CHAPTER 3  PLAN OF WORK

3. PLAN OF WORK

This dissertation work was carried out in the following systematic scheme.

Pharmacognostic study:

1. Collection and authentication of plant specimen.
2. Macroscopic and microscopic studies.
3. Physicochemical analysis.
4. Extraction of leaves, stem and flower of the plant.
5. Preliminary phytochemical screening of extracts.

Phytochemical study:

2. Isolation of pure compounds from extract.
   - Separation of individual components by column chromatography.
   - Re-fractionation of mixtures by recolumn/PTLC.
   - UV/VIS Spectrophotometer.
   - FTIR
   - HNMR, C$^{13}$NMR
   - GCMS, LCMS
   - CHNO
4. Quantitative estimation of isolated purified compounds from extract showing prominent pharmacological activity and standardization of Herbal preparation for marker compound by HPTLC.

Pharmacological investigation:

Anti-asthmatic screening of plant extracts:

1. Acute toxicity study
2. Anti-asthmatic activity
   - Studies on smooth muscle preparation of guinea pig ileum (In-vitro)
   - Effect on Histamine aerosol induced bronchoconstriction in Guinea pig
3. Anti-cataleptic activity
- Effect on Clonidine-Induced Catalepsy.
- Effect on Haloperidol-Induced Catalepsy.

4. Analgesic activity
   - Hot Plate Test.
   - Acetic acid-Induced Writhing Test.

5. Anti-inflammatory activity
   - Carrageen Paw Induced Edema.

Drug delivery system:

1. Development of In-vitro and In-vivo HPLC method.

In this study special attention has been given for Pharmacognostic study, screening of extracts of leaves, stem and flowers of *C. splendens* for asthmatic activity and isolation and identification of phytocconstituents using spectroscopic techniques like U.V., FTIR, NMR and Mass spectroscopy.