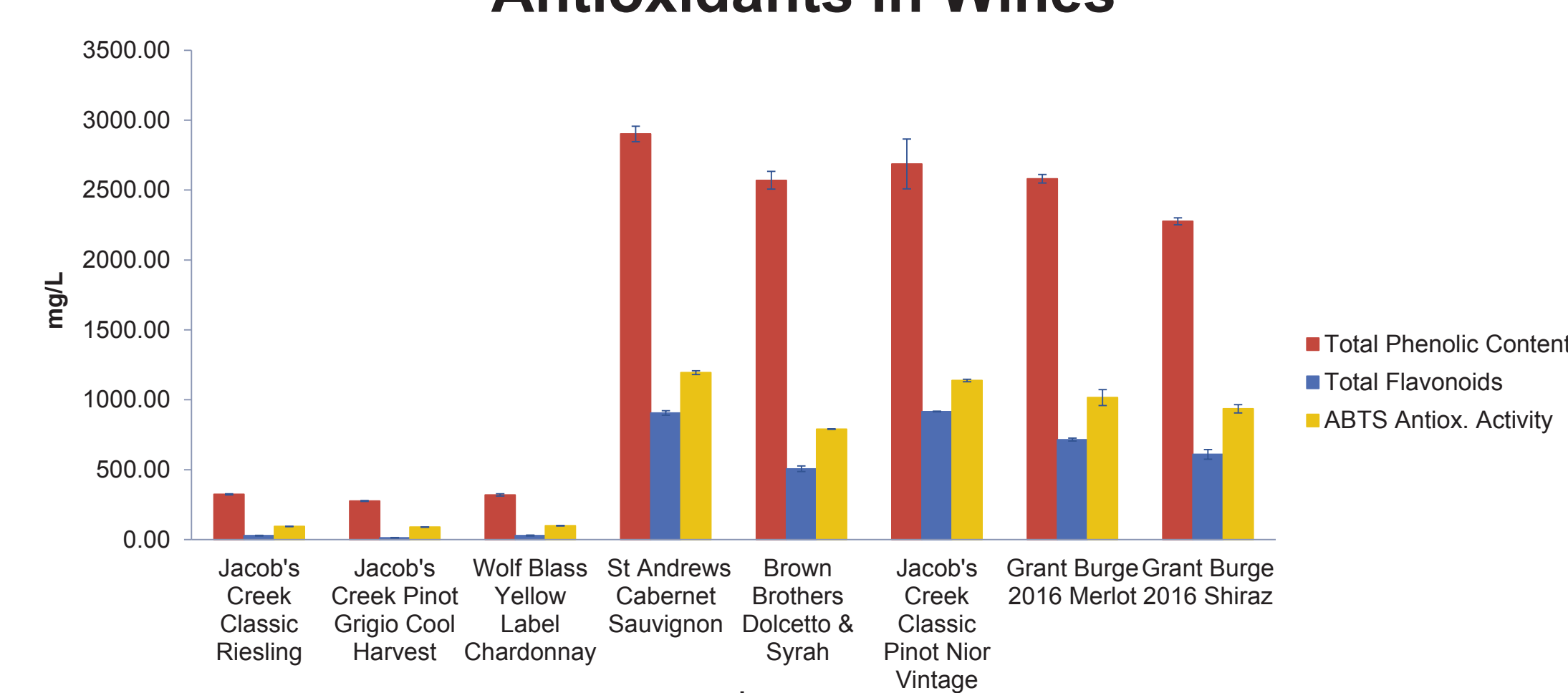


Figure 4. Total phenolic content, flavonoids and ABTS radical scavenging activity of 8 types of wine. Error bar indicated standard deviation of sample values obtained from triplicate determinations (n = 3).

Antioxidants in Juice, Tea and PhytolinTM Drinks

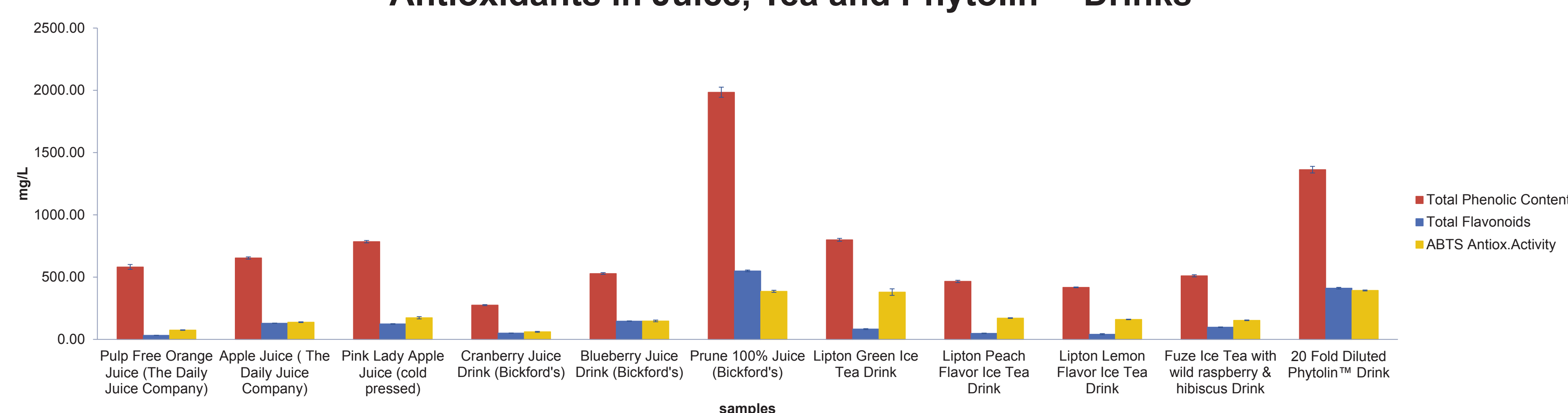


Figure 5. Total phenolic content, flavonoids and ABTS radical scavenging activity of 10 types of tea and juice drinks. 20 fold diluted PhytolinTM drink was for comparison. Sample values were reported as mean \pm SD, n = 3.

Interpretation: among all daily consumed foodstuffs, red wine and coffee granules contain the relatively high total phenolic content, flavonoids and ABTS radical scavenging antioxidant activity.

PhytolinTM

- PhytolinTM is a natural plant extract from *Saccharum officinarum* (SugarCane).
- PhytolinTM is rich in numerous active compounds and minerals already known to be good for you.
- PhytolinTM will reduce the GI level of your foods or beverages, while significantly enriching their antioxidant content.



Tasting Opportunity

We have PhytolinTM products for you to taste, please visit **Stand 22 at AIFST** for more information.

References

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