

## **VALUE ADDED HYPOGLYCAEMIC PRODUCTS**

**Ms. Farhat Bai**

PG Department of Home Science  
KAHM Unity Women's College, Manjeri.

**Dr. N. V. Fatimathu Zuhara(Co-author)**

Assistant Professor, PG Department of Home Science  
KAHM Unity Women's College, Manjeri.

### **Introduction**

Diabetes is a group of metabolic disorders characterized by a chronic hyperglycaemic condition resulting from insufficient action of insulin. Apart from medication and exercise, dietary modification is an inevitable part of management of diabetes. Utilization of the functional properties like the hypoglycaemic effect of different foods will be of use in the diets of diabetic patients (Raju et al., 2001). Ulfath et al. (2016) suggests that choosing low- GI foods in place of conventional or high-GI foods has a small but clinically useful effect on medium-term glycemic control in patients with diabetes.

It has been shown that low glycaemic index (GI) foods and low glycaemic load (GL) may reduce metabolic risk factors including postprandial hyperglycaemia, insulin resistance and impaired haemostasis, as well as improve glycated Haemoglobin (HbA1c) (Yang et al., 2019). The right type of food, which helps to reduce the symptoms of diabetes and its related complications, is of great importance and awareness must be created about it. Such a food product should preferably be 'ready to eat', palatable and low in cost (Raju et al., 2001).

## **Value Added Muffins**

In the study of Ulfath et al. (2016), they developed value added edible muffins with 3 variations composed of key ingredients sweet potato and finger millet which would aid in preventing elevated glycemic level in an individual. These products were chosen as the consumption of finger millet diets result in significantly lower plasma glucose levels due to the higher fiber content of finger millet, together with the rich in vitamin A and beta-carotene of the sweet potato offers complex carbohydrates along with antioxidant nutrients which make the starchy sweet potato rank low on the glycemic index scale.

## **Foxtail Millet Diabetic Mix**

Jali researched on efficacy of value added foxtail millet diabetic mix in the management of diabetes and dyslipidemia in type 2 diabetic patients. It reached to a conclusion that daily consumption of 80 gm of foxtail millet diabetic diet by diabetic volunteers lowered the HbA1c (19.14%), fasting glucose (13.5 %), and Homocysteine (0.85%) concentrations and increased the insulin (1-9%) in their blood.

## **Banana Blossom Incorporated Nut Chocolate**

Komal and Kaur (2019) conducted a study on Development and evaluation of value added products on Banana blossom incorporated Nut chocolate. There were number of studies conducted in vivo and in vitro showed the health benefits of the consumption of Banana Blossom. Although the Banana Blossom is highly valuable fiber content, the consumption of cooked Banana flower is believed to be beneficial to diabetic patients. The contents in banana flower are rich in antioxidant property and are good source of minerals such as magnesium, iron, copper and potassium.

## **Kodo Millet Based Products**

In the study of Neelam et al. (2013) on Evaluation of hypoglycaemic properties of kodo millet based food products, two recipes of kodo millet incorporated idli and Sewai upma were standardized and evaluated. The data from the study demonstrates a decrease in mean glucose level and GI of Idli and Sewai upma when incorporated with kodo millet (60 %). The values of GI in the Kodo based products were low (KodoIdli 3.98 and Kodoupma 3.53).

## **Millet Based Mix**

Geetha et al. (2020) presented a study on assessment of the glycemic index of the traditional recipes prepared from developed millet based food mix and their effect on pre - diabetic subjects. Millet based food mix was prepared by using the ingredients viz., finger millet, little millet, defatted soyaflour, whole green gram, fenugreek seeds, flax seeds, Curry leaves, bitter gourd and skimmed milk powder. The results suggested that developed millet based food mix had potential role in lowering the FBS and HbA1c indicating the preferable option of such food mix in diabetics.

## **Teff Grain Incorporated Bread**

A study conducted on Evaluation of wheat breads supplemented with Teff Grain flour by Mariam et al., (2009) was to assess the effect of Supplementations of teff grain flour to wheat flour at 0, 5, 10, 15 and 20% levels on organoleptic and nutritional evaluation of the supplemented bread. It may be concluded that breads supplemented with teff flour, up to a 5% level, are organoleptically and nutritionally acceptable. However, high levels of teff flour resulted in inferior changes in organoleptic characteristics. Relative to white wheat, teff has a low glycemic index and thus better suited for diabetic patients (Wolter et al., 2013).

## **Colocasia Leaves Incorporated Products**

Rani et al. (2016) conducted an investigation on Organoleptic evaluation of dried colocasia leaves incorporated in palak pakore and kachori. Dried Colocasia leaves was incorporated in different ratios in Kachori (5%, 7% and 10%) and Palak Pakore (5%, 7% and 10%) and then evaluated. On the basis of scores of acceptability, 5% dried colocasia leaves incorporated Kachori and pakore were most acceptable.

Thombare and Farzana, (2018) conducted an experiment on organoleptic Evaluation of Dried Colocasia Leaves powder Incorporated in Kharapara and Puri. Dried Colocasia leaves powder was incorporated in different ratios in Kharapara and Puri (0%, 4%, 5%, 6% and 7%). Based on the scores after the sensory evaluation of the recipes, Kharapara (6%) and Puri (6%) were selected for nutrient analysis and shelf – life study. It was then concluded from the studies that dry colocasia leaves powder can be used up to 6 to 7 per cent for value addition of different products. Gupta & Kumar (2018) previewed that colocasia leaves have the ability of anti-diabetic, anti-hypertensive, immuno-protective, neuro protective, and anti-carcinogenic activities.

## **Conclusion**

Hypoglycaemic diet will help to manage diabetic symptoms and prevent blood sugar from dropping. It is important to develop regionally available low glycemic index foods as it had a potential role in lowering the blood sugar levels, thus indicating a suitable option of such food for diabetics.

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