ABSTRACT

Synthesis and *In Vitro* Digestion of Resistant Starch Type III from Enzymatically Hydrolysed Cassava Starch

Calvin Onyango & Christopher Mutungi

Resistant starch type III (RS III) was synthesised from cassava starch by autoclaving followed by debranching with pullulanase, at varied concentrations (0.4–12 U g)1) and times (2–8 h), and recrystallisation ()18 to 90 C for 1–16 h). The highest RS III yield (22 g⁄100 g) was obtained at an enzyme concentration of 4 U g)1 after 8 h incubation, followed by recrystallisation at 25 C for 16 h. Varying the recrystallisation conditions indicated that higher RS III yields (30–35 g⁄100 g) could be obtained at 90 C within 2 h. Thinning cassava starch using a-amylase prior to debranching using pullulanase did not further increase the RS III content. In vitro digestion data showed that whereas 44% RS III was digested after 6 h, the corresponding value for cassava starch was 89%.

Keywords: a-Amylase, cassava starch, in vitro digestion, *pullulanase,* resistant starch type III.