

Effect of oven and microwave drying on polyphenols content and antioxidant capacity of herbal tea from *strobilanthes crispus* leaves

ABSTRACT

Objective: This study aimed to evaluate the effect of oven and microwave drying on total phenolic content (TPC), total flavonoid content (TFC), and antioxidant capacity of unfermented and fermented tea developed from *Strobilanthes crispus* leaves. **Methods:** TPC and TFC were estimated using a spectrophotometric method, while antioxidant capacity was determined using ferric reducing antioxidant power assay and 2,2-diphenyl-1-picrylhydrazyl radical scavenging assay. *Camellia sinensis* (tea plant), that is, used for the production of all varieties of commercial tea and fresh *S. crispus* leaves were served as controls in this study. **Results:** The highest antioxidant activity and TPC were observed in *S. crispus* tea developed from microwave-dried leaves, while the highest TFC was observed in oven-dried tea. Unfermented *S. crispus* tea showed significantly higher values ($p < 0.05$) for antioxidant activity, TPC, and TFC as compared to fermented *S. crispus* tea. A strong and moderate correlation was observed between antioxidant activity and TPC as well as TFC values. **Conclusion:** The present work clearly showed that *S. crispus* tea developed from microwave-dried leaves able to preserve the polyphenols and hence contribute to excellent antioxidant capacity. Incorporation of unfermented *S. crispus* tea in the diet can be a good source of natural antioxidant.

Keyword: Green tea; Black tea; Total phenolic; Total flavonoid; 2, 2-diphenyl-1-picrylhydrazyl; Ferric reducing antioxidant power assay