Abstract:
Plants, as the source of medicine, have been playing an important role in the health services around the globe. About three quarters of the world’s population relies on plants and their extracts for healthcare. Use of herbal medicine in Asia represents a long history of human interactions with the environment. Plants used in traditional medicine contain a wide range of ingredients that can be used to treat chronic as well as infectious diseases. The medicinal value of plants lies in some chemical substances on that body. The most important of these bioactive compounds of plants are alkaloids, tannins and phenolic compounds. In this Present Study the bioactive compounds from the plant Piper longum were determined by using FT-IR Spectroscopic methods.

Key words: Piper longum, FT-IR, Spectroscopic methods

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INTRODUCTION:
Members of the Piperaceae may be small trees shrubs or herbs[1]. The distribution of this group is the best described as pan tropical and sub-tropical of the world. There are 30 species of the genus in India and 700 species in the world[2,3]. The most well-known species is Piper longum, which yields most peppercorns that are used as species, including black pepper, although its relatives in the family include many other spices [4,5].

Thippali consists of dried fruits of Piper longum L. [Piperaceae] a slender, aromatic, creeping and perennial herb [6]. It is commonly used to treat stomach ache, bronchitis, cough and tumour. It is also applied externally to soothe and relieve muscular pains, rheumatism, paralysis and inflamed skin. Pippali contains an alkaloid piperine as chief constituent [7]. It is applied locally for muscular pain, inflammation and internally used as a carminative in conditions such as loss of appetite and sleeplessness [8]. In the Western part of India aqueous extract of the roots of Piper longum L. is used as food material [9]. In addition to this, there is a major role for Piper longum L. in preventing the cancer development in the experimental glioma model [10]. The extract of the root of Piper longum L. and its major compound, piperine exert anti-oxidant activity and are protective in the myocardial ischemic condition [11]. The alcoholic extract of the fruits of the plant Piper longum L. and its component piperine showed significant immunomodulatory and antitumor activity [12]. Piper nonaline, a piperidine alkaloid derived from long pepper, possess a mosquito larvicidal activity [13]. Piperine was the first amide isolated from Piper species and was reported to display central nervous system depression, antipyretic, and anti-inflammatory activity [14]. The Piper longum L. dried fruit’s oil showed significant anti-inflammatory activity on carrageen an-induced rat paw edema [15]. Isolates from Piper longum L. fruit extracts showed antimicrobial activity against Gram-positive bacteria and Gram-negative bacteria [16].

MATERIALS AND METHOD:
Selection of Plant Material
In this present study, the plant Piper longum L. leaves and seeds were collected in Edakode, Kanyakumari District, Tamilnadu. An adult, fresh leaves were picked out from the plant and also the matured seed were collected from the plants and transported to the laboratory for work.

The collected leaves were subjected to surface cleaning by rinsing the samples with sterile water, in order to remove dust particles present on the plant materials. The samples such as leaf and seeds were allowed to shade dry to remove moisture content. The dried samples were used for further studies.

Preparation of plant extracts
The leaves were cut into small pieces and seeds were made powdered using electric mixer grinder. All the samples were subjected to soxhlet extraction using five solvents such as Acetone, Chloroform, Dimethyl sulfoxide, Ethanol and Distilled water. Each 5grams of plant material was filled separately in the thimble and extracted successively with 60ml of solvents using a soxhlet extractor for three hours. After solvent evaporation, each of these solvent extract was weighed and preserved in room temperature until further use.

Fourier Transform Infrared Spectrophotometer [FTIR] analysis
The leaf and seed samples were analysed in ATR model FTIR Spectrophotometer [Bruker Co., Germany]. The spectrum [400-4000 nm] was recorded using Attenuated Total Reflectance [ATR] technique beach measurement.

RESULTS AND DISCUSSION:
The leaf of Piper longum L. showed twelve 12 functional groups and the peak values are 519.29, 620.42, 879.79, 1044.34, 1086.12, 1274.88, 1326.35, 1380.43, 1651.91, 2884.50, 2972.64 and 3328.08. The fruit of Piper longum L. showed eleven 11 functional groups and the peak values are 595.18, 879.94, 1044.41, 1086.16, 1273.28, 1327.34, 1379.99, 1659.28, 2883.36, 2972.06 and 3324.96.

FTIR study was performed for all the leaf and seed samples. In the present study, Leaf of Piper longum L. contained twelve 12 functional groups, the major peaks were [cm-1] 879.79, 1044.34, 1086.12, and 2972.64; the seed of Piper longum L. contained eleven 11 functional groups, the major peaks were [cm-1] 879.94, 1044.41, 1086.16 and 2972.06.
CONCLUSION:
In modern days, medicinal plants are becoming probable sources of important drugs and pharmaceutical industries. Nowadays, they have come to consider traditional medicine as a source of bioactive agents which can be used in the preparation of synthetic medicine. Even after the establishment of allopathic medicine and advance allopathic treatments, most of the people of Kanyakumari district believes in traditional medicine system. So many number of traditional siddha practitioners in Kanyakumari district are almost allopathic medicinal practitioners. Almost all the members of Piperaceae are used in the traditional medicinal system. Species like *Piper nigrum* L., *Piper betle* L. and *Piper longum* L. ranks first in the siddha medicinal use. For most of the siddha medicinal preparation any one of the Piperaceae member being an incredent.

REFERENCES: