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Incorporation of dietary fiber on the cookie dough. Effects on thermal properties and water availability

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Abstract

The present work it was analyzed the water mobility by characterizing the thermo-gravimetric analysis of the cookie dough with the incorporation of dietary fibers. The fibers analyzed were: inulin (IN), oat fiber (OF), hi amylose maize starch (RSII) and phosphate distarch-phosphate (RSIV). Four tests were performed: thermo-gravimetric analysis (TGA), pasting profile analysis using water and a solution of 50% sucrose as a solvent, and the study of the ultrastructure of the flour and fiber by SEM and particle size distribution. Changes in the thermo-gravimetric profile were explained by the pasting profile of composites and the ultrastructure of the wheat flour and fibers. OF and IN incorporation changed substantially dough water loss profile and rate. The addition of fibers produced a decrease in the starch pasting profile and inulin showed the highest reduction since less water was available for the hydration of wheat flour starch granules.

Keywords: cookie dough, dietary fiber, TGA, RVA, SEM, particle size

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