INTRODUCTION TO THE FOCUS ISSUE ON PULSES

Pulses, the dry edible seeds of plants in the legume family, include field pea, dry bean, lentil, chickpea, and fababean. The contemporary definition of pulses excludes oilseed legumes and legumes consumed in immature form. Pulses have been nourishing people around the world for thousands of years and are well known as a rich, sustainable source of protein that is high in lysine and therefore complementary to protein from cereals. They also are good sources of energy and dietary fiber, are low in fat, and contain significant levels of vitamins, minerals, and other micronutrients and bioactives. Owing to its intermediate amylose content, starch from pulses is digested more slowly than are most cereal and tuber starches. Whole and split pulses and pulse flours also exhibit relatively high levels of type 1 resistant starch. As a result, the consumption of pulses is beneficial to the management of type 2 diabetes, metabolic syndrome, and obesity, is associated with a reduced risk of cardiovascular disease and cancer, and contributes to overall health and wellness. Pulses are used in whole or dehulled form in canned goods, sweets, soups, and pastes, whereas pulse flours are becoming common ingredients in a wide variety of food and pet food products such as baked goods, pasta and noodles, biscuits, and condiments. There is considerable interest currently in dry and wet fractionation of pulses into starch, protein, and fiber concentrates for use in both food and nonfood applications.

As consumers are becoming increasingly health conscious and focused on a wellness-oriented lifestyle, they are demanding tasty and convenient food products that are plant-based and provide both nutritional and health benefits. In recent years, interest in the use of pulses and their ingredients in food formulation has grown tremendously owing to their nutritional and health benefits and unique functionality, a rise in the incidence of food allergies, and the availability of novel processing technologies.

The United Nations declared 2016 as the International Year of Pulses, which was celebrated through the hosting of scientific and educational activities worldwide, all aimed at increasing consumer awareness of the benefits of pulse consumption and of the role of pulses in sustainable crop production systems. The ultimate goal was increased production and consumption of pulses in both developed and developing countries. This focus issue of Cereal Chemistry captures current research related to pulse composition, processing technologies, nutritional and functional attributes of pulse ingredients, impacts of processing on composition and functionality, potential health benefits, and novel food applications. It also includes review articles on composition, nutritional value and health benefits, traditional and new food uses, determination of protein nutritional quality, evaluation of cooking time, effects of processing on antinutrients, and flavor aspects of ingredients. The response to the call for papers was strong. High-quality papers that could not be accommodated in the focus issue were accepted for publication in regular issues of Cereal Chemistry.

The editors of this focus issue acknowledge Editor-in Chief Les Copeland and the staff at Cereal Chemistry for their invaluable support, assistance, and patience in this undertaking. We trust that readers will find the articles relevant, interesting, and informative.

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