Arvind et al., (2003) studied hepatoprotective activity of 3-bromo-6-(4-chlorophenyl)-4-methylthio-2H-pyran-2-one, an isostere of dimethyl ricinine, was evaluated in adult male albino rats intoxicated with carbon tetrachloride, paracetamol or thioacetamide. The test compound showed significant hepatoprotection at 6.0 mg kg\(^{-1}\) body mass daily dose, given to the rats for seven consecutive days. The carbon tetrachloride, paracetamol and thioacetamide were given, respectively, on days 3, 5, and 7, on day 6 and on day 6 post treatment with the test compound. The protective effect was evident in a battery of serum and liver biochemical parameters related to hepatotoxicity.

Bano et al., (2004) reported the aqueous extract of *Piper nigrum* seeds and *Vinca rosea* flowers were administered orally to alloxan induced diabetic rats once a day for 4 weeks. These treatments lead to significant lowering of blood sugar level and reduction in serum lipids. The levels of antioxidant enzymes, catalase and glutathione Peroxidase decreased in alloxan induced diabetic rats however these levels returned to normal in insulin, *P. nigrum* and *V. rosea* treated rats.

Sokeng et al., (2005) reported the study of *Bridelia ndellensis* Beille (Euphorbiaceae), hypoglycemic effects of *Bridelia ferruginea* leaf water and methanol extracts have been reported in alloxan-induced diabetic rats (Addae-Mensah and Achenbach, 1985; Onunkwo et al., 1996). However, no scientific investigation has so far been conducted on the antidiabetic activity of *B. ndellensis*. The present work was therefore undertaken to study the glucose-lowering effects of the ethanol extract and fractions of *B. ndellensis* stem bark in streptozotocin-induced types 1 and 2 diabetic rats at different prandial states.

Kannur et al., (2006) studied seed extracts of *Caesalpinia bonducella* were subjected to screening of antidiabetic activity in alloxan induced hyperglycemia.

Sonia et al., (2006) reported various organic and aqueous extracts of leaves of *Indigofera suffraticosa* Mill (Fabaceae) obtained by infusion and maceration were screened for their antibacterial and antifungal activities.
Pushparaj et al., (2007) reported the Antidiabetic effects of *Cichorium intybus* in steptozotocin-induced diabetic rats.

Shokeen et al., (2008) investigated the antidiabetic activity of 50% ethanolic extract of roots of Ricinus communis (RCRE) along with its bioassay-guided purification. Five-hundred milligram per kilogram body weight appeared to be the effective dose as it caused the maximum lowering of the fasting blood glucose, both in normal as well as type 1 diabetic animals. The maximum hypoglycemic effect was always observed at the 8th h upto which the study has been conducted.

Monirul et al., (2009) studied evaluation of Hepatoprotective Activity of methanol Extract of Some Medicinal Plants Against Carbon Tetrachloride-Induced Hepatotoxicity in Rats. Biochemical parameters such as SGOT,SGPT,ALP and Serum bilirubin. The liver has shown change in weight .so, we can say that the methanolic extract shown significant effect as compared to the standared.

Ramesh et al., (2009) examine the antiulcerogenic effects of various extracts of *Mentha arvensis* Linn on acid, ethanol and pylorus ligated ulcer models in rats and mice. Various crude extracts of petroleum ether, chloroform, or aqueous at a dose of 2 g/kg po did not produce any signs or symptoms of toxicity in treated animals.

Pankaj et al., (2009) reported the experimental investigation of the biological activity of Gymnema sylvestre r.br. Ex schult (Family: Asclepiadaceous) used as a traditional antidiabetic and hypolipidaemic agent in past and present culture. To study the effect of Gymnema sylvestre in both normal and alloxan induced diabetic rats. The aqueous leaf extract of Gymnema sylvestre at the dose of 400, 600 and 800 mg/kg body weight was 1 administered orally once a day to the groups for 30 days. The fasting blood glucose, cholesterol, HDL- cholesterol and serum triglyceride content were estimated in both normal and alloxan induced diabetic rats.

Bangar et al., (2009) reported the antidiabetic activity of a polyherbal formulation, karnim plus marketed for didbetes, was invesitgated for its glucose tolerance, hypoglycaemic and antidiabetic effect in rats.
Karthishwaran et al., (2010) the study deals with the phytochemical examination of therapeutic importance of *Pergularia daemia*, an important medicinal plant. Medicinal plants are as source of great economic value in the Indian subcontinent and continue to provide valuable therapeutic agents. This study involves the preliminary phytochemical screening, the separation and identification of compounds were present in crude extract of *P. daemia* leaves by TLC, HPLC and HPTLC. Further, FTIR analysis of the crude extract has been studied

Saxena et al., (2010) reported the hypoglycemic or anti-diabetic activity of various extracts of various plants has been evaluated in Alloxan induced diabetic rats. In our experiments 30 medicinal plants have been selected for thorough studies from various plants like- Pterocarpus marsupium, Azadirachta indica, Allium sativum, Brassica juncea etc many of them seem to act directly on pancreas and stimulate insulin level in blood. This paper aims to provide a comprehensive review on various plant species from Indian biosphere, which have been shown to display potent hypoglycemic activity.

