

Flavanols and Flavonols Content of *Camellia sinensis* with Different Maturity Stage Planted at Cameron Highland and Sabah Tea Plantation in Malaysia

ABSTRACT

This study was done to determine and compare the nutritional composition of ash, crude protein, crude fat and fiber, as well as the content of flavanols (EGCG, EGC, ECG and EC) and flavonols (quercetin and kaempferol) in tea planted in Cameron Highland (CH) and Sabah tea Plantation (ST) with different maturity stages (young, matured and old leaves). Young tea leaves in both CH and ST had the highest content of crude fat, protein and fiber and the values decreased as the leaves aged. Interestingly, crude protein content in all maturity stages of CH and ST were higher than in commercial tea (13.81%) with the range of 15.41 - 16.35% and 14.20 - 15.32% respectively. Meanwhile, ash content in ST (8.59 - 13.49%) was higher compared to CH (5.06 - 5.14%) and values decreased from young to old leaves. CH leaves had the highest moisture content (8.18 - 8.55%) followed by ST (5.23 - 9.20%), and commercial tea (5.7%). The order of flavanol in young leaves of CH and ST, and commercial tea leaves was ECG > EGCG > EGC > EC but for mature and old leaves the order was ECG > EGC > EGCG > EC with the only difference was in EGC and EGCG. The content of flavonol quercetin and kaempferol in CH were 3.51 mg/g and 4.05 mg/g respectively. Meanwhile, in ST leaves the values were 1.79 mg/g and 3.35 mg/g respectively, and both CH and ST showed that the highest content of flavonol was observed in young leaves and decreased as leaves aged.