INTRODUCTION

Diabetes has been well known as a wasting disease due to insulin deficiency in human beings. The ancient Indian literatures of the Pre-Christian era have distinctly recorded the most important symptoms of this disease such as thirst, excretion of sweet urine and loss in weight. The term diabetes mellitus refers to the excretion of large quantities of sweet urine. Diabetes is an old word for siphon and means diuresis and mellitus means sweet (Jubis , 1979). The clinical entity known as diabetes mellitus comprises a wide variety of symptoms, physical finding and laboratory abnormalities, in which multiple etiologic factors are involved.

Some of clinicians believe that the susceptibility of this disease exists in up to 20-25 % of the population (Marks et al.,1971) .No longer can we consider it simply as a disease of altered carbohydrate metabolism. Other metabolic changes may coexist e.g. protein and fat metabolism (Jefferson et al., 1983).

As in much human diseases, the environmental and the genetic factors play the most critical role in this disease. The role of other hormonal disturbances should also be considered. During stress, the increased secretion of gluco-regulatory hormones tends to elevate the blood glucose concentration. Glucagon and catecholamines stimulate hepatic glucose formation from glycogen, amino acids and lactate and

decrease glucose uptake by the tissues. Moreover, catecholamines also inhibit insulin release as well. Glucocorticoids and growth hormone stimulate gluconeogenesis and decrease tissue glucose uptake . Glucagon and catecholamines increase the process of lipolysis. This process leads to free fatty acids release which in turn interferes with the response of the tissues to circulating insulin. It has been suspected for many years that diabetes mellitus is genetically dependent and the exact mechanism is not clearly known (Jubis, 1979).

Many herbal remedies, individually or in combination with different formulations such as leaf , powder, pastes, decoctions and infusions, pills, etc. had been recommended in various medical treatises. Nadkarini (1954) Indian has also recorded many drug items not necessarily of tried value but collected from the folklore and traditional practices. No medicine capable of giving radical cure of diabetes has yet been discovered. Insulin therapy has made great strides in the past five decades but with certain limitations. In the recent years, attention is however paid to study the biochemical pathways of the diabetic syndrom and connected factors. This new knowledge on insulin antagonists, bound insulin degradation and other aspects of carbohydrate metabolism has now widened the spectrum of the possible mechanism of drug action on diabetes mellitus.

Some of the earlier workers mentioned the use of herbal and mineral preparations for the treatment of this disease. Nadkarini, 1954 gives the names of 42 plants which are considered to be useful in treatment of diabetes .

Conflicting reports on the hypoglycemic activity of some of the plants may be attribuded to a number of variables such as botanical identity of the drugs, time and place of collection of plant material, mode of administration of the drug and the type of experimental animal .

The aim of this investigation is to study the hypoglycemic effect of 4 different plants " lupin, foenugreek, mulberry and Nabk" asindividually as well as in mixture form on normal and STZ – diabetic rats .