

ABSTRACT

Chemical and physical properties of sago starch samples obtained from different manufacturing locations (Trung, Pattanee 1, and Pattnee 2) were studied in comparison with all-purpose wheat flour. Results showed that sago starch was different from wheat flour in chemical compositions, swelling power, and pasting properties; in particular, sago starch had a lower protein content, but higher swelling power. Additionally, sago starch samples obtained from different manufacturing locations were also different from each other in some characteristics. Sago starch from Pattanee (Pattanee 2) was then used to substitute wheat flour in dropped cookies at 0, 20, 40, 60, 80, and 100% substitution levels and the qualities of the cookies were investigated. Results indicated that spread ratio of the cookies increased; while cookies became less dense, less firm and more brittle as substitution levels increased. Results from descriptive analysis showed that intensities of the attributes including surface roughness, dairy product aroma, dry flour aroma, nutty aroma, sweet aromatic, dry flour flavor, sweet aftertaste, fracturability, rate of melt and mouth dryness increased; while those of the attributes including chocolate chip floating, hardness, crispness, denseness, moisture absorption and roughness of mass decreased with increased substitution levels. Additionally, acceptance scores of the cookies decreased as substitution level increased. The highest substitution level that yielded cookies with acceptable qualities was 40%. The effects of wheat flour substitution with sago starch Pattanee 2 in slice cookies at 0, 20, 40, 60, 80, and 100% also were studied. Results indicated that spread ratio of the cookies increased; while cookies became less dense, less firm and more brittle as substitution levels increased. Results from descriptive analysis showed that intensities of the attributes including yellow color, surface smoothness, sweet aromatic, vanilla aroma, dairy product flavor, sweet, fracturability, rate of melt and mouth dryness increased; while those of the attributes including chocolate chip floating, hardness, denseness, moisture absorption and roughness of mass decreased with increased substitution levels. Additionally, acceptance scores of the cookies decreased as substitution level increased. The highest substitution level that yielded cookies with acceptable qualities was 60%.