

BOOK REVIEW

Occurrences, Structure, Biosynthesis, and Health Benefits Based on Their Evidences of Medicinal Phytochemicals in Vegetables and Fruits. Volume 3

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Global population explosion and global warming contribute to environmental disasters, massive migration, and decrease in agricultural production. These dynamics have greater impact on economically unfortunate communities resulting in malnutrition creating a negative impact on human health. In recent times, there is a growing awareness among researchers to identify unfamiliar functional foods as an alternative nutritional source for the affected population. The editor initiated an excellent effort to address various aspects of health foods in the series. The current volume 3 of "*Occurrences, Structure, Biosynthesis, and Health Benefits Based on Evidences of Medicinal Phytochemicals in Vegetables and fruits*" is dedicated to evaluate the significance of some underutilized fruits, herbs and vegetables. Their constituents help in combating malnutrition and its related diseases. This volume comprised of five chapters dedicated to describe health benefits of 1. Canistel fruit (*Pouteria campechiana*), 2. Brahmi (*Bacopa monnieri*), 3. Nutrients from agricultural waste, 4. Grape polyphenols and 5. Alkaloids and vitamins.

The first chapter illustrated a less familiar Canistel fruit (*Pouteria campechiana*), native to North America. The author discussed about the nutritional values and conventional secondary metabolites of the fruit. The fruit is a rich source of poly-phenols, triterpenoids, vitamins, minerals and fiber. Consumption of these fruits provide nutrients vital for health. Of late betulinic acid present in this fruit as glycoside gained prominence for its standing anticancer activity recognizing the fruit a valuable source in cancer prevention.

The second chapter depicted the advantages of the herb *Bacopa monnieri* used in treating neurological disorders as pronounced in ancient Ayurveda texts. The authors effort to connect the folklore observations with modern scientific studies to substantiate its biological activities was well justified. They focused mostly on therapeutic potential of this herb compared to conventional medicines of synthetic nature where few choices are available with hostile side effects. Besides, they emphasized the importance of *Bacopa* herbal preparations used to minimize the behavioral disorders and enhance memory in the children. Furthermore, *Bacopa* is used to diminish the effects caused by age related symptoms like dementia, Parkinson's, Alzheimer and memory loss caused by deteriorating nervous system. The authors portrayed the biological mechanisms involved at molecular level. The purpose of this chapter was to inspire scientists to extend their research to find answers to some questions described in the text. The sentence like "individuals with rheumatoid arthritis are two times more likely to develop depression than individuals with rheumatoid arthritis" creates confusion to the readers. (Page 52, I5.1 paragraph 3). However, this won't disrupt the purpose.

The third chapter explored the gains of the wastage recycling produced by the food production and processing industry. This wastage comprises surplus constituents contributing to pollution. The waste

material could be utilized to reap the benefit as nutritional supplements. The review could educate readers about the nourishing value hidden in the underutilized peels, seeds, stems and roots of the food material.

The fourth chapter emphasized on exploring the nutritional benefits of polyphenols existing in grapes and their derived products. These polyphenols promoted cardiovascular protection, induction of apoptosis, modulating intracellular signals stimulation as well as activation of enzymes. Furthermore, polyphenols reduced platelet aggression which diminished plaque formation. Most recent studies about research on grapes were presented in this chapter.

The fifth chapter described the therapeutic potential of some selected alkaloids and vitamins. The authors highlighted and cautioned about the noxious nature and addictive properties of these alkaloids. However, alkaloids are very important in controlling cardiovascular function, neurological diseases, hypertension and carcinogenesis at the prescribed low doses. Various methods were explained about the interaction and binding affinities of alkaloids and vitamins with Human Serum Albumin in blood, evaluating the effectiveness of their delivery from site of administration to target area for their therapeutic potential.

This volume 3 is an excellent source of information regarding the health benefits of naturally occurring products. All the chapters are compelling with their extensive presentation of the natural product classes and the multitude of the individual compounds. With such profuse information this volume makes an impressive addition to the library literature.

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