1. Introduction

Plants have always been a major component of traditional system of healing in developing countries, which have also been an integral part of their history and cultural practices. Particularly, medicinal plants offer alternative remedies with tremendous opportunities for making healthy and wealthy to human as well as animals. Many traditional healing herbs and plant parts have been shown to have medicinal value especially in the rural areas and that these can be used to prevent and cure several human diseases. Even today, majority of the world populations are depends on herbal remedies and their healthcare practice (Iyamah and Idu, 2015). The use of plants and their products in curing diseases known as herbal medicine, which is considered part of folk or traditional medicine. For many centuries, treatment with medicinal plants were the only resource available for numerous ethnic groups, and now a days, plants are still used in traditional medicine to treat eradicate and prevent many diseases.

The flowering plants used for medicinal purpose worldwide are estimated to be about 50,000 out of the total 4,22,000 flowering plant species (Choudhury et al., 2012; Polata and Satil, 2012Muthee et al., 2011). In that, 6400 flowering plants in India have ethnomedicinal value, whereas, only 10% of medicinal plant products are used as drug and some of the molecules are being clinical Phase trials in pharmaceutical industries (Vermaetal.,2007; Poonam and Singh, 2009).

Traditionally all herbal preparations were derived from plants, either a simple form of plant parts or complex form of crude extracts, blends, etc. The primary pay backs of using plant derived medicines are considered to be relatively harmless than synthetic substitutes, offering profound therapeutic benefits (Kayani et al., 2014). Plants are extensively being screened for therapeutic phytochemicals and lead compounds (Katiyar et al., 2012). About 25% of the modern drugs are plants originated and numerous synthetic drugs that are built on prototype substances derived from plants are listed in modern pharmacopeia (Mahmood et al., 2013). A large number of active ingredients in medicinal plants, phytochemicals, have been isolated and proved to be responsible for their
pharmacological actions and efficacy (Mukherjee et al., 2010). Bicentennial years of our Indian pharmacopoeia were dominated by herbal medicines and almost 25% of the drugs prescribed worldwide were come from plants. Healing through the use of plants had been in practice many years before Christ in ancient civilizations (Moura-costa et al., 2012).

Plants are important sources of therapeutic drugs and play a significant role in the survival of the tribal and ethnic communities. India is a rich in cultural and floristic diversity and also a store house of ethno-botanical knowledge. Large sections of Indian population still rely on plant-based medicines as they are abundantly available, economical, and have little or no side-effects (Rajakumar and Shivanna, 2009)

Documentation of such information is scanty, which is highly essential for listing its efficacy and further purification of it by the pharmaceutical industry. Moreover, these herbal products are more safe and human friendly as compared to the conventional synthetic drugs (Sahu et al., 2010)

India has more than 427 tribal communities with rich diversity of indigenous tradition. However, traditional knowledge base and practices have been marginalized due to political and socio-economical reasons. Off late, interest in traditional medicine has been initiated to explore the knowledge base from various tribal communities across the country (Jain and Patole, 2001; Pei, 2001; Ignacimuthu et al., 2006; Sandhya et al., 2006; Ragupathy and Newmaster, 2009). It is estimated that over 18,000 species of higher plants occur in different phytogeological/ecological region of the country, in which about one third are medicinally and economically important (Revathi et al., 2013).

“Traditional medicine” is to be understood as the sum total of the knowledge, skills and practices based on theories, beliefs and experiences indigenous to different cultures that are used to maintain and improve health, as well as to prevent, diagnose, and treat physical and mental illnesses (Omwenga et al., 2015). Traditional knowledge of plant uses has accumulated and it has been passed on from ancestors to new generations again and again by spoken word and by life style. Therefore traditional knowledge has a high value that must concern us. Plants have been utilized as medicine throughout human history and
probably even before humans evolved, given the long-standing practice of botanical medicine (Cavero et al., 2013)

Ethnobotany is defined as the study of the relationship between people and plants and most commonly refers to the study of indigenous uses of plants. In other words, it is the marriage between cultural anthropology and botany, a study that investigates the role of plants as medicine, nourishment, natural resources or gateway to the God (Sargin et al., 2013; Diksha and Amla, 2011). Traditional knowledge of plants and their properties have been always transmitted from generation to generation through the natural source of everyday life (Polat et al., 2013). Ethnobotanical studies are very important to reveal the past and present culture about plants and have become increasingly valuable in the development of health care and conservation programs in different parts of the world (Shil et al., 2014).

