VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM-590 018

PROJECT WORK

(06CH85)

"INVESTIGATIONS ON EXTRACTION, PHYTOCHEMICAL AND PHARMACOLOGICAL STUDIES ON ACTIVE CONSTITUENTS OF *ANDROGRAPHIS PANICULATA*"

(SPONSORED BY K.S.C.S.T, Bangalore)

Submitted in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF ENGINEERING

IN

CHEMICAL ENGINEERING

HEAD OF THE DEPARTMENT

Dr. S. Shanmukhappa M.Sc., Ph.D.

PRINCIPAL

Dr. V. Ramaswamy Ph.D.

PROJECT GUIDES

Dr.B.M.Kularni M.Tech., Ph.D

Dr. S. Shanmukhappa M.Sc., Ph.D.

PROJECT ASSOCIATES

ASHWIN PRABHU	**4BD09CH003**
K.VINUTA	**4BD09CH011**
MADHU K.M	**4BD09CH013**
NEETU C.P	**4BD09CH017**

DEPARTMENT OF CHEMICAL ENGINEERING

BAPUJI INSTITUTE OF ENGINEERING & TECHNOLOGY

DAVANGERE-577004, KARNATAKA, INDIA

ABSTRACT

Herbs are staging a comeback and herbal 'renaissance' is happening all over the globe. Human kind first used the materials found in the environment on an empirical basis to cure various ailments. Of the 2,50,000 higher plant species on the earth, more than 80,000 are medicinal. India is one of the world's 12 biodiversity centre with the presence of over 45,000 different plant species. Of these, about 15,000 – 20,000 plants have good medicinal value. Green plants synthesize and preserve a variety of biochemical products. Many of which are extractable and used as chemical feed stocks or as raw material for various scientific investigations. Plants, especially of medicinal value provide biologically active molecules and lead structure for the development of modified derivatives with enhanced activity and reduced toxicity. Many secondary metabolites of plants are commercially important and find use in a number of pharmaceutical compounds, selection of the superior plant stock and over exploitation by pharmaceutical industry.

The plant species used in our work is *Andrographis paniculata*. It is an erect annual herb extremely bitter in taste in all parts of the plant body. The plant is known in north-eastern India as Maha-tita, literally "king of bitters", and known by various vernacular names. As an Ayurveda herb it is known as Kalmegh or Kalamegha, meaning "dark cloud".

The Phytochemical analysis revealed the presence of Carbohydrates, Proteins, Alkaloids, Glycosides, Tannins, Terpenoids, Flavonoids, and Starch which are involved in the medicinal property of *Andrographis paniculata.*

The inhibitory activity of different extracts of *Andrographis paniculata* were tested against *E-coli*, *Bacillus Subtilis* and *Pseudomonas aeruginosa*. The extracts have shown inhibition at the concentration range 400 µg to 500 µg. The leaf extracts have shown better inhibition compared to stem extracts. The obtained data illustrates that the different extracts of *Andrgraphis paniculata* are lesser toxic compared to standard drug Gentamycin under identical experimental conditions against the same organisms. The further research is needed in quantitative and qualitative evaluation of phytoconstituents.