Kumar et al., (2010) this review gives an account of the current knowledge on the morphology, phytochemistry, and pharmacological aspects of *Erythrina variegata*. *E. variegata* also called *Erythrina indica* is a thorny deciduous tree growing to 60 feet tall. A wide range of chemical compounds have been isolated, mainly alkaloids, flavonoids, triterpenoids, and lectin. Different parts of the plant have been used in traditional medicine as nerve sedative, collyrium in opthalmia, antiasthmatic, antiepileptic, antiseptic, and as an astringent. The alkaloids extracted from the leaves of *E. variegata* are reported to have anti-inflammatory and analgesic activity. Isoflavonoids isolated from *E. variegata* having antibacterial and anthelmintic activity. *E. variegata* shows several other characteristic pharmacological effects like neuromuscular blocking, smooth muscle relaxant, CNS depressant, and hydrocholeretic.

Varma et al., (2010) reported menthol mint (*Mentha arvensis* L.) and peppermint (*M. piperita* L.) cultivars grown in Kumaon region were evaluated for essential oil content and composition at different stages of crop growth. In menthol mint cultivars viz., ‘Kosi’, ‘Saksham’, ‘Himalaya’, and ‘Kalka’, the essential oil content was found to vary from 0.3% - 1.2%, 0.42% - 1.1%, 0.38% - 1.0% and 0.26% - 1.2%, at different days after transplanting (DAT) respectively, while in cultivars ‘Kukrail’, ‘CIM-Madhurus’ and ‘CIM-Indus’ of peppermint, it varied from 0.28% - 0.6%, 0.19% - 0.55% and 0.17% - 0.37%, respectively at different DAT. The menthol content in
all the menthol mint cultivars reached higher values at 120 and 150 DAT. In case of peppermint cultivars viz., Kukrail, CIM-Madhurus and CIM-Indus, menthol content varied from 32.92% - 39.65%, 34.29% - 42.83% and 22.56% - 32.77%, respectively during the crop growth. 

Ansar et al., (2010), studied Hepatoprotective activity of herbal formulation (Hepjaun syrup) and Modified Formulations (HA-II and HA-III) were evaluated and compared statistically after inducing hepatotoxicity in rats by subcutaneous administration of CCl4.

Sakthi et al., (2010) reported In vitro and In vivo antidiabetic activity of the leaves of Ranvenala madagascariensis Sonn. On alloxan induced diabetic rats. The ethanolic extract was more effective in reducing blood glucose levels during acute and prolonged treatment.

Jain et al., (2010) reported aqueous and ethanolic extracts (250 and 500 mg/kg body weight), administered orally to male Wistar albino rats. Alloxan monohydrate was used to induce diabetes mellitus. Total phenolic content was estimated in the extracts. The parameters studied included oral glucose tolerance test, fasting blood glucose, serum insulin and glycated haemoglobin levels, liver glycogen content, serum lipid profile, and changes in body weights. The results suggest that Paspalum scrobiculatum has antidiabetic activity, thereby justifying its traditional claim and augmenting it into the present day systems of medicine.

Sambath et al., (2010) studied the Hepatoprotective and antioxidant effects of caesalpinia bonducella on carbon tetrachloride-induced liver injury in rats. He has use different extract for evaluation of hepatoprotective activity and extracts shown better effect as compared to the standared.

Thirumalai et al., (2011) reported the Restorative effect of Eclipta alba in CCl4 induced hepatotoxicity in male albino rats

Vyas et al., (2011) reported the whole plant, Pergularia daemia (Family: Asclepediaceae), was extracted with 50% alcohol and a fresh batch of the plant material was successively extracted with petroleum ether, ethyl acetate and n-butanol to determine its diuretic activity.
Santani *et al.*, (2011) reported the whole-plant, *Pergularia daemia* (Family: Asclepiadaceae), extract (50% alcohol) was investigated for its antiurolithiatic and diuretic activity. Ethylene glycol (0.75% in water) feeding resulted in hyperoxaluria as well as increased renal excretion of calcium and phosphate. Alcoholic extract (400 mg/kg) of *P. daemia* was given orally in curative and preventi

Karthikeyan *et al.*, (2011) Indian traditional system of medicine, herbal remedies is prescribed for the treatment of various diseases including liver diseases. The present study was aimed to investigate the hepatoprotective activity of the Ethanolic Extract of *Spermacoce hispida* Linn (SHE) against carbon tetra chloride (CCl₄) induced hepatotoxicity in rats. Liver functions were assessed by the determination of SGOT, SGPT, ALP and bilirubin. Histopathological studies were carried out.

Ankur *et al.*, (2011) reported Diabetes mellitus is a metabolic disorder constituting a major health concern today whose prevalence has continuously increased worldwide over the past few decades. Moreover, it has been considered as an incurable metabolic disorder affecting about 2.8% of the global population. Alloxan-induced diabetes is one of the widely used models to induce Type I diabetes mellitus in the experimental animals. Alloxan has been found to be selectively toxic to pancreatic beta cells as it preferentially accumulates in the beta cells as glucose analogues. In addition, the cytotoxic action of alloxan is mediated mainly by the generation of reactive oxygen species (ROS).

