CHAPTER-I - GENERAL INTRODUCTION

Green plants synthesize and preserve a variety of biochemical products, many of which are extractable and used as chemical feed stocks or as a raw materials for various scientific investigations. Many secondary metabolites of plant are commercially important and find use in a number of pharmaceutical compounds\(^1\). The use of herbal medicines is an evidence or science based approach for the treatment and prevention of disease is known as phytotherapy\(^2\).

Phytochemicals with biological activity had great utility as pharmaceuticals and pest management agents. Most of the medicines of previous centuries were of botanical origin, products of centuries of ethnobotanical core. These botanical remedies were generally effective, although they contained many inert compounds in addition to the active compound(s). The advent of modern organic chemistry and the reductionist concept of a single active ingredient led to the discovery and exploitation of many single bioactive compounds from plants that are now used for medicinal purpose. The ethnobotanical approach is still successfully used, eg: Antimalarial drug Artemisinin was isolated active principle from the ancient Chinese anti-malarial remedy Qinghaosu, a formulation of *Artemisia annua* L., commonly known as annual wormwood in North America. Artemisinin is now commercially produced from plants\(^3\).

In the past decade there has been an increasing public interest in natural products, partly due to a suspicion about the safety of synthetic, non-natural remedies. However, both types should be used, sometimes together, in conventional medicine as well as in complementary or alternative medicine\(^4\).
The World Health Organization (WHO) estimated that 80% of the population of developing countries relies on traditional medicines, mostly plant drugs, for their primary health care needs. Also, modern pharmacopoeia still contains at least 25% drugs derived from plants and many others which are synthetic analogues built on prototype compounds isolated from plants\textsuperscript{5}. Demand for medicinal plant is increasing in both developing and developed countries due to growing recognition of natural products, being non-narcotic, having no side-effects, easily available at affordable prices and sometimes the only source of health care available to the poor. Medicinal plant sector has traditionally occupied an important position in the socio-cultural, spiritual and medicinal arena of rural and tribal lives of India.

Millions of rural people use medicinal plants in a self-help mode. Over one and a half million practitioners of the Indian System of Medicine in the oral and codified streams use medicinal plants in preventive, promotive and curative applications. There are estimated to be over 7800 manufacturing units in India.

According to an all India ethno-biological survey carried out by the Ministry of Environment & Forests, Government of India, there are over 8000 species of plants being used by the people of India. (Fig 1.01) Represents the plants in various Indian systems of medicine and the overlap of plants used in various systems of medicine\textsuperscript{6}. 
Nearly all ‘wonder drugs’ in use today are derived from natural products of about 120 plant derived drugs commonly in use in one or more countries, 74% of the discovered were as a result of chemical studies, directed at the isolation of the active constituents of plants used in traditional medicine.
1.2 AIM AND OBJECTIVE OF PRESENT WORK:

The main aim of this research work is to investigate the Pharmacognostical, Gastroprotective, Antioxidant and Anthelmintic studies on three medicinal plants of Annonaceae.

Plan of work:

1. Literature review of plants.
2. Depending upon literature review selection, collection and authentification of plant materials.
3. General study about the plants.
4. Pharmacognostical studies on the selected plants.
5. Preparation of extracts.
6. Qualitative phytochemical evaluation of the plant extracts.
7. Biological studies.
   a. Acute toxicity studies.
   b. *In vivo* screening of selected plant extracts for gastro protective activity (pyloric ligation in rat model).
   c. *In vitro* screening of selected plant extracts for antioxidant activity (1,1-Diphenyl picryl hydrazyl radical, Nitric oxide radical, Hydroxyl radical, Superoxide radical).
   d. Screening of selected plant extracts for Anthelmintic activity, using Indian earth worm (*Pheritima postuma*).
1.3 REFERENCES:


