

Formulation and Development of an Herbal Syrup from *Mangifera Indica* Leaves for the Management of Gastritis

S.H. Weerasundara¹, D.H.A. Mendis¹, P.M. Kumarapperuma¹, S.L.A. Gunawardana^{1*}

*Department of Pharmacy and Pharmaceutical Sciences, Faculty of Health Sciences,
CINEC Campus, Malabe, Sri Lanka
Shehara.gunawardana@cinec.edu

Gastric ulceration is a common condition affecting up to 10% of the global population. Though conventional treatments have shown positive results, they have also shown drawbacks such as recurrence and side effects. Consequently, there is growing interest in using medicinal herbs as natural remedies. The dried leaves were reflux extracted to obtain the aqueous extract and freeze-dried extract was incorporated in different strengths as 0.8 g, 1.6 g and 3.2 g into the syrup base and prepared three formulations as S1, S2, and S3 respectively. The *In-vitro* acid neutralizing capacity of the formulated syrup formulations was determined using Fordtran's titration method, and the duration of consistent neutralization on artificial gastric acid was evaluated using the modified Vatie's artificial stomach. Gaviscon syrup was used as the positive control, while distilled water was used as the negative control. Finally, stability and physico-chemical properties were evaluated of the final herbal syrup formulations. The S1 syrup formulation showed the highest acid neutralizing capacity of 13.28 ± 0.05 mmol while 89.57 ± 0.03 mmol and 2.63 ± 0.04 mmol for the positive control and negative control respectively. S1 formulation was consistently neutralized artificial gastric acid for 157.66 ± 1.15 mins. while 382.66 ± 0.58 mins and 82.33 ± 0.58 mins for the positive control and the negative control. According to this study, the herbal syrup formulation that includes *M. indica* L. leaf extract has the ability to neutralize gastric acid, making it a safer option for treating ulcers. Further research is recommended to carry out preclinical and clinical investigations, clarify molecular mechanisms, and apply for regulatory approval in order to optimize the procedure.

Keywords: *Mangifera Indica*, Herbal Syrup, Acid-Neutralizing Capacity, Gastric Ulceration