

## Herbs as therapeutics

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## PLENARY LECTURE

Plants are organisms that utilize solar or chemical energy to synthesize starch and constitute the basic component of any food chain as the producer. All food chains must start with a producer. Herbs are plants generally used in food either raw or in cooked form for its flavor, color and texture. Use of herbs for treating ailments has been practiced since times immemorial. The ancient Ayur Veda and Chinese medicine have used herbs for preventing and curing ailments. The Holy Bible refers to several herbs for their culinary and healing powers.

Plants produce phytochemicals for photosynthesis, growth, and metabolism and for protection against predators. These phytochemicals when consumed by the consumers in the food chain offer long term benefits. Around 12000 such compounds have been isolated and identified. This is estimated to be less than 10% of the actual available number. Most of the primary metabolites are sugars which are produced by all plants. The secondary metabolites are more important. They are specific for the plant species and have specific functions e.g., terpenoids, tannins, flavinoids, alkaloids. They may be toxins, pheromones or pigments.

Traditionally, the herbs are used in whole or in part for therapy or cure. In modern times, the active compound is extracted, scientifically characterized and synthesized commercially e.g., Inulin from root of Dhalias, quinine from Cinchona, morphine from poppy seeds. Use of the whole plant or the whole extract in traditional medicine reduces the harmful effects of the active compound as it is neutralized by other compounds in the extract. Hence traditional medicine is considered more holistic whereas the modern medicine uses the concentrated active compound which may lead to unpleasant side reactions.

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Extracts from herbs have multipronged applications – there are proven microbicidal compounds - antibacterial, antiviral, antifungal, antiparasitical, larvicidal. Some are used for treating systemic ailments such as jaundice, skin infections, gastric ulcers, blood purification etc. Herbs have also found application in the cosmetic industry e.g., skin rejuvenation, hair care.

The latest modern science Pharmacognosy deals with medicines from plants. The functional active compounds from several herbs have been extracted and many of them are already translated in to modern drugs. A thousand more active ingredients are awaiting discovery. Large scale well channelized efforts are needed to bring out the potential of these ingredients into active therapeutic use. It is time Indian Scientists wake up to the wonderful wealth of knowledge and prevents losing them in patent wars.