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Research article

DEVELOPMENT OF RESISTANT STARCH TYPE-5 AND ITS UTILIZATION IN COOKIE-PREPARATION

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Abstract
The objective of this study was the production of resistant starch type-5 (RS-5), its characterization, and utilization in cookie making. In first part of the study, the effects of starch-fatty acid complex formation (RS-5) between tapioca starch and lauric acid on the structure, digestibility, thermal and morphological properties of tapioca starch were investigated. X-ray diffraction revealed that the RS-5 had a V-type crystalline pattern. FT-IR analysis showed that a distinctive peak at 2846 cm-1 was only observed in RS-5. The resistant starch (RS) content of native starch increased from 22.76% to 28.02% with RS-5 formation. In the second part of the study, the RS-5 was added as a replacement for wheat flour with 10%, 20%, and 30% compared to control sample made with 100% wheat flour in cookie-making. The effects of RS-5 replacement of cookie samples on some physicochemical, estimated glycemic index (eGI) value, physical, and hardness properties were determined. Compared to control cookie, the cookie samples included RS-5 had lower hardness value, higher spread ratio. The eGI value of cookie samples was slightly decreased with the replacement with RS-5. The results demonstrated that the RS-5 has good potential for developing softer cookie with no adverse impact on eGI value.