Human and plant interactions is deemed crucial in success of the drug discovery pursuits. Ethnobotanical studies and traditional knowledge are important to set priorities in the local communities and promote sustainable development. Hypotheses from ethnobotany is believed to contribute to natural product data bases and expedite pharmaceutical lead compounds identification and derivatization from the pharmacophores (Barkatullah et al., 2015; Camara-Leret et al., 2014; Albuquerque et al., 2012; Mandal et al., 2012). Documentation of the indigenous knowledge through ethnobotanical studies is an important for the conservation and utilization of biological resources. Therefore, establishment of the local names and indigenous uses of plants has significant potential societal benefits (Cakilcioglu et al., 2011). Ethnobotanical research on medicinal plants have been developing for over a century. The therapeutic use of plant resources within distinct human populations have long been understood to be part of a system of knowledge subject to historical, geographical, cultural, economic and social influences (Medeiros et al., 2012)

Difficulties of access to medical health systems have contributed to the growing demand for natural medicinal products in recent years. More than 80% of the world's
Identification and characterization of antimicrobial compounds from selected ethnomedicinal plants of Silent Valley (Western Ghats, Kerala) with emphasis on Venereal diseases

population benefits from phytotherapeutic treatments for primary health care. Knowledge about the use of plants in traditional medicine is an important source for obtaining new substances of biological interest. The discovery of these compounds has been driven by ethnobiological research on the use of biodiversity. This information promotes bioprospecting studies as a potential tool for new strategies in the research, development and rational exploitation of medicinal resources derived from flora (Ribeiro et al., 2014).

**Worldwide alarming reproductive problem (Venereal diseases)**

Venereal diseases, also referred to as sexually transmitted diseases (STDs), are infections that are usually acquired during sexual intercourse. Venereal infections are highly responsive to traditional treatment. Venereal diseases are infections caused by a variety of pathogens (bacteria, fungi and viruses); continue to be the major health problem in developed countries. These pathogens that can thrive in warm, moist dark areas of the human body including the genitals, anus and mouth WHO estimates that there are 444 million cases of STDs each year and Gonorrhea cases accounted for 62 million cases (WHO, 2011 and 2012, Pendota et al., 2017) with identification and characterization of antimicrobial compounds at least 411 million occurring in young people under 25 years of age. Infectious diseases are the world leading cause of premature deaths, killing almost 50,000 people every day (Ahmed and Beg, 2011). Although there are more than 30 bacterial, viral and parasitic pathogens which are sexually transmissible, *Treponema pallidum* (syphilis), *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and *Trichomonas vaginalis* are responsible for most of the sexually transmitted infections (STIs) (WHO, 2007; Wet et al., 2012).

In recent years, drug resistance to human pathogenic bacteria has been commonly reported from all over the world. In the present scenario of emergence of multiple drug resistance to human pathogenic organism, this has necessitated a search for new antimicrobial substances from plants. Traditional medicinal plants have various therapeutic properties. Maintain and kill properties of the plant interaction with the host are considered candidates for developing new antimicrobial drugs. An antimicrobial
agent derived from plants has accelerated in recent year (Chomnawang et al., 2009). Antimicrobial properties of medicinal plants are being increasingly reported from different parts of the world.

A number of ethnobotanical surveys conducted in other developing countries such as Bangladesh, India, Central America, Zambia and Zimbabwe confirm the traditional use of plants for the treatment of sexually transmitted infections (Caceres et al., 1995; Ndubani and Hojer, 1999; Kambizi and Afolayan, 2001; Jain et al., 2004; Hossan et al., 2010). In most of these ethnobotanical studies the information on the plants used for treating STIs came from traditional healers and very few rural dwellers or lay people were consulted for their knowledge. This study found that the medicinal plant knowledge of tribal people in this area contributed to their ability to manage with a wide variety of ailments.

By keeping all the above in mind, the present work has been carried out with the following objectives,

- To document the medicinal plants used by tribal people of Silent Valley, Kerala for treating various diseases with focus on venereal diseases.
- To select most commonly used medicinal plants in the treatment of venereal diseases by traditional healers for further studies.
- To investigate the antimicrobial activity of different solvent extracts of selected medicinal plants.
- To identify phytoconstituents from active extracts by GC-MS analysis.
- To analyze the potential bioactive compounds through pharmaco-informatic study (molecular docking and modelling).
- To isolate and identify bioactive compound by spectral analysis (UV, TLC, CC, NMR, Mass and FTIR).
- To study the antimicrobial activity of isolated active compound