



Title : Postprandial Glycemic Response of Mango in Individuals with Diabetes

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Introduction:

Introduction: In diabetic condition, the metabolism of CHO is completely deranged. There are many food restrictions and taboos controlling the food intake in these subjects. Mango, the most popular seasonal fruit, juicy and sweet in taste with high free sugar content is strictly restricted for a person with diabetes.

There are many types of mangoes, with an average moderately high Glycemic Index of 60 and are believed to raise the blood sugar levels and therefore, generally not recommended for people with type 2 diabetes. The aim of the study was to assess and the postprandial glycemic impact of this sweet mango fruit as compared to standard food bread in individuals with type 2 diabetes and paired normal subjects, using equiquantity based comparison using the concept of GI_{food} .

Methodology:

Finger tip capillary blood samples of enrolled type 2 diabetic subjects without any other clinical complication and paired clinically healthy adults were collected at fasting, 30, 60, 90 and 120 min post consumption of selected quantity of standard (white bread) or test food (alphonso mango) on different occasions. The incremental area under the curve (IAUC) and GI_{food} value were calculated. The results are expressed in Mean + SE and statistical analysis was performed using students paired t test.

Result:

Mango exerted a significantly lower peak response in glycemic impact, as compared to standard food white bread in both the study groups (diabetic $p < 0.001$, normal $p < 0.05$). The peak glycemic response of mango was reached early [30min] indicating a faster digestion and utilisation of sugars from mango as compared to bread which is composed of complex carbohydrates. The glycemic IAUC of mango was 3 times lower than bread in both the study groups (diabetic $p < 0.01$, normal $p < 0.005$).

Conclusion:

The study clearly shows that fruits that are perceived to be sweet and associated with a high GI value do not lead to elevated postprandial glycemic levels. Mango, a good source of soluble fibre, an excellent source of antioxidants like vitamin C and beta carotene and a good source of vitamin B₆ along with other phytonutrients may have immense health benefits, especially for subjects with oxidative stress related disorder like diabetes.

References:

- Guevarra M.T.B and Panlasigui L.N (2000). "Blood glucose response of diabetes mellitus type II patients to some local fruits." *Asia Pacific Journal of Clinical Nutrition* 9(4):303-308
- Edo A.E, Eregie A, Adediran O.S and Ohwovoriole A.E (2011). "Glycemic response to some commonly eaten fruits in type 2 diabetes mellitus." *West African Journal of Medicine* 30(2):94-98
- Yusof B.N.M, Talib R.A and Karim N.A (2005). "A study of blood glucose response following temperate and tropical fruit ingestion in healthy adults." *Malaysian Journal of Nutrition* 11(1):47-57
- Foster-Powell K, Holt S.H.A and Brand-Miller J.C (2002). "International table of glycemic index and glycemic load values: 2002." *American Journal of Clinical Nutrition* 76(1):5-56