

diabetes; steroid diabetes, induced by high dose of glucocorticoids; and several forms of monogenic diabetes (Manisha et al. 2012).

India has a diabetic population of approximately about 18 million. The WHO (World Health Organization) has estimated that more than 80% of the world's population use botanical medicines to control this chronic disorder. A variety of plant preparations have been mentioned in Ayurveda and other indigenous systems of medicine (Yeh et al. 2003). These traditional medicines are derived mainly from plants and play major role in the management of diabetes mellitus (Shokeen et al. 2008). There are a lot of hypoglycaemic agents from synthetic sources that are available, and the cost of these medicines is a burden to the people. In addition to these, secondary complications continue to be a major health problem. In this scenario, traditional medicine is widely used for the treatment of diabetes in various developing countries (Saravanan and Pari 2008). The allopathic drugs used for the treatment of diabetes have their own side effects and adverse effects, like hypoglycaemia, nausea, vomiting, hyponatremia, flatulence, diarrhoea, constipation, alcohol flush, headache, weight gain, lactic acidosis, pernicious anemia, dyspepsia, dizziness and joint pain (Kokar and Mantha 1998).

Many indigenous Indian medicinal plants have been found to be useful to successfully manage diabetes. One of the great advantages of medicinal plants is that these are readily available and have very low side effects (Balamurugan and Ignacimuthu 2011). The active principles present in medicinal plants have been reported to possess pancreatic beta cells regenerating, releasing insulin and fighting the problem of insulin resistance. Plants have always been an exemplary source of drugs, and many of the currently available drugs have been derived directly or indirectly from these medicinal plants. The ethnobotanical information reports that, there are about more than 500 plants are being utilized for the treatment of diabetes by various indigenous people (Alarcon-Aguilara et al. 1998).

5.1.1 AREA OF PRESENT STUDY

Meenachil Taluk of the Kottayam district, Kerala, lies in the northeastern region of the Kottayam district (9.36°N and 76.17°E). The area is blessed with diversified habitats such as lush paddy fields, hills and hillocks, highlands and different crop plantations. It has a tropical climate. The humidity is high and rises to about 90% during the rainy season. This area gets rain from two monsoon seasons, the southwest monsoon and the northeast monsoon. The average rainfall is around 3600 mm per year. The southwest monsoon starts in June and ends in September. The northeast monsoon season is from October to November. Pre-monsoon rains during March to May are accompanied by thunder and lightning; the highest rainfall during this period is in December. January and February are cooler, while March, April and May are warmer. The temperature ranges between 38.5°C and 15°C. Though food crops like paddy and tapioca are cultivated, the majority of the population depends on cash crops like rubber and black pepper for income (Reni et al. 2014) (Figure 5.1).