PHYSICOCHEMICAL PROPERTIES OF MODIFIED RICE POWDER FOR RICE-BASED INFANT FOODS.

Choi J.S., Sohn K.H. Department of Food and Nutrition, Yonsei University, Seoul 120-749, Korea.

The study was carried out to develop rice-based infant foods. Modified rice powder was prepared by thermal treatments with microwave and enzymatic(α-amylase) hydrolysis. Its physicochemical properties were investigated, and the optimum thermal treatment time and enzyme concentrations were determined with the use of response surface methodology. Thermal treatments and enzymatic hydrolysis on rice powder increased D.E. value from 0.25 to 3.81. After modification, water binding capacity, swelling power, solubility, digestibility by α -amylase, light transparency, and paste clarity of the rice powder were increased from 107% to 249%, from 7.80 to 42.52, from 0.04% to 0.89%, from 9.19% to 23.01, from 33% to 42%, and from 2.2% to 3.9%, respectively. On the contrary, gelatinization temperature, viscosity, and retrogradation had showed negative correlation with D.E. value. The results clearly demonstrated the thermal and enzymatic treatment improved the properties of rice based infant food through enhancing carbohydrate absorption and overcoming the high viscous opacity.