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**ECONOMIC IMPORTANCE OF SECONDARY METABOLITES IN  
MEDICINAL PLANTS****DR.S. SENTHILKUMAR****KARUR, TAMILNADU, INDIA.****KEYWORDS:**

Toxicity, antimicrobial, plant breeding, Economic importance, medicinal plants.

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**ABSTRACT**

Humans have used medicinal plants through our their history life, and long time before, good records were kept about herbs use. Texts from India and china provide a good example of very early use of medicinal herbs. They contain prescription of countless plant – derived medicine. In modern times, natural products from plants have been isolated for drug discovery and development. During the last 20 to 30 years, the analysis of secondary plant products has progressed a lot.

**INTRODUCTION:**

The secondary metabolites from plants, which are distinguished from primary metabolites such as nucleic acids, amino acids, carbohydrates, fat etc. are extremely diverse, thousands of them have been identified in several classes. Each plant family, genus and species produce a characteristic mix of these chemicals, and they can sometimes be used as taxonomic characters in classifying plants.

Many scientific sources state that their role is not crucial for living cells in normal growth, development and reproduction, but they act in defense purposes to protect a plant from any possible harm in the ecological environment and other interspecies protection. Plants have been evolving to adapt the environment with genetic encoding of useful and diverse synthases for secondary metabolites. In human life, these compounds are used as medicines, flavorings, or relaxing drugs, especially essential oil.

**ECONOMIC IMPORTANCE OF SECONDARY METABOLITES IN MEDICINAL PLANTS:  
MEDICINAL PLANTS:**

The secondary metabolites have a lot of economic importance in the toxicity, anti microbial, plant breeding, health and pharmaceutical etc.

**1. ANTIMIROBIAL:**

Some herbs like thymus vulgaris contain caffeic acid, which is effective against viruses, bacteria and fungi. Phenolic compound containing essential oil like eugenol found in osmium gratucimum is considered bacteriostatic against both fungi and bacteria. Aloe vera contains a combination of these metabolites together with latex is effective against streptococcus, salmonella and staphylococcus.

**2. TOXICITY:**

Many of the plant secondary metabolites are toxic both to man and to animal. Example: conine from conium sp, strychnine from strychnos both are poisons both to man and animal. Cyanogenic glycosides seen in cassava are toxic to man and animal.

**3. PLANT BREEDING:**

Plant breeders try to select varieties which provide maximal yields in combination with optimal quality and resistance against pathogen, herbivores and other environmental stress. One of the major problems of modern agriculture is its need for herbicides, insecticides and other pesticides, for instance potatoes contain steroid alkaloids as characteristic secondary metabolites which have been shown to be active against insects and microorganisms.

**4. HEALTH AND PHARMACEUTICAL:**

Secondary metabolites have been used in the formulation of various drugs like the alkaloids, that are used as antimalarial drug, anesthetics and other antibiotics that are used to prevent bacterial infections.

and other health related issues. Eg solanum khasianum mixed with other alkaloid may be useful against HIV infection as well as intestinal infection associated with AIDS.

#### 5. ALLELOPATHIC EFFECT:

Simple phenyl propanoids and benzoic acid derivatives are frequently cited as having allelopathic activities compounds such as caffeic acid and ferulic acid occur in soil in appreciable amounts and have been shown in laboratory experiments to inhibit the germination and growth of many plant. This may have a potential agricultural application, reduction in crop yields caused by weeds or residues from the previous crop may in some cases be a result of allelopathy an exciting future engineered to be allelopathic to weed it. Has been observed that any plant or plant product that can inhibit the growth of other plant contain phenolic compound as they secondary metabolites or phytochemicals.

#### CONCLUSION:

The medicinal plants source of secondary metabolites alkaloids, flavonoids, terpenoids, phloba tannins and reducing sugars, medicinal plants play a vital role in preventing various diseases. The antidiuretic, anti-inflammatory, antianalgesic, anticancer, anti-viral, anti-malarial, anti-bacterial, antifungal activities of the medicinal plants are due to the presence of the above mentioned secondary metabolites. Medicinal plants are used for discovering and screening of the phytochemical constituents which are very helpful for the manufacturing of new drugs.

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