

## A Preliminary Study Conducted on a Traditional Formulation used for the Treatment of Dengue

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Currently, around the globe, there are no effective drugs for the treatment of acute dengue infection. Even though a vaccine was licensed recently, it was found to have limited efficacy. Scientists are currently seeking for a novel treatment for dengue. Bamboo Swarasa is a Sri Lankan traditional medicinal preparation made from shoots of yellow and green common bamboo (*Bambusa vulgaris*) extracts together with Palmyra sugar. This preparation is currently given to patients with dengue fever. Initially, we assessed the phenolic, flavonoid and antioxidant content of this preparation by Total Phenolic Content (TPC), Total Flavonoid Content (TFC), 1,1-diphenyl-2-picrylhydrazyl assay (DPPH). We also analysed the anti-inflammatory activity by the human red blood cell membrane stabilization (HRBC), and the egg albumin assays. Finally, the cytotoxicity of this preparation was assessed by the MTT assay. When 75mg/ml of sample preparation was compared to Gallic acid (GA) the total phenolic content was found to be 5mg/g GA equivalent. The total flavonoid content of 75mg/ml sample was 0.02mg/g Quercetin equivalent. For the DPPH assay, the highest percentage radical scavenging value was reported to be 91.79%, at the maximum concentration (75 mg/ml) tested and the IC<sub>50</sub> was found as <3.75mg/ml. The anti-inflammatory activity of the preparation was found to be 46.09% inhibition of protein denaturation at 75mg/ml sample while Ibuprofen showed a similar inhibition: 51.30%. The HRBC assay depicted 52.85% inhibition of red cell lysis at 75mg/ml, while Ibuprofen showed 97.20% inhibition. Finally, a moderate cytotoxic effect was noted in Vero cells by the MTT assay where a concentration of 10µg/ml depicted a ~35% cell growth inhibition at 24h. This commercial preparation of Bamboo Swarasa demonstrated excellent antioxidant activity and moderate anti-inflammatory activity at a concentration of 75mg/ml. Viral infections are usually accompanied by oxidative stress, which plays an important role in their pathogenesis, and antioxidants are able to reduce the reactive oxygen species level in infected cells. Thus, this preparation could be an effective medicine for viral diseases such as dengue. This work provides only preliminary scientific evidence, and further research will be conducted to determine its antiviral activity.

**Keywords:** *Bambusa vulgaris*, dengue fever treatment, traditional plant extract