SUMMARY OF THE THESIS

The work to be presented in the Thesis with the title 'CHEMICAL ANALYSIS OF MEDICINAL PLANTS' has been described under the following different sections:

SECTION - I:

PROXIMATE ANALYSIS OF SOME MEDICINAL PLANTS

Medicine is an ancient art and plants have been used by man since prehistoric days for relieving suffering and curing disease. The history of medicinal plants and their uses can be traced to the remote past. The three important treaties, viz. Riveda (2000 B.C.), Atharvavada (2000-100 B.C.) and Ayurveda (1000-600 B.C.) record several medicinal plants and their uses. Medicinal plants are also mentioned in Babylonian Science of Drugs (2000-600 B.C.). In China (about 2000 B.C.) Emperor Shan Nang investigated properties of medicinal plants and discovered drug like Ephedra, Cinchona, etc. The Papyrus Eberis of Egypt, a sort of formulary published about 1500 B.C. records use of several herbs. 'The Charak Samhita' published between 1000 B.C. to A.D. 100, is one of the valuable Indian records on medicinal plants and their uses.
The Chemical analysis provides useful data as the approximate distribution of moisture, fat, ash, proteins, carbohydrates, alkaloids and fibre in the medicinal plants.

Eight well known medicinal plants which are useful in diabetes mellitus are selected for the present work and they are: Cassia Sophora Linn (Senna sophera), Eugenia Jambolana Lam. OR Syzygium Cumini (Linn) Skeels Syn. (Black plum OR Indian blackberry), Alpinia Galanga Willd. (Greater galangal OR Java galangal), Momordica Charantia Linn (Bitter gourd), Tephrosia Villosa Pers. Syn. (Purple Tephrosia), Madhuca Indica J.F. Hmel. Syn. OR Bassia Latifolia Roxb. (Indian Butter tree), Kickxia Ramossisima Wall OR Lineria Ramosissima Wall (Toad flax).
SECTION - II :

STUDIES ON VITAMIN - A, VITAMIN - C, CALCIUM AND IRON
IN SOME MEDICINAL PLANTS

Vitamin A and C are indispensable for the normal growth and maintenance of animal and man. Vitamin A promotes a smooth and healthy mucous membranes and important for good vision, while Vitamin C is needed for healthy bones and for development of strong blood vessels. Calcium and Iron are far most abundant element in the body. Calcium is important for healthy bones and iron is unique and improve the quality of blood.

In view of the importance of Vitamin A and C, Calcium and iron in human nutrition, an assessment of these in the selected medicinal plants was undertaken. Cassia Sophora seed contains highest amount of Vitamin A and Vitamin C. Emblica Officinalis seed contains least amount of Vitamin A, while Kickxia Ramosissima plant contains least amount of Vitamin C. Medicinal plants contain varying amount of calcium and iron. In these medicinal plants the amount of calcium is higher than iron. Madhuca Indica bark is very high in calcium, while Momordica Charantia contains least. Emblica Officinalis seed contains highest amount of iron, while Cassia Sophora seed contains least.
SECTION - III:

QUALITATIVE AND QUANTITATIVE DETERMINATION OF AMINO ACIDS PRESENT IN SOME MEDICINAL PLANTS BY PAPER CHROMATOGRAPHY

Proteins are the indispensable constituents of the living protoplasm. Proteins on hydrolysis yield amino acids. Proteins are made up of about twenty-five different types of amino acids of which ten are essential. These ten essential amino acids are not all represented in the proteins in every plant. It is, therefore, good nutritional practice to make up the protein of the diet from a number of different sources. In the present work the medicinal plants were analysed for their amino acid profile by two-dimensional chromatographic technique using m-cresol: phenol : borate buffer (30 g : 15 g : 7.5 ml) and n-butanol : acetic acid : water (4 : 1 : 5) as the solvents.

The medicinal plants are found to have in common some of the indispensable and dispensable amino acids, such as asparagine, aspartic acid, cysteine, glutamic acid, methionine, proline and tryptophan. Cassia Sophora seed contains histidine. Alpinia Galanga rhizome is superior to others in
essential amino acid composition. Cassia Sophora seed and Eugenia Jambolana seed contain equal and highest number of amino acids, while Tephrosia Villosa leaves the least.

SECTION - IV :

ANTIDIABETIC ACTIVITY OF SOME MEDICINAL PLANTS

The antidiabetic activity of selected medicinal plants were studied. The animals used for the pharmacological studies were adult albino rats of holtzs men strain, weighing 180 - 200 gm in weight. The animal were maintained in ideal laboratory condition with standard diet and water ad libitum.

The results were compared with Tolbutamide treated animals to decide whether the medicinal plant products treatment was effective as antidiabetic agent or not. From the pharmacological studies it revealed that Eugenia Jambolana seed and Momordica Charantia fruit produce more decrease in mg % blood sugar, where as Kickxia Ramosissima plant slightly decrease mg % blood stugar in the normal and alloxan diabetic
Albino rats. While the other plants show very negligible notable effect on diabetic conditions.