frontiers | Frontiers in Sustainable Food Systems

TYPE Editorial
PUBLISHED 21 February 2023
DOI 10.3389/fsufs.2023.1149908

Check for updates

OPEN ACCESS

EDITED AND REVIEWED BY
Samuel Ayofemi Olalekan Adeyeye,
Hindustan University, India

*CORRESPONDENCE
Nitya Sharma
✉ nitya.sharma64@gmail.com

SPECIALTY SECTION
This article was submitted to Sustainable Food Processing, a section of the journal Frontiers in Sustainable Food Systems

RECEIVED 23 January 2023
ACCEPTED 01 February 2023
PUBLISHED 21 February 2023

CITATION
Sharma N (2023) Editorial: Advances in millet research as a sustainable food source. *Front. Sustain. Food Syst.* 7:1149908. doi: 10.3389/fsufs.2023.1149908

COPYRIGHT
© 2023 Sharma. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Editorial: Advances in millet research as a sustainable food source

Nitya Sharma*

Center for Rural Development and Technology, Indian Institute of Technology Delhi, New Delhi, India

KEYWORDS

International Year of Millets 2023, millet [*Setaria italica* (L.) Beauv.], production, varietal influence, climate-smart crop

Editorial on the Research Topic
Advances in millet research as a sustainable food source

With the declaration of International Year of Millets (IYM) 2023 by the United Nations General Assembly at its 75th session in March 2021, an opportunity has opened to raise awareness of, and direct policy attention to the nutritional and health benefits of millets and their suitability for cultivation under adverse and changing climatic conditions. In addition to providing an encouraging signal toward incentivizing millet cultivation, the declaration can also encourage the creation of an enabling post-harvest environment for producers and consumers. According to the recent IYM Communication Handbook and Toolkit (released in December 2022), the year aims to contribute to various UN 2030 Agenda for Sustainable Development, including, Sustainable Development Goal (SDG) 12 (Responsible consumption and production). This paves the way for these climate-smart crops to enter as a mainstream food source, thereby contributing to food as well as nutrition security. This Research Topic encompasses understanding the agricultural practices as well as the recent sustainable processing technology trends including individual technologies, value-added products, nutritional changes involved, and finally the utilization of by-products obtained during pre-and post-harvest processing of millets.

Habiyaremye et al. demonstrated the potential of quinoa and millet to grow well in a variety of agroecological zones in Rwanda, ranging from highland to lowlands. However, results indicated that the yield was favored in Musanze-like environments as compared to Kirehe-like environments, for both quinoa and millet. This highlighted the need for identifying millet and quinoa genotypes with specific adaptation to diverse agroecological zones and growing seasons in Rwanda. The authors also stated the need for further interventions on for establishing of quinoa and millet breeding programs in Rwanda, so as to effectively optimize seed yield in target environments across the country.

García-Parra et al. evaluated the physicochemical and rheological responses of different quinoa cultivars under different environments. The agro-industrial potential of the quinoa cultivars was assessed with respect to their production zones, thereby stating high compositional variability. The authors revealed a significant variance in the protein and starch composition, protein secondary structure, and starch structural conformation, with a varying altitudinal gradient. Similarly, environment-cultivar interaction also significantly affected the viscosity, breakdown, and dispersion setback.

Abeysekera et al. evaluated a range of antioxidant, anti-inflammatory, and anti-lipidemic properties, along with proximate composition, for a different millet types and sorghum varieties cultivated in Sri Lanka. The results indicated that the pigmented varieties comprised of higher biological activities as compared to the non-pigmented varieties. However, the nutritional composition did not vary significantly with the color of the grains. Thus, according to the authors, value-added functional food and nutraceutical from pigmented millet and sorghum varieties can promote prevention and management of non-communicable diseases and their related complications, while improved nutrition can be achieved by just introducing diverse millet and sorghum varieties in daily diets.

Singh et al. reviewed the potential of browntop millet (BTM) as a food source by addressing the following research questions- origin and yield of BTM; physiochemical, nutritional and sensory properties of BTM; comparison of BTM nutritional properties to other major and minor millets available in India; food and non-food uses of BTM; health benefits of BTM; and future scope of research work on BTM. The authors revealed lack of scientific evidence on the nutritional profile and safety aspects of BTM grains, thereby making it a non-preferable crop for research by researchers and also for its use in government/non-government supplementary food programmes and the public distribution system. The authors also mentioned the challenges of availability, accessibility and affordability of BTM grains, hindering its incorporation in daily diets. Further, it was suggested that active participation of policy makers, academia and farmers can help unleash the unrealized potential of this grain. As part of the International Year of Millets 2023, the government of India is promoting popularization of millets through series of lectures/talks, competitions, millet *bazaars* (local markets), provision of millet-based snacks/meals in canteens/cafeterias and research for students, faculty and staff in academic institutions. The authors emphasized the importance of similar awareness generation initiatives/campaigns that may prove to be beneficial in promoting consumption of millets including BTM by the masses at large.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.