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## PHARMACOGNOSY: USE OF NATURAL PRODUCTS IN DRUG DISCOVERY

P. Garg\*

Department of Medicine, University of Sydney and Royal North Shore Hospital, NSW, Australia

\*Corresponding Author: Email: [garg.pravas@gmail.com](mailto:garg.pravas@gmail.com)

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### DESCRIPTION

In several nations of the world, a great number of morbidity and deaths arising from illnesses are witnessed due to lack of basic health care. Phytotherapy has continued to play an important role in the prevention and treatment of diseases (communicable and noncommunicable). Fascinatingly, more than 80% of the global populations now adopt phytotherapy as a basic foundation of maintaining good healthy conditions, owing to the pronounced side effects, nonavailability, and expensive nature of conventional treatment options. While this appraisal looked at the prospects and downsides of phytomedicine as it narrates to the national health care system, it established the fact that although a number of medicinal plants had been ingenious or effective against a range of diseases, with few developed into drugs based on the available phytotherapeutics, quite a huge number of them are yet to scale through clinical trials to determine their safety and efficacy. It is believed that until this is done, we hope phytomedicine to be accepted or integrated into the national health care system in many countries.

Pharmacognosy is a vital discipline in the Pharmacy curriculum and deals with the study of crude drugs that includes plants, animals and marine sources. The subject has played a diverse role in the discovery, characterization, production and calibration of crude drugs. In the recent past, the world has witnessed a wonderful regeneration of interest in natural products in the area of drug discovery, cosmeceuticals and nutraceuticals. Pharmacognosy now includes many fields like botany, ethanobotany, marine biology, microbiology, alternative medicines, chemistry, pharmacology, phytochemistry, pharmaceuticals, clinical pharmacy and molecular biology and has a multidisciplinary approach.

The department is involved in undergraduate teaching and has a well-equipped laboratory and medicinal garden. The garden set up in 2005, is well upheld with the help of a horticulturist. Currently the garden houses around 40 well labeled plants that have value in the field of medicine and cosmetics. The department has classy instruments like Microscope with image analyser, Rotavac evaporator, Moisture balance that can be used for research activities associated in the field of Pharmacognosy.

Pharmacognosy is still a pertinent science for the discovery of future medicines, with Japan and the USA very active in the field. Researchers are encouraged to be aware of the ethical issues with using natural products as medicines. For example, deliberation has to be given to conservation of different plants to make sure that exact plants and organisms are not put at risk. Moreover, there must be high standards of quality control to ensure plants used for medicinal purposes are properly identified and any drugs derived from them are of sufficient purity to be safe for use. It is suggested that periods of review are put in place to accurately identify risks of long-term use of natural medicines and assess their toxicity. Medicines derived from natural sources are also often suggested or administered by people outside of medical or pharmaceutical organizations, meaning advice given may not always be accurate or safe.

## **CONCLUSION**

Humans have created medicine from plants and other organisms for centuries, hence pharmacognosy being generally considered the oldest brand of pharmacy. There is 5000-year-old proof of medicine production on Sumerian clay from Nagpur, and around 12 ancient medicinal recipes have been found with plant ingredients such as poppy and mandrake, which is a Mediterranean plant in the nightshade family. The production of drugs from plants is also referenced in many antique texts. Through the ages, information has been discovered which states to humans making medicines from garlic, mustard, cabbage, parsley, and mint. No one country or nation dominated medicine production using plants and organisms; the practice was carried out globally. Ingredients would vary based on what was willingly available to people in their environment. The extraction of alkaloids from poppy and other plants contributed to the beginnings of modern medicine in the 19th century. From that point, other active ingredients were extracted from other plants to produce medications we have now.