5. PLAN OF WORK

a. Literature survey and preparation of proposal

b. Selection of dye candidates and procurement of dyes

c. Development and optimization of UHPLC-HR-MS/MS methods for the estimation of selected food dyes
   I. Selection of mass range in TOF analyzer
   II. Selection of initial chromatographic separation conditions
   III. Nature and selection of stationary phase (Column)
   IV. Nature of mobile phase (buffers and organic solvents)
   V. Selection of mass resolution (FWHM)

d. Photodegradation studies on selected food dyes
   I. Model standard solutions
   II. Real samples (commercial beverages)

e. Separation, identification, and characterization the degradation species of food dyes that are formed in commercial food beverages by UHPLC-MS/MS (non-target screening)

f. Validation of developed methods as per Food and Agriculture Organization (FAO) guidelines
   I. Linearity and Range
   II. Accuracy
   III. Precision
   IV. Sensitivity
   V. Specificity

g. Evaluation of mutagenicity potential of the degradation species by Ames mutagenicity assay
   I. Bacterial strains and culture conditions
   II. Selection of dose levels
   III. Selection of strain specific positive controls
   IV. Data evaluation and statistical analysis

h. Reporting, documentation and publication