Does Resistant Starch Content Vary with Processing? : A Study with Selected Traditional Rice Varieties of Sri Lanka

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Resistant starch (RS) includes starch and its degradation products that resist digestion in humans and confer many health benefits. Rice being our staple food and with the current interest in consuming traditional rice varieties, the objective was to determine the change in RS content of six traditional rice varieties namely Godaheenati, Batapola el, Dik wee, Dahanala, Unakola samba and Hangimuththan when processed differently as raw under milled, raw polished (4%) and parboiled. The RS content of cooked and uncooked differently processed flour (n=6) was determined by enzymatic assay with amyloglucosidase/α- amylase (Megazyme assay kit). Results are expressed as percentages and significances calculated (SPSS statistic package) at 95% confidence interval. RS content of the raw cooked varied between 2-6% in the order of Dahanala>Unakola samba>Hangimuththan>Batapola el>Godaheenati>Dik wee. Raw polished cooked varieties had less (1-3%) in the order Batapola el>Unakola samba>Hangimuththan>Godaheenati>Dik wee. Increased (p<0.05) RS was observed in parboiled cooked varieties (6.5-10%) in the order Dik wee>Hangimuththan>Goda heenati>Dahanala>Unakola samba>Batapola el. Thus the RS contents of differently processed cooked rice increased (p<0.05) in the order of raw polished, raw and parboiled. However, all uncooked varieties had(<1.1%) significantly lower (p<0.05) contents. RS contents of cooked raw and raw polished varieties were significantly lower confirming the contribution made by retrograded starch to RS due to parboiling process. Thus parboiled varieties could be recommended for consumption by individuals seeking to decrease the energy intake.

Keywords: Resistant starch, Raw rice, Parboiling, Milling