

An executive summary of the final report of work done on the Minor Research Project of **Dr. Shreelalitha Suvarna J**, entitled “**Nutritional Evaluation and Determination of Phytochemical Activity of members of Cucurbitaceae – A Comparative Study**”, sanctioned by the UGC, vide sanction letter No. **MRP(S)-0501/13-14/KAMA002/UGC-SWRO dated 28-Mar-14**.

The study was undertaken to investigate the nutritional composition of seeds of members belonging to *Cucurbitaceae* family. Several solvents were used for the extraction of phytochemicals. Quantification of certain phytochemicals was performed. Different parts of the vegetable were analysed for the presence of some anti-nutritional compounds. The moisture content of the seed kernels ranges from 3.5 -5.3 %. The seed kernel samples showed high moisture content with *Cucurbitamoschata* having the highest moisture content (5.256 %). The rapid spoilage of these cucurbits when stored under ordinary conditions can be attributed to the high moisture content. The samples had good or appreciable amount of ash and could be recommended as effective sources of mineral nutrients. The range for ash content in the seed kernel lied between 3% - 6.1%. Ash gourd had the highest amount of ash content (6.1%) while *Trichosanthes cucumerina* (Snake gourd) had the lowest content (3%). The highest protein content was observed in the seeds of *Momordica charantia* (21.015%). *Trichosanthes cucumerina* had 46.06% that was the highest lipid content among the other seed kernels under study. The lipid content range lied between 33.10% - 46.06%. These results show that the samples are good sources of oil. The fiber content of the samples ranged from 0.6 – 5.3%. *Benincasa hispida* had the highest amount of fiber (5.3%).

The preliminary phytoprofilng of the seed extracts showed the presence and absence of certain phytochemicals in the extracts. The presence of phenolics, tannins, flavonoids and saponins could make the plant useful for treating different ailments and a potential source of providing useful drugs for human use. The level of tannin and andphytic acid content was found to be 31.18 and 55.8mg/100g respectively. The phytic acid content of pumpkin seed was found to be 60.0mg/g.

The result of the anti-nutritional analysis (mg/100g) revealed the values for phytates 0.618 ± 0.100 , Tannins 0.20mg/g and Oxalates 0.60mg/g. The values obtained will make the detected

nutrient in the sample available for full utilization by the body for both its metabolic and physiological activities. The level of tannins in the sample was very low and so could limit the absorption of the vital nutrients i.e. iron and protein.

Anti-nutritive agents discovered are phytate, oxalate and tannins that are toxic and interfere with digestion and absorption, but all are below the toxic levels therefore the sample has low anti-nutritional factors and it could serve as potential source in food formulation.