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Effect of boiling on carbohydrate profile, starch digestibility, and glycemic index of Purple Yam (*Dioscorea alata L.*) powder

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Background: Potential of root crops as a possible intervention in the prevention and control of non-communicable diseases had been the focus of different studies. The carbohydrate profile, *in vitro* digestibility of starch, and the estimated glycemic index of purple yam flours as affected by boiling were determined in this study. Methodology: Three purple yam varieties, namely Pinaupo, Tagalog/Hinaligi, and Kinampay were processed into flour. Each variety was divided into two groups: one was processed raw and, the other was processed after boiling. The flours were analyzed for carbohydrate components and their glycemic indices. The association of the carbohydrate components to the glycemic index was also determined. Results: The flours from the three varieties have 6.60%-6.97% total sugars. Only fructose (0.68%-0.84%) and sucrose (1.18%-2.09%) were observed in the samples. The



flours have reported values of 81.76%-83.76%, 29.78%-31.27% and 10.56%-47.4% for total starch, amylose, and resistant starch content, respectively. The reported total dietary fiber was 4.49%-5.00%. The flours have moderate GI level with values 60.93%-68.65%. Of the components analyzed, GI had a very strong positive association with the reducing sugar component (0.95), total starch component (0.87), amylose component (0.89), digestible starch component (0.92), and a very strong inverse association with resistant starch (-0.92). Conclusion and Significance: The boiled purple yams samples prior to processing into flour increased the digestible starch component which resulted to the increase in the glycemic index values. But overall, the purple yam flour still fell in the medium glycemic index food category. Thus, consumption only increases the blood glucose response level on a moderate amount and can still be a recommended root crop consumption for people with diabetes.