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Editorial: Food bioactives: Implications for meeting Sustainable Development Goals

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Editorial on the Research Topic

Food bioactives: Implications for meeting Sustainable Development Goals

This Research Topic of the *Sustainable Food Processing* section of *Frontiers in Sustainable Food Systems* addresses the health implications of bioactive food ingredients and the role that food bioactives can play in helping achieve the United Nations Sustainable Development Goals (UN SDGs). The special topic also addresses the factors affecting the syntheses of bioactive secondary metabolites (e.g., saponins and betacyanins) as well as the impact of processing techniques on the nutritional and bioactive properties of food materials.

A total of seven articles on a variety of topics were published in this issue. The first article, authored by [Acquah et al.](#), reported the influence of various processing techniques on the nutritional quality of bioactive compounds in pulses. The authors reported on how traditional and emerging processing techniques could simultaneously improve desirable and health-promoting properties (e.g., antioxidant, antihypertensive and prebiotic effects) while reducing deleterious effects arising from anti-nutrients in pulses. The authors also discussed how the nutrient and health-promoting compounds in pulses make them suitable for meeting UN SDG #2—“zero hunger”.

The second manuscript, from [Morales et al.](#), is an original research paper investigating the biosynthesis of betalains, a high-value plant pigment, from the edible fruit (or “pitaya”) of *Stenocereus queretaroensis*, a type of cactus widely abundant in South America. The authors employed omic techniques and RNA sequencing methodologies to study the differential expression of genes responsible for the synthesis of betalains in *pitaya*.

[Asen et al.](#) made the third submission and focused on the valorisation of defatted peanut meal by preparing peanut protein concentrates (PPC). The authors showed that defatted peanut meal (DPM) had higher levels of total phenolic content than whole peanut flour (WPF), but WPF contained higher levels of total flavonoid content. The authors also showed that PPC had good nutritional quality and bioactive properties such as metal chelation and free radical scavenging behavior.

The fourth article, published by [Ying et al.](#), presented enzyme-based techniques for producing bioactive peptides from plant proteins to meet the health and sustainability targets of the UN SDGs. The authors discussed the persisting problem of the inherent bitterness of peptides and proposed the use of techniques such as partition chromatography, enzyme treatment, drying, emulsification, and encapsulation by coacervation to overcome this challenge.

In the fifth article, [Owusu-Kwarteng et al.](#), reviewed the diversity and distribution of plant-based alkaline fermented foods, particularly in Asia and Africa, where these foods are common. The authors discussed predominant microorganisms in these foods and the benefits, such as their use to improve digestibility, increase nutrient content, improve flavor and shelf-life, reduce antinutritional components, and confer probiotic effects in plant-based foods.

Manjarres Hernández et al. authored the sixth paper, focussing on the presence, yield, and phenology of triterpene saponins in Colombian quinoa. The authors used several morphoagronomic descriptors and their relatedness to phenology and saponin contents in 30 varieties of quinoa (*Chenopodium quinoa*), arriving at a selection of quinoa genotypes that could be the subject of further improvement programs.

The seventh and last paper in this Special topic is by Wang et al. and it presents the pharmacological properties of compounds found in *Pyracantha fortuneana* (i.e., Chinese firethorn), a plant used in traditional Chinese medicine. The authors provided a comprehensive list of the plant's phytochemicals (200+ compounds) and an assessment of their realized and potential roles in human health.

The guest editors would like to thank the contributors, peer reviewers, and journal handling specialists for their support in making this production a reality. We recommend this special topic to the broad readership of *Frontiers in Sustainable Food Systems* and the entire scientific community.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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