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Background

Sustainable practices can help ensure food security and a healthy food supply for future generations. A sustainable diet can improve health along with reduced environment...

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EDITORIAL

Accepted on 13 May 2025

**Editorial:
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Poonam Sharma ·
Tahmeena Khan ·
NEELAM PATHAK ·
Swati Sharma

doi
10.3389/fsufs.2025.1624441

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REVIEW

Published on 08 Jan 2025

**Not just fish, but
the future**

Donggu Kang · Ji-Hee
Choi · Yun-Gwi Park ·
Hyung Kyu Choi · Sung-
Hwan Moon · Gi Hoon
Yang

doi
10.3389/fsufs.2024.1506573

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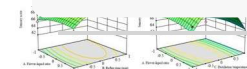
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nutraceutical potential of soybean genotypes of Uttarakhand: implications for the mainstreaming of wild soybean

Pooja Oli · Shailaja Punetha · Zishan Ahmad Wani · Om Prakash Arya · I.D. Bhatt · Dinesh Kumar Singh

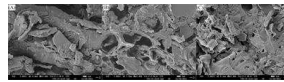


doi: 10.3389/fsufs.2024.1495734

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fibres treated by heating, dual enzymolysis united with acrylic-grafting or hydroxypropylation: effects on the properties of heat-induced egg white protein gel

Chenlong He · Ling Dang · Chen Feng · Yan Li · Liangliang Zhang · Yajun Zheng · Nan Wang · Danhong Liu · Zimo Ye



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3,205

EDITORIAL article

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Editorial: Sustainable Functional Food's Sourcing, Production, and Process

Provisionally accepted



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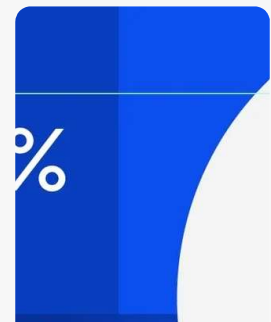
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choices and environmental consciousness has been observed. Functional foods support sustainability at a large scale by reducing waste production, promoting plant-based diets, enhancing nutrition, supporting local economies, and lowering environmental impact, thereby emerging as a bridge between human challenges (nutrition, disease prevention) and the planet. Functional foods are rich in antioxidants, essential vitamins and minerals, phytochemicals, and probiotics; therefore, they were found effective in not only improving public health but also in improving immunity, gut health and reducing the risk of chronic diseases. The purified, extracted compounds recovered from various food sources are termed nutraceuticals, capable of reducing the burden of chemical drugs used in the conventional treatment of health implications. Sustainable practices adopted for the production and processing of food stuff help ensure the food supply for future generations without causing any complications and harm to the environment through waste production and packaging material misuse. In this context, the current Research Topic "Sustainable Functional Food's Sourcing, Production, and Process" was planned, which includes five original articles on sustainable production, processing is received. Those were focused on the production of clean-label food

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people globally, but climate change, overfishing, and pollution threaten their sustainability. Yang et al. in their article emphasized that lab-grown "clean fish" offer a promising, safe, nutritious, and sustainable alternative, reducing the risk factor associated with conventional fish, and potentially supports both human nutrition and marine ecosystem recovery. Sustainable sources and production of food are crucial for deciding the nutritional and medicinal potential of food. Therefore, a wide variety of crops are more nutritious as compared cultivated crops in terms of their phytochemicals, antioxidants, amino acids, vitamins, anthocyanins, and mineral content. To further elucidate this point, Wani et al. compared the nutraceutical potential of Glycine soja, a wild ancestor of cultivated soybean found in Uttarakhand, India, with the cultivated seeds based on their phytochemical and biochemical contents using standard methods. It was found that wild soybean G. soja contains a significant quantity of total phenols, flavonoids, antioxidants, and essential minerals (zinc), vitamins, and amino acids (histidine, isoleucine, leucine, lysine, methionine, threonine) as compared to the cultivated soybean seeds. Sustainable processing of food using green techniques helps enhance the functional properties and applications of foods. In this context, research conducted

modifications significantly improved the physicochemical characteristics such as surface area, water retention, soluble fibre content, and expansion capacity. MBDF-HDEAG and MBDF-HDEH were incorporated into heat-induced egg white protein gels (H-EWPG) to evaluate the functional efficiency. It was found that gel structure and texture were enhanced due to an increase in β -sheet content, hardness, gumminess, chewiness, and water-holding capacity, while reduction in transparency and freeze-thaw dehydration characteristics. By valorising agricultural or food by-products as functional food ingredients, the texture and stability of food can be improved sustainably, along with a reduction in waste generation, as suggested by the findings. The modification of food waste is aligned with clean-label food production and functional food trends. To meet the consumer demand for natural and transparent food additives or ingredients, cleanlabelled products are widely accepted and prioritized. Incorporation of green techniques, such as microwave or ultrasound in the recovery of bioactive compounds further drives this approach towards sustainable practice through advancing functional food innovation and environmentally responsible production. In the same line, Khalid et al. extracted bioactive compounds from *Chenopodium album* using microwave-assisted extraction

stability were improved, whereas lipid oxidation, peroxide levels, and microbial counts were reduced significantly. *C. album* extract confirms its strong bioactivity due to the presence of high antioxidant (TPC, DPPH, FRAP, and ABTS) content.

Considering the high antioxidant potential of *C. album* extracts, it can be used as a natural preservative, replacing artificial additives with plant-based bioactives through green technologies, promoting food quality, safety, and aiding in clean-label product development. The present research topic highlights the capacity of functional foods and sustainable practices in development of functional and clean-label foods conserving the health and wellbeing of the individuals and the planet. Green extraction techniques are instrumental in conserving the bioactive treasure from agro-waste, and further elucidating the potential as functional food additives in enhancing the nutritional quality and shelf life of the food. The natural bioactives are bountiful in health benefits; therefore, these studies collectively demonstrate the alignment between food innovation, health benefits and environmental stewardship through waste reduction and resource optimization. Sustainable approaches contribute to a resilient, healthfocused, and eco-conscious food system for future generations

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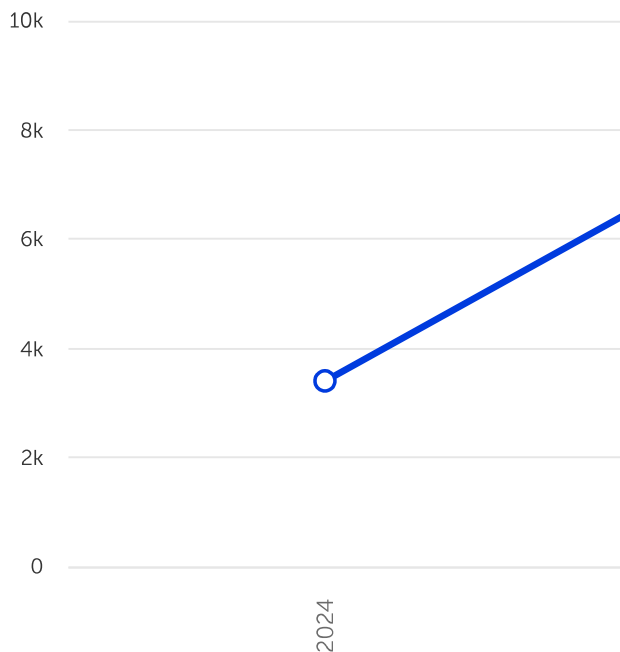
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