

Enhancing enzymatic resistance of green Saba banana flour by pullulanase debranching and autoclave-cooling treatment

ABSTRACT

Flour or starch with low digestibility has long known to demonstrate beneficial physiological effects to human health. Various methods had been employed to enhance the indigestible starch content of the starch/flour from various botanical origin. In the present study, green Saba banana flour was subjected to pullulanase debranching and autoclave-cooling cycles with the aim to investigate the influence on its resistance toward digestion. These two treatments in general resulted in greater enzymatic resistance of the flour but affected the digestion profile of the flour in different way. Debranching produced more amylose and hence promoted formation of highest resistant starch (RS) in the flour ($p < 0.05$). On the other hand, autoclave-cooling treatment, either alone or in combination with pullulanase debranching were predominantly effective in enhancement of SDS content ($p < 0.05$). When combined with autoclave-cooling treatment, debranched resultant RS was partially degraded and converted to SDS. Even though the enzymatic resistance of green Saba banana flour was improved by the treatments employed, the glycaemic index (GI) of the modified flours was still considerably high. Future work to further increase the enzymatic resistance of green Saba banana flour, with the aim to lower the GI is still necessary.