**THERAPEUTIC EVALUATION OF MEDICINAL PLANTS AS ADAPTOGEN FROM CUCURBITACEAE FAMILY**


## Abstract

Traditionally, therapeutic food plants have been used to regulate human wellness since ancient times. The therapeutic effectiveness of medicinal food plants belonging to the Cucurbitaceae family in treating various metabolic illnesses caused by stress and their adaptogenic properties are extensively recorded in ancient writings such as Ayurveda. The plants of the Cucurbitaceae family not only play the important part in traditional medicine but also impact the culinary culture worldwide. The proliferation of herbal medicines as alternative therapies is steadily growing. Therefore, it is crucial to conduct evaluation and validation with appropriate scientific intervention in order to guarantee the quality, safety, and effectiveness of the product. The present work was designed to evaluate marker profiling through Liquid Chromatography- quadrupole time-of-flight-Mass Spectroscopy (LC-QToF-MS) assay and standardization by High Performance Thin Layer Chromatography (HPTLC) and Reverse Phase – High Performance Liquid Chromatography (RP-HPLC) assay of selected fruit extract and evaluation of therapeutic activity of some food plants of Cucurbitaceae family as adaptogen. Furthermore, *in-vitro* antioxidant, α-amylase, α-glucosidase, carbonic anhydrase and pancreatic lipase enzyme inhibition study were performed. To evaluate the adaptogenic activity of the most potent plant extract of Cucurbitaceae family, *in-vivo* models assessing several biomarkers were employed. The study was performed to address the therapeutic activity of Cucurbitaceae food plant as adaptogen. This study may be helpful for the scientific community to establish the role of quality evaluated plant extract as adaptogen.