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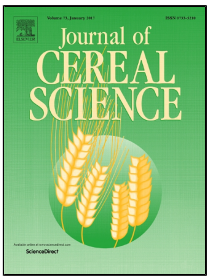

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Understanding functional properties of mildly refined starch fractions of yellow pea

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High lights

- Mild refining of yellow pea leads to fraction rich in starch
- Starch fraction can be described as a phase separated blend of fibres and starch
- The effective starch concentration is influenced by the presence of fibres

Abstract

A route towards the sustainable production of plant based ingredients is the use of milder conditions during fractionation and reduced consumption of chemicals. As a consequence, it becomes more difficult to obtain chemically pure ingredients, instead enriched fractions will be obtained. This paper describes the properties of mildly refined pea starch fractions in comparison to industrially produced and highly refined pea starch. The functional properties investigated are pasting, gel hardness and syneresis upon freezing. The pasting properties of the mildly refined fraction could be well described considering the water binding properties of the main ingredients, which were starch and fibers. The gel hardness was only slightly affected by the presence of fibers in the mildly refined fraction. The fibers mainly acted as a filler. In addition, the mildly refined starch fraction showed a lower syneresis upon freezing, which can be considered as an advantage. The mildly refined starch fraction, and the presence of fibers have slightly different properties compared to highly refined starch. Whether these small differences are advantageous depends on the functionality requested.