6. SUMMARY

*Stachytarpheta jamaicensis* (L) Vahl. belongs to the family Verbenaceae. It is commonly known as seemai nayuruvi. This plant can be found on street and Croix growing along roadsides. The plant is also growing in disturbed sites, grass-fields, brushwood, young forest, watersides and moreover cultivated as a hedge-plant. The plant was reported to be used in the treatment of wide variety of diseases especially in the treatment of anti spasmodic activity, anti-inflammatory activity, anti nociceptive activity, vasodilator activity, laxative activity, anti-diarrheal activity, antiulcer activity, antimicrobial activity, cytotoxic activity, analgesic, antihelminthic, diuretic, hypotensive, lactogogue, purgative, sedative, stomachictonic and vermifuge. It is used to cure the allergies and respiratory conditions such as colds, flu asthma, bronchitis and others; it is also used for digestive problems such as indigestion, acid reflux, ulcers, constipation, dyspepsia and slow digestion.

The pharmacognostical studies on leaf, stem and root of the *Stachytarpheta jamaicensis* was carried out with a view to evaluate morphological, anatomical, physicochemical studies such as, ash values, pH values, extractive values and fluorescence analysis.

*In vitro* antioxidants such as DPPH free radical scavenging activity, superoxide radical scavenging assay, nitric oxide radical scavenging assay, ferrous iron chelating activity, hydroxyl radical
scavenging assay, total antioxidant activity, ferric reducing antioxidant power, total phenolic content and total flavonoid content were studied with petroleum ether, chloroform, acetone, ethanol and methanolic extract of the leaf, stem and root of *Stachytarphyta jamaicensis*. *In vitro* antioxidants the methanolic extract of the plant parts significantly increased all the activities compared with other extracts. The leaves having more activity where compared with stem and root.

Isolation and characterization of phytochemical constituents are very important for the biological properties of the plants material. Hence the phytochemical screening of the leaves, stem and root of *Stachytarphyta jamaicensis* was carried out. The preliminary phytochemical studies revealed, the presence of proteins, alkaloids, phenolic compounds, tannins, flavonoids, saponins, phytosterols, gums and mucilage and glycosides. Further the compound isolation of the methanolic extracts of leaves and root of *Stachytarpheta jamaicensis* were analyzed by chromatographic and spectroscopic studies. The confirmation of compounds namely, friedelin, ursolic acid and hispidulin isolated from the leaves and alfa-spinasterol isolated from the roots.