

Resistant Starch Contents of Selected Rice (*Oryza sativa* L.) Varieties of Sri Lanka

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Rice is the staple food of Sri Lankan population. Resistant Starch (RS) provides health benefits such as improvement in carbohydrate and lipid metabolism and reducing the risk of diabetes and cardiovascular diseases. This study was aimed to analyze RS contents of different varieties of rice available in the Northern Province of Sri Lanka. An enzyme method using amyloglucosidase and pancreatic α -amylase enzymes was used to estimate the RS and non-RS content. The starch was hydrolysed by acid and the reducing sugar was estimated by DNS method to determine the total starch content. Among the rice varieties selected, eight were improved varieties namely, *Bg 250*, *Bw 351*, *At 362*, *Bg 366*, *Bg 406*, *Ld 365*, *Ld 356* and *Bg 361* and seven were traditional varieties namely *Murungagayan*, *Suwandal*, *Periyavellai*, *Pachchaperumaal*, *Thattuwee*, *Kallundaai* and *Moddakaruppan*. RS contents of the rice varieties ranged from 17.69 \pm 0.18 to 27.87 \pm 0.32%. Traditional rice varieties had RS contents in the range from 20.48 \pm 0.18 to 27.87 \pm 0.32%. Improved rice varieties had RS contents in the range from 17.69 \pm 0.18 to 22.52 \pm 0.30%. Mean RS content of traditional rice varieties (23.97 \pm 2.1%) was higher than that of improved rice varieties (19.71 \pm 0.67%). There were significant differences ($p < 0.05$) in the RS contents of all varieties. The *Pachchaperumaal* variety contained the highest (27.87 \pm 0.32%) and *At 362* variety contained the lowest (17.69 \pm 0.18%) amount of RS. It can be concluded that the RS content varied among the tested rice varieties and the traditional rice varieties had higher RS content than improved rice varieties. Thus, the traditional rice varieties can be included in developing value added novel functional foods and can be useful for the dietary management of patients with diabetes and coronary heart diseases.

Keywords: Improved rice varieties, Resistant starch, Total starch, Traditional rice varieties