

ABSTRACT

Effect Of Heat-Moisture-Treated Cassava Starch and Amaranth Malt on The Quality of Sorghum-Cassava Amaranth Bread

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Gluten-free batter and bread was prepared from modified cassava starch, sorghum and amaranth flour. Heat-moisture treatment (80°C, 18, 24 or 30% moisture content, and 8, 16 or 24 h incubation) of cassava starch increased its crystallinity, onset pasting temperature and water absorption index; and decreased its swelling power, water solubility index and peak viscosity. Heat-moisture treated cassava starch was made into batter with sorghum and amaranth in the ratio of 50:40:10. The other ingredients, weighed on flour-weight-basis, were water (75%), sugar (6.7%), fat (2%), salt (1.7%), and amaranth malt at 0, 1 or 2.5%. The interaction effect (that is, starch modification x amaranth malt) significantly ($P \leq 0.05$) affected batter consistency. Breads made from heat-moisture treated starch were softer than those containing native starch. The interaction effect (that is, starch modification x amaranth malt) was significant ($P \leq 0.05$) only for the texture profile analysis property of cohesiveness. Further investigation of the effect of heat-moisture treatment showed that the interaction effect (that is, moisture content x incubation time) significantly ($P \leq 0.05$) affected only the Texture Profile Analysis properties of hardness and chewiness.

Key words: Amaranth, cassava, gluten-free bread, heat-moisture treatment, malt, sorghum.