**Title:- Evaluation of Antioxidant and Anthelmintic Properties of Caesalpinia sappan L. Leaves**

# Abstract:

**Objectives:** Caesalpinia sappan L. is a popular medicinal plant known to both the Ayurveda and Chinese traditional medicines since ancient time. The aim of this research was to study the qualitative phytochemistry and to determine the antioxidant and anthelmintic activities of C. sappan leaves. Phytochemical analysis indicated the presence of various plant bioactive metabolites in C. sappan leaves. Different solvent extracts of the crude drug were tested for their in vitro antioxidant potential using 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay and ferric ion-reducing antioxidant power (FRAP) assay. Total phenolic content (TPC) and total flavonoids content (TFC) of the extracts were determined by spectrophotometric method. Methanol extract and ethyl acetate extract of the leaves were evaluated for anthelmintic activity against earthworms (Eisenia fetida). Results of this study revealed that C. sappan leaves methanolic extract has significant antioxidant potential as compared with standard, vitamin C. Methanol extract also exhibited potent anthelmintic activity with paralysis time (19.13±0.340 min) and death time (54.21±0.533 min). These activities are attributed to the complex chemical nature of C. sappan leaves. The result of present study revealed that C. sappan leaves can serve as a good natural source of potent antioxidants and anthelminthiasis medicines. As per our extent of information, C. sappan leaves anthelmintic activity is reported for the first time in this paper. Further works are required for identification of phytochemicals and studying in vivo pharmacological activities of C. sappan leaves.

**Keywords:** Caesapinia sappan, antioxidant, oxidative stress, DPPH, FRAP, anthelmintic