Karwani *et al.*, (2011) reported Hepatoprotective activity of *Mimosa pudica* Linn in carbon tetrachloride induced hepatotoxicity in rats.

kekhaskan *et al.*, (2011) studied effects of Butea monosperma (BM) flower extract on high fat diet (HFD) and streptozotocin (STZ)–induced diabetes in rats. Diabetes was induced by feeding HFD for 2 weeks followed by a single injection of STZ (40 mg/kg body weight, intraperitoneally). BM was given orally at a dose of 300 mg/kg for 4 weeks after diabetes induction. At the end of experiment blood was drawn and their pancreas tissues were dissected. The level of fasting blood glucose (FBG), glycated hemoglobin (HbA1c), total cholesterol (TC), triglycerides (TG), free fatty acids (FFAs), low density lipoprotein-cholesterol (LDL-C) and very low density lipoprotein-cholesterol (VLDL-C) increased while insulin and high density
lipoprotein cholesterol (HDL-C) level decreased in HFD/STZ group, which were augmented by BM.

**Sharma et al., (2011)** evaluated the antidiabetic and antioxidant effect of seabuckthorn (Hippophae rhamnoides L.) in streptozotocin-nicotinamide induced type-2 diabetic rats. Experimental diabetes was induced by a single intraperitonial injection of streptozotocin (60 mg/kg), 15 minutes after the i.p. administration of 120mg/kg nicotinamide. Seabuckthorn was Administered orally to streptozotocin (STZ) diabetic rats. Blood glucose, tissue glutathione (GSH) and thiobarbituric acid reactive substances (TBARS) in pancreas were estimated.

**Rajeshwar et al., (2012)** the study was undertaken to investigate the in vitro antioxidant and anti-inflammatory activities of *Indigoera barberi* Gamble. The preliminary phytochemical investigation was carried out to identify the various chemical constituents present in the ethanolic extract. It was found that the Indigofera barberi contain flavonoids, steroids, cardiac glycosides, phenols and tannins.

**Victor et al., (2013)** Trypanosomosis is a debilitating disease affecting mainly livestock and humans in tropical Africa. Chemically synthesized drugs and medicinal plants have been used in the treatment and control of this disease. In this study, the in vitro effect of aqueous extracts and fraction IV extract of Ximenia americana stem bark on Trypanosoma congolense DNA was investigate.

**Yahya et al., (2013)** hepatoprotective potential of methanol extract of B. purpurea leaves (MEBP) was investigated using the paracetamol- (PCM-) induced liver toxicity in rats. The blood samples and livers were collected and subjected to biochemical and microscopical analysis. The extract was also subjected to antioxidant study using the 2, 2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay with the total phenolic content (TPC) also determinedMEBP exerts potential hepatoprotective activity that could be partly attributed to its antioxidant activity and high phenolic content and thus warrants further investigation.

**Sivalingam et al., (2013)** reported the different doses of Ethanolic fraction of *Ribes nigrum* fruit were evaluated for hypoglycemic activity in Alloxan induced diabetic rats. The oral
administration of Ethanolic extract at a dosage of 100mg/kg and 500mg/kg body weight exhibited significantly reduced the serum glucose level in both acute (1, 3, 5 h) and sub-acute (1, 3, 5, 7 days) treatments. Perform the Histopathological study of pancreas.

Ashoush et al., (2013) reported the antioxidant activity of pomegranate peel powder (PPP) and whey powder (WP) was evaluated, their hepatoprotective effect of each alone or in combination (PPWP) at equal levels was also evaluated in Wistar rats against carbon tetrachloride (CCL₄) induced liver injury. The hepatoprotective activity was assessed using various biochemical parameters and histopathological studies.

Umamaheswari et al., (2010) reported the antidiabetic activity of a polyherbal formulation diadet, marketed for diabetes, was investigated for its glucose tolerance, hypoglycemic and antidiabetic activity in rats.

Praveen et al., (2012) evaluation of hepatoprotective agents and preparations to treat hepatic disorders. Polyherbal formulations F1 (Crude drugs formulation), F2 (Lab extracts formulation) and F3 (commercial extracts formulation) were developed by using well documented medicinal plants, Cassia fistula, Coccina indica and Vigna mungo for treatment of liver disorders by exploiting the knowledge of Traditional system of medicine and evaluated for hepatoprotective activity using acute liver toxicity models of CCl4 induced liver damage in rats.

Samaresh et al., (2013) reported the hepatoprotective activity of the methanol extract of Cyperus articulatus Linn. (MECA) against paracetamol induced liver damage in rats. Silymarin (25 mg/kg) was used as standard drug. Hepatoprotective activity was evaluated by the biochemical estimation of liver function parameters (SGPT, SGOT, ALP, total protein and total bilirubin), antioxidant assays of liver homogenate (lipid peroxidation, reduced glutathione content, superoxide dismutase and catalase activity) and histological study of liver tissue.