ABSTRACT

Effect of Resistant Cassava Starch on Quality Parameters and Sensory Attributes of Yoghurt

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Resistant starch is known to impart a number of health benefits to consumers. It is therefore desirable to increase the content of resistant starch in popular foods such as yoghurt. The current research investigated the effect of cassava resistant starch synthesized by heat-moisture treatment of starch from I92/0057 cassava variety on physico-chemical properties and sensory attributes of yoghurt. Cassava starch rich in resistant starch was incorporated into yoghurt in the proportions of 0, 0.1%, 0.5% and 1%. Corn starch (0.6%) was used as control. Yoghurt was stored at 4oC for 21 days and the effect of starch modification on resistant starch content, viscosity, syneresis, total solids, acidity, lactic acid bacteria count and sensory properties were determined on weekly basis. Applying cassava starch rich in resistant starch into yoghurt in the proportions of 0.5% and 1% had significantly higher ($p \leq 0.05$) resistant starch content of yoghurt reaching 3.40 g/100 g and 5.58 g/100 g on day one and 1.92 g/100 g and 4.47 g/100 g on day 21, respectively. There was a significant correlation ($p \leq 0.05$) between resistant starch concentration and the physico-chemical properties of yoghurt. Yoghurt treated with 1% resistant starch enriched cassava starch had the highest viscosity during cold storage which was determined as 2721.5 mPa s, mPa s, 2650.0 mPa s and 1034.5 mPa s at day 1, day 7, day 14 and day 21 respectively and it had the least syneresis (22.25%). Addition of cassava starch rich in resistant starch significantly increased ($p \leq 0.05$) the total solids content of yoghurt but did not significantly ($P > 0.05$) change the sensory properties of yoghurt. The application of 1% of resistant starch enriched cassava starch as yoghurt thickener produces significant quantity of resistant starch in yoghurt with acceptable sensory and physico-chemical properties.

Keywords: Heat-moisture treatment; Resistant starch; Thickener; Yoghurt