

## A study on hypoglycemic effect of mango leaves (*Mangifera indica* Linn.) on type II diabetic patients (30-70 years)

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### ABSTRACT

*Mangifera indica* Linn leaves have been claimed to possess anti-diabetic properties by many investigators. Antioxidant is the property of phytochemicals which are non-nutritive plant chemicals that have protective or disease preventing properties because they function as free radical scavengers. Mango leaves possess a potential hypoglycemic effect as these influence blood sugar level, insulin level and mango leaves containing tannins as gallic acid (antioxidant) protects the beta cells from killing themselves thus protecting beta cells from apoptosis. Considering the beneficial effect of mango leaves powder, the present study was undertaken to study the effect of mango leaves powder on blood glucose levels and insulin levels. 50 respondents were selected for the study through purposive sampling technique residing in Modinagar and Muzaffarnagar and divided into two groups, experimental and control. General profile, medical history, type of treatment, dietary history, life style pattern, anthropometric measurements, biochemical assessment clinical assessment and dietary pattern (Nutrient intake through 3 day food recall method for 3 consecutive days) were assessed through questionnaire cum interview method. After collecting all the information from the respondents, 5g/day mango leaves powder was distributed only to experimental group for 3 months. After intervention of mango leaves powder, anthropometric parameters, biochemical parameters (both in fasting and post-prandial state), clinical symptoms (polyuria, polyphagia, polydypsia, eye complaints etc.) and dietary pattern (nutrient intake through 3 day food recall method for 3 consecutive days) were assessed. The study concluded that intervention of mango leaves powder, which have antioxidants as tannins (Gallic acid) 15 per cent, fibre 1.6 per cent and  $\beta$ -carotene 490 I.U. per 100 g of mango leaves powder on a daily basis effectively reduced weight, elevated blood glucose level and relief in symptoms of type II diabetes mellitus patients.

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**Key Words :** Hypoglycemic effect, Mango leaves, Diabetic patients

### INTRODUCTION

Mango leaves possess a potential hypoglycemic effect as these influence blood sugar level and mango leaves containing tannins as gallic acid (Antioxidant) protects the beta cells from killing themselves thus protecting beta-cells from apoptosis and cures the disease pancreatitis which produces insulin and when it becomes inflamed and scarred, it may not be able to produce enough of insulin hormone.

### METHODOLOGY

Mango leaves powder was prepared for diabetic type-II patients for that mango leaves were washed, dried in shade and then ground to a fine powder and stored and 5 g/ day was supplemented to type-II diabetic patients *i.e.* 1 teaspoonful (2.5 g) of this powder in the morning and evening.

Fifty respondents were selected for the study and

divided into control (n=25) and experimental (n=25) groups (Table A).

#### Dietary history:

Food habits, consumption of fruit and beverages, nutrient intake through 24 hour recall method for 3 consecutive days.

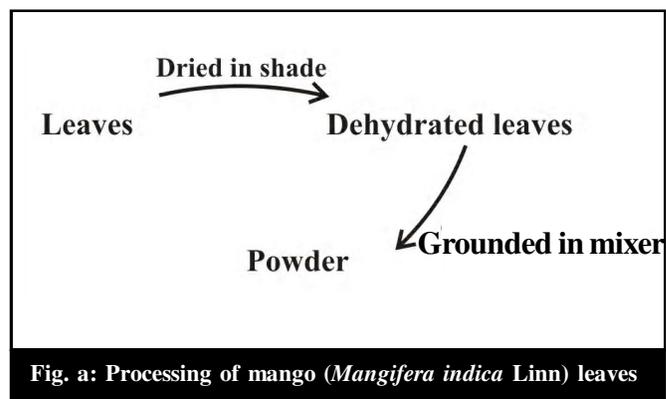


Fig. a: Processing of mango (*Mangifera indica* Linn) leaves