Quality of gluten-free cookies from germinated brown rice flour

ABSTRACT

Gluten-free food products are becoming popular due to increased consumers awareness on celiac disease. In this study, novel gluten-free cookies were produced from 100% germinated and non-germinated brown rice flour, and the blend of rice flour with 25% potato starch. The quality of the cookies was evaluated in terms of proximate composition, physical properties (diameters, weights, thickness and spread ratio), textural properties (dough and cookies hardness) and sensory attributes. Results obtained showed that germination increased the protein contents from 7.92% to 7.99%, ash from 1.29% to 1.38%, total dietary fibre from 5.27% to 6.13% and fat from 2.24% to 2.98% in germinated brown rice flour. Germinated brown rice dough and cookies had lower hardness value compared to non-germinated brown rice dough and cookies. Addition of potato starch to germinated brown rice flour increased the lightness (79.1-78.8) and yellowness (24.6-24.2) colour of the cookies, as well as the spread ratio of the cookies (8.28-8.37). Sensory evaluation results showed that all the cookies were similarly rated in terms of appearance, colour, aroma and taste, with cookies containing 75% germinated brown rice flour and 25% potato starch having the highest sensory score for texture (6.63) and overall acceptability (6.90). This study showed that the blend of germinated brown rice flour and potato starch can be used for the preparation of quality and acceptable gluten-free cookies.

Keyword: Cookies; Germinated brown rice flour; Proximate composition; Textural properties; Sensory evaluation