Abstract

The aim of this research was to investigate the influence of konjac flour and/or soy protein isolate on physicochemical and pasting properties of selected native starches (wheat, rice and glutinous rice starch). Addition of konjac flour (0.5% and 1%) and/or soy protein isolate (5% and 10%) increased \( p < 0.05 \) water absorption index, water solubility index, swelling power and solubility of all starch pastes but decreased \( p < 0.05 \) their gel strength. The increased yellowness and apparent viscosity were given by mixed starch / konjac flour / soy protein isolate system. The presence of konjac flour and/or soy protein isolate affected the pasting properties of native starches. In case of wheat starch and rice starch, the konjac flour modified their peak viscosity and stability whereas addition of konjac flour and/or soy protein isolate decreased peak viscosity and stability. On contrary, glutinous rice starch / konjac flour system displayed lowered value of peak viscosity whereas the presence of konjac flour and/or soy protein isolate increased peak viscosity.

The effect of mixed wheat starch / konjac flour / soy protein isolate on quality characteristics of reduced-fat chiffon cakes were studied. All reduced-fat chiffon cakes had proximate composition, physical properties and sensory attributes differed \( p < 0.05 \) in relation to the control. The ratio of mixed wheat starch / konjac flour / soy protein isolate at 89.5:0.5:10 was optimum for producing a reduced-fat chiffon cake prepared with 50% replacement of vegetable oil with water.