

Effect of ion (NaCl) interaction on resistant starch content of selected cooked tubers

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Resistant Starch (RS) is a type of bioactive compounds attracting consumer's interest, especially those at risk of diabetes, obesity and other related health problems. A study was conducted to find out the effect of ion (NaCl) interaction on resistant starch content of selected cooked tubers such as potato (*Solanum tuberosum*), cassava (*Manihot esculenta*) and elephant foot yam (*Amorphophallus paeoniifolius*), which were commonly consumed in Jaffna, Sri Lanka. Initially preliminary trials were conducted to find out the optimum temperature, time and salt (NaCl) content during conventional cooking for the selected tubers. Then tubers were cooked with and without salt under optimum conditions (100 °C, 15 minutes and 2% salt) and their resistant starch and nonresistant starch content were measured using standard enzyme hydrolysis method using α -amylase and amyloglucosidase. Results of the above study revealed that resistant starch content of selected raw tubers was significantly ($p>0.05$) higher than their respective cooked tubers. Resistant starch content of potato, cassava and elephant foot yam samples cooked without salt were 5.58 ± 0.23 , 4.13 ± 0.27 and 5.89 ± 0.36 g/100g dry sample respectively and the respective tubers cooked with salt were 6.07 ± 0.50 , 3.78 ± 0.22 and 4.93 ± 0.09 g/100g dry sample. Ion (salt) interaction has increased the resistant starch content in cooked potato and decreased the content in cooked cassava and elephant foot yam. There are no significant differences ($p>0.05$) on the resistant starch content of potato and cassava cooked with salt and without salt. But the resistant starch content of the elephant foot yam cooked without salt was significantly ($p>0.05$) higher than respective samples cooked with salt. Therefore higher level of resistant starch content of the cooked tubers can be maintained by adding minimum level of salt.

Keywords: Cooked tubers, Ion interaction, Resistant starch, Salt.