6. SUMMARY

Biochemical studies on the leaf of *Aegle marmelos* where carried out with a view to standardize and distinguish the characters of leaf of two variants, variant -I and variant- III. Morphological, physiochemical, qualitative, quantitative and pharamacological studies were undertaken on the leaf of the two variants.

By comparative analysis of the leaf of the two variants on the above parameters, it was established that the leaf of the two variants could be distinguished either in entire powder or extract form. In morphological characters, the two variants of *A. marmelos* leaf could be distinguished by the size and shape of leaf, fruit and spine. Leaf powders, their extracts in ethanol solvent qualitative and quantitative parameters were analysed and their values are known.

Physiochemical values of *A.marmelos* variant-I and variant-III samples were more or less similar but qualitative and quantitative phytochemical values showed variation among the two variants. By the present work, it is possible to identify the leaf of the two variants.

Pharmacological studies on anti inflammatory, antioxidant, antiulcer and antimicrobial property of the leaf of *A.marmelos* established their efficacy as climbed in Siddha literatures and previous ethnobotanical studies. It is suggested that *A.marmelos* could be a potential natural drug for further clinical studies for various chronic diseases.
Based on the above studies, it is concluded that leaf of *A.marmelos* variant-I and variant-III have more or less similar constituents and pharmacological activity.

Further phytochemical (Structural elucidation), pharmacological and clinical studies are needed to confirm the use of *A.marmelos* leaf of variants as phytomedicines. There is a huge gap between herbal demand and supply. Therefore there is an urgent need for large scale cultivation of medicinal plants to meet the herbal demand in India and abroad.

Among the two medicinal plants, variant-I is being frequently used and collected by traders and traditional physicians in large scale from wild. Because of climate change and large scale destruction of natural habitat together with uprooting of entire plants, natural population of *A.marmelos* has been reduced.

Variant -III *A.marmelos* is available in plenty but it is has been utilized very little. The present work has proved that variant-III *A.marmelos* could be used as substitute for variant -I *A.marmelos*. To save the natural population of medicinal plant, harvesting and usage of renewable parts like leaf, fruit is to be adapted.