Journal of Food Quality

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Special Issue on
Fermentation and Germination: Current Strategies in Improving Food Quality

CALL FOR PAPERS

Edible seeds, such as pulses (legumes or beans) and cereal grains, are important sustainable food sources for mankind. Year 2016 was declared as "International Year of Pulses" by the 68th congress of United Nation, indicating the significance of edible seeds, especially the pulses, in global food security and human nutrition. Edible seeds are rich in various nutrients and bioactive components, such as carbohydrates, proteins, vitamins, minerals, and antioxidant polyphenols, whereas some antinutritional factors, such as phytic acid, protease inhibitors, lectin, and toxic factors, are also found. Recent studies have shown that food bioprocessing strategies, especially fermentation and germination, in edible seeds, have not only reduced the antinutritional factors but also further improved the physicochemical properties of some nutrients, for instances, starches and proteins, as well as increasing the contents of some nutritional and bioactive components, such as vitamins, γ-aminobutyric acid, bioactive peptides, and antioxidant polyphenols. Besides that, fermented and germinated edible seeds or their derivative products have exhibited enhanced bioactivities, such as antioxidant, anti-inflammatory, antihypertensive, and anticancer effects.

Although fermentation and germination are the promising bioprocessing strategies to enhance the food quality of edible seeds, their effects and potential mechanisms on the changes of nutritional quality, antinutritional factors, bioactive ingredients, and bioactivities are yet to be fully understood. In addition, fermented/germinated edible seeds or edible sprouts may have potential food safety risk. In order to enhance the growth of research related to fermentation and germination of edible seeds and to highlight the importance of fermentation and germination in improving food quality of edible seeds, this special issue is proposed to seek original works addressing the influences of fermentation and germination on nutritional quality, antinutritional factors, bioactive components, bioactivities, and food safety risk of edible seeds. With the initiative in proposing current issue, we hope that research findings published can provide significant information for the extensive use of edible seeds for food production and human health.

Potential topics include but are not limited to the following:

- Effects of fermentation/germination on the contents of nutritional and bioactive components, such as vitamins, γ-aminobutyric acid (GABA), bioactive peptides, and antioxidant polyphenols, in edible seeds, such as pulses/legumes/beans, cereal grains, and other edible seeds
- Effects of fermentation/germination on reducing antinutritional factors, such as protease inhibitors, lectin, and toxic factors, in edible seeds
- Effects of fermentation/germination on the changes in physicochemical properties of carbohydrates, such as starch and polysaccharides, and proteins, in edible seeds
- Bioactivities, such as antioxidant, antidiabetic, anti-inflammatory, antihypertensive, and anticancer effects of fermented/germinated edible seeds, edible sprouts, or related products
- Biochemical mechanisms of fermentation/germination in the changes of nutritional, antinutritional, and bioactive components of edible seeds
- Food safety risk of fermented/germinated edible seeds or edible sprouts

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jfq/fgcs/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
Ren-You Gan, University of Hong Kong, Pokfulam, Hong Kong
ganry@connect.hku.hk

Guest Editors
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gunaratne1050@yahoo.com

Quan-Cai Sun, University of Massachusetts, Amherst, USA
qsun@foodsci.umass.edu

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