

## Phenolic Content and Antioxidant Activity of Pasteurized Mulberry Leaf Tea Mixed Soymilk Powder and Its Correlation with Different Antioxidant Assay

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### Abstract:

Milk is a functional food. Several milk products have produced especially pasteurized milk to value added and present new choice of milk products for consumer. This study proposed to apply mulberry leaf tea and soymilk powder into pasteurized milk to improve its phenolic content and antioxidant activity. The total phenolic content (TPC) and antioxidant activity by DPPH, FRAP and ABTS assays were determined. The results indicated that pasteurized milk adding with 6% of mulberry leaf tea and 6% of soymilk powder had strongest antioxidant activity and highest TPC whereas the lowest antioxidant activity and TPC were found in pasteurized milk adding with 2% of mulberry leaf tea and 2% of soymilk powder. The highest TPC was 117.99 mg GAE/100 mL and highest antioxidant equivalents were 2.08, 1.06, 0.72 mg VE equivalent/mL and 0.73, 1.72, 0.49 mg VC equivalent/mL using DPPH, FRAP and ABTS assays, respectively. For the correlation between TPC and antioxidant assays, it was found that TPC showed significant correlated with DPPH, FRAP and ABTS ( $p < 0.01$ ). Correlation between individual antioxidant assay also showed significant correlated ( $p < 0.01$ ). The results indicated that increasing amount of mulberry leaf tea and soymilk can enhance the total phenolic content and antioxidant activity. While the antioxidant assay uses showed high correlation can be explained that all assay efficiency scavenged radicals and can used for determine the antioxidant activity in milk product. However, other bioactive content or phenolic derivative are interest and will be investigated for further study.

**Keywords:** Antioxidant, phenolic compound, mulberry leaf, soymilk powder, pasteurized milk