Czech J. Food Sci.

Guardeño L.M.,
Vázquez-Gutiérrez J.L.,

Hernando I., Quiles A.,

Effect of different rice starches, inulin, and soy protein on microstructural, physical, and sensory properties of low-fat, gluten, and lactose free white sauces

Czech J. Food Sci., 31 (2013): 575-580

The microstructural, physical, and sensory properties of low-fat sauces made with different rice starches, soy protein ,and inulin were analysed in order to obtain sauces suitable for celiac and lactose intolerant consumers. Soy protein and inulin could prevent starch degradation due to their high water-binding capacity. Moreover, protein molecules could diffuse into the starch granules and soluble inulin could interact with starch polymers within the granule. Both effects would hinder amylose

leaching. Inulin provides better diffusion capacity of gelatinised granules and soy protein-starch granule aggregates than sunflower oil, which helps to decrease viscosity in modified rice starch sauces. Soy protein prevents syneresis in the sauces. Inulin affects colour parameters in native rice starch sauces, probably because of inulin and retrograded amylose polymers interactions. Sauces made with sunflower oil and modified rice starch are best rated by consumers. However, according to the statistical analyses, the replacement of oil by inulin could be suitable to prepare low-fat, gluten, and lactose free white sauces when modified rice starch is used.

Keywords:

low-calorie food; nutritive food; microstructure; viscosity; stability

[fulltext]