

Development of Low Glycemic Index Food Products Incorporating Sorghum, Moringa Oliefera, Nigella Sativa for Type II Diabetic Patients

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Abstract—The global epidemic of diabetes mellitus has necessitated the need to develop novel strategies to prevent and treat this lifelong condition. In spite of this emerging epidemic, there is overwhelming evidence that diabetes can be prevented and its complications can be avoided. The present study aimed to develop low glycemic index food products incorporating Sorghum flour, Moringa oliefera leaves powder, Nigella Sativa for Type II diabetic patients (age group 30-50 years) and to evaluate the organoleptic score of the products based on Hedonic and Composite rating scale. The Glycemic Index is defined as the area under the glycemic response curve, after consumption of 50 g of available carbohydrate from a test food. Sorghum, Moringa Oliefera and Nigella Sativa impart decreased intestinal glucose uptake and slow gastric emptying time leading to a low glycemic index response. Two different variations of Tortilla Chips namely ‘Sorghum, N. Sativa Tortilla Chips(T1) and Sorghum, Moringa Oliefera, N.Sativa Tortilla Chips(T2) were assessed organoleptically. A dip rich in Moringa Oliefera leaves powder was also developed as an accompaniment. The organoleptic evaluation was done by a team of 50 trained panelists and 50 untrained panelists. The tortilla chips T1 and T2 along with Moringa dip were tested in the lab for total phenolic content and total flavanoid content accompanied by microbiological testing and nutritional profile. The overall acceptability score of T2 was 8.04 ± 1.19 and was more acceptable than T1. The Moringa dip was also accepted with an overall acceptability score of 8.04 ± 1.19 .

Keywords: Diabetes Mellitus, Glycemic Index, Sorghum, Moringa Oliefera, Nigella Sativa, Tortilla Chips, Phenolic Content, Flavanoid Content.