AgroScience Today

Popular Article

e-ISSN: 2583-0147

Volume 5 Issue 8
Page: 0936 – 0939

Underutilized Plants used as Functional Foods

Takam Yari[1] and Seema Sonkar[2]

[1] M. Sc. Food Science and Nutrition department, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh, India.

[2] Associate Professor, Department of Food Science and Nutrition, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh, India.

Corresponding author's e-mail: *seema07csa@gmail.com*

Published on: August 31, 2024

ABSTRACT

The quest is continuous for effective health-promoting ingredients in the fields of culinary innovation and nutritional research. The increasing consumer demand for functional foods - those offering additional health benefits beyond basic nutrition has propelled researchers and food technologists to explore new, natural ingredients. Over the past decade, the commercial, academic, and governmental sectors have all shown a greater interest in the creation of functional foods. Consumers readily accept food items with health claims attesting to their functional potential to enhance health beyond the supply of vital nutrients, which probably lowers morbidity and mortality and improves the overall population quality of life.

WHAT IS FUNCTIONAL FOOD?

A food is considered "functional" if it can be satisfactorily demonstrated to affect one or more target functions in the body in a way that is relevant to either a feeling of well-being and health or the reduction of the risk of a disease, beyond adequate nutritional effects – stated by (Diplock *et al.,* 1999) published in European consensus publication. The term "functional foods" refers to medical foods that offer health advantages beyond energy and necessary nutrients.

HISTORICAL SIGNIFICANCE OF FUNCTIONAL FOOD

Even though the phrase "functional foods" is relatively new, the idea behind them dates back to ancient civilizations. Throughout history, societies have acknowledged the health advantages of specific foods and included them in their diets due to their therapeutic qualities. For example in the ancient Indian system of Ayurveda the use of Turmeric, a staple in Indian cuisine, is renowned for its anti-inflammatory and antioxidant properties. But the modern concept of functional food was initially introduced in Japan over fifteen years ago. The Japanese government formally coined the term "functional food" (FOSHU, or Foods for Specified Health Use) to describe foods that have bioactive substances that may enhance health and lower the risk of disease.

PRESENT SCENARIO OF UNDERUTILIZED FUNCTIONAL FOOD

The functional food market is currently one of the fastest-growing segments of the world food business. Foods that provide health advantages beyond just sustenance are becoming more and more popular among consumers. The demand for preventative healthcare, an aging population, and increased health consciousness are the main drivers of this movement. Food security is currently dependent on a small number of staple food crops, fruits, and vegetables. These crops have a variety of environmental, ecological, biological (insect, pest), nutritional, and economic problems, making it impossible for these crops to produce large amounts of food, which creates uncertainty in food security. Therefore, using underutilized fruits and vegetables and other crops is a better choice to meet the world's rising population's demand for food. For example Amaranth is a pseudocereal high in tocopherols, flavonoids, polyphenols, and antioxidants. Functional items having antithrombotic and antihypertensive properties, such as cookies, are made using it. Its leaves and seeds are very nutritious, full of calcium, iron, and magnesium, as well as vitamins A, C, and K. Amaranth is a valuable component in functional meals since its antioxidant effects are strong even after processing. The need for functional foods is rising, particularly in developed nations where people are becoming more aware of their health advantages and have more discretionary means. Due to the rising demand for functional foods, the USA, which now has the largest market for these products worldwide, is predicted to expand by 21% over the next several years, reaching a valuation of USD 8.62 billion by 2015. The desire for energy drinks and dairy products with added nutrients is what is mostly fuelling this increase.

CONSUMER ACCEPTANCE

Increasing consumer awareness about the health benefits and nutritional value of underutilized functional foods is crucial. Campaigns and educational programs that highlight these aspects can help consumers make informed choices. Offering a diverse range of products can cater to different tastes and dietary preferences, increasing the likelihood of consumer adoption. For example, products made from millet or amaranth can be developed into snacks, cereals, and baked goods to appeal to various consumer segments.

PRODUCTION OF FUNCTIONAL FOOD FROM UNDERUTILIZED

The development of processing technology, consumer acceptability, and crop selection are all important steps in the process of turning underutilized crops into useful meals. When done correctly, sun drying is an effective method for maintaining the majority of the nutritional value

of leaves and seeds. Though more costly, freeze drying preserves nutritional and sensory properties better than other techniques. Milling into Flour: Underutilized crops can be ground into flour, which is then used as a foundation for a range of functional foods, including cereals, bread, and pasta. Fine grinding guarantees a smooth texture that is ideal for adding to drinks, including healthy drinks.

LIMITATIONS AND CHALLENGES

A number of underutilized crops face obstacles in their growth and incorporation into mainstream markets due to a lack of thorough study. Further research is required to completely comprehend their nutritional advantages and the best ways to absorb them. It is important to guarantee that underutilized functional foods adhere to food safety rules and quality standards. Furthermore, because of logistical and infrastructure obstacles, incorporating new foods into the current food supply chains might be difficult.

CONCLUSION

In our search for sustainable and healthy food systems, the integration of underutilized plants into the functional food market represents a potential frontier. By taking use of these crops' high nutritional content and positive environmental effects, we can create a more resilient and diverse food system that will both fulfil the world's population's health demands and protect the planet's resources.

REFERENCES

Arai, S., Osawa, T., Ohigashi, H., Yoshikawa, M., Kaminogawa, S., Watanabe, M., & Hirahara, T. (2001). A mainstay of functional food science in Japan—history, present status, and future outlook. *Bioscience, biotechnology, and biochemistry*, *65*(1), 1-13.

Daliri, E. B. M., & Lee, B. H. (2015). Current trends and future perspectives on functional foods and nutraceuticals. *Beneficial microorganisms in food and nutraceuticals*, 221-244.

Emerald Insight. "Consumer acceptance of functional foods: issues for the future." Emerald.com (Emerald).

Frontiers. "Neglected and Underutilised Crops: A Systematic Review of Their Potential as Food and Herbal Medicinal Crops in South Africa." Frontiersin.org (Frontiers).

González-Stuart, A. (2011). Multifaceted therapeutic value of roselle (Hibiscus sabdariffa L.–Malvaceae). *Nutrients, Dietary Supplements, and Nutriceuticals: Cost Analysis Versus Clinical Benefits*, 215-226.

https://ilsi.eu/publication/scientific-concepts-of-functional-foods-in-europe-consensus-document/

https://yucoo.net/roselle-tea/

Institute of Food Technologists (IFT). "Food Science and Technology Solutions to Improve Food and Nutrition Security: Advancing the Use of Underutilized and Biofortified Crops." IFT.org (IFT) (IFT).

Shruthi, V. H., & Ramachandra, C. T. (2019). Roselle (*Hibiscus sabdariffa* L.) calyces: a potential source of natural color and its health benefits. In *Food bioactives* (pp. 169-190). Apple Academic Press.