ABSTRACT

Herbal medicine is the oldest form of healthcare known to mankind and most cultures have long folk medicine histories that include the use of plants. Nephrotoxicity is one of the most common kidney problems and occurs when the body is exposed to a drug or toxin that causes damage to the kidneys.

This dissertation studies about the nephroprotective nature of two herbs, *Melia Azadirachta* (MA) and *Borrassus Fiabellifer* (BF) through GC-MS, invivoto and invivo studies. This work investigates phytochemical constituents present in different extracts of the above two herbs. It examines the nephroprotective effect of extracts of MA and BF against APAP and H$_2$O$_2$ induced nephrotoxicity. This study evaluates the biochemical parameters such as urea, uric acid and creatinine, antioxidants like SOD, CAT, GPx, GSH and TBARS, hematological parameters such as MCH, MCHC, Gran, PLC, MCV and PCV and histopathology of kidney tissue. Male *albino* wistar rats of the same age group and weight are used for the study. Results were analyzed using Shapiro-Wilk normality test and one way analysis of variance (ANOVA) was used for comparison between groups followed by post-hoc Tukey test.

Plant extract of *Melia Azadirachta* has observed to offer good protection against the deleterious effects of acetaminophen and H$_2$O$_2$ indicating that it is a promising renal protectant than the *Borrassus fiabellifer*. 