Journal of Cambodian Health
Volume. 4, No. 2, 2026, v4206
https://doi.org/10.70243/jch2026.4206

OPEN ACCESS

Phytochemical Content and Antioxidant Activity of *Aegle Marmelos*

Abstract

Sueng Chang[1], Phinhphinh Khim[1], Sophalin Norn[1], Visessakseth So[2], Lina Ly[3], Sophearom Chhea[1*]

[1] Faculty of Pharmacy, University of Puthisastra, Phnom Penh, Cambodia
[2] Academic Affairs, University of Puthisastra, Phnom Penh, Cambodia
[3] Division of Pharmacognosy, Faculty of Pharmacy, University of Puthisastra, Phnom Penh, Cambodia

Presented at the 5th Pharmacy Research Conference 2025, 4–5 October 2025

Article history
Published: 24 July 2026

Keywords
Aegle Marmelos,
Phytochemical Content,
Antioxidant,
DPPH assay

Editor
Michael Renfrew

Academic editors
Sela Kong
Sornpisey Khut

Abstract

Introduction: The bael plant (*Aegle marmelos*) is an aromatic fruit, native to Southeast Asia, known to be a good source of antioxidants and bioactive compounds. It has been used in traditional medicine for generations to treat issues like long-term diarrhea, dysentery, stomach ulcers, and even constipation. This study focused on determining the phytochemical contents and antioxidant activity of the *Aegle marmelos* fruit.

Methods: *A. marmelos*'s fresh fruit was dried in the oven and ground into powder. The powder was extracted with ethanol, and ethanol extract of *A. marmelos*'s powder was then utilized to determine the total phenolic content (TPC) using the Folin-Ciocalteu method. Total flavonoid content (TFC) using quercetin and antioxidant activity were screened using 2,2-diphenyl-1-picrylhydrazyl (DPPH).

Results: The analysis showed significant levels of phytochemical compounds with TPC (209.89 ± 0.06 mg gallic acid equivalents/g of CE), TFC (17.48 ± 0.04 mg quercetin equivalents/g of CE and antioxidant activity (4.75 ± 1.79 QE/g of CE).

Conclusion: This study showed that *A. marmelos* contains useful phytochemicals with antioxidant activity. These findings suggest it could be a good natural ingredient for making healthier food, traditional medicine, and wellness products in the future.

Ethics statement: This study involved laboratory testing of plant materials only and did not include human or animal subjects, with the following biosafety guidelines.

Conflicts of interest: The authors have no conflicts of interest.

Acknowledgment: The authors are thankful to the Faculty of Pharmacy, University of Puthisastra for providing laboratory facilities and funds to conduct this research project.

***Corresponding author**: Sophearom Chhea, csophearom@puthisastra.edu.kh