

Effect of type-2 resistant starch (high-amylose maize starch) on the physicochemical, nutritional, in vitro starch digestibility and estimated glycaemic properties of Chinese steamed buns

ABSTRACT

Resistant starch (RS) is a portion of starch that resists enzymatic digestion. It is applied in the production of Chinese steamed bun (CSB) to increase daily fibre intake. In this study, the incorporation of type-2 RS known as high-amylose maize starch (HM) (5%, 10%, 15%, 20%, 25% and 30%) and its effect on the rheological and physicochemical properties, nutritional values, in vitro starch digestibility and estimated glycaemic index (eGI) properties of CSBs were determined. High HM incorporation levels increased RS and dietary fibre contents and reduced the pasting viscosities and calorific values of CSBs. The addition of HM-enriched RS also affected total starch content and eventually resulted in the decreased susceptibility of starch to digestive enzymes in vitro. The decrement in starch hydrolysis rate markedly reduced the eGI of HM-containing CSBs. The incorporation of 25% HM into CSBs (eGI = 68.45) could be applicable in developing a nutritious and medium-eGI CSB without jeopardising desirable physical attributes.