

**Phytochemicals and antioxidant properties of different parts of *Camellia sinensis* leaves from Sabah Tea Plantation in Sabah, Malaysia**  
**Abstract**

This study was conducted to determine the total phenolic (TPC) and total flavonoid content (TFC) as well as the antioxidant activity of 50% ethanolic extracts from different parts of *Camellia sinensis* (shoot, young and matured leaves). Comparison was also made between black (fermented) and green (unfermented) tea. For green tea, the results showed that the shoot contained significantly higher total phenolic content, followed by the young and matured leaves ( $p < 0.05$ ). The same trend was also observed for antioxidant activity as assessed using FRAP (ferric reducing/antioxidant power), DPPH (2,2-diphenyl-1-picrylhydrazyl) free radical scavenging assay and ABTS (2,2'-azinobis(3-ethylbenzthiazoline)-6-sulphonic) radical scavenging assays. As for black tea, the highest total phenolic and total flavonoid content were observed in the shoot, followed by the young and old leaves. The same trend of antioxidant activity with green tea was also observed in black tea extracts. In addition, black tea compost showed comparable high total phenolic and flavonoid content as well as antioxidant activities as assessed using different antioxidant assays. High antioxidant activity of tea leaves grown in Sabah might be contributed by phenolic phytochemicals that presence in the extracts

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