

What is Vijaysar Wood?

1. *Pterocarpus marsupium* Roxb. (from the family Leguminosae) is a large tree that commonly grows in the central, western, and southern parts of India and in Sri Lanka.
2. In Hindi, *P. marsupium* is known as Bibla (Vijaysar or Bijasar), while in English it is called Indian Kino because it was primarily cultivated as a source of kino.
3. Kino is the dried exudation obtained by incising the trunk. Kino has been used as an astringent, administered in diarrhea. The gum has been used for toothache; the bark has been used for diarrhea, heartburn, and in the management of diabetes; and the leaves have been used for boils, sores, and skin diseases. The heartwood, a durable and termite resistant material, has been used in the management of diabetes and hyperlipidemia.

Chemistry of Vijaysar wood (*Pterocarpus Marsupium*)

1. Several flavonoids and their derivatives have been isolated from various parts of the plant.
2. In general flavonoids or "bioflavonoids" are valued for their diverse health benefits including antioxidant / anti-inflammatory action, beneficial cardiovascular effects and antimicrobial properties.
3. *Pterocarpus marsupium* is a rich source of polyphenolic compounds. The key compounds include the diaryl propane derivative, propterol; the stilbene, pterostilbene; the hydrochalcone, pterosupin; the benzofuranone, marsupsin; the flavanoid, liquiritigenin and the catechin, (-)-epicatechin.

Vijaysar Wood (Bot. name- Pterocarpus marsupium)-Clinical Studies

(Extract of the research and clinical studies document.)

Source: - The Indian Council of Medical Research, India

The Indian Council of Medical Research undertook an anti diabetic Phase II open trial at four centers across India using Vijaysar (Pterocarpus marsupium). Vijaysar was tested in newly-diagnosed non-insulin dependent diabetes mellitus (NIDDM) patients between 35 and 60 years of age for 12 weeks. Ninety-three of 223 patients admitted for the therapy were evaluated for 12 weeks. The parameters used for evaluation were blood glucose levels and glycosylated hemoglobin (HbA1c). The main findings for the study are summarized below and in Figure 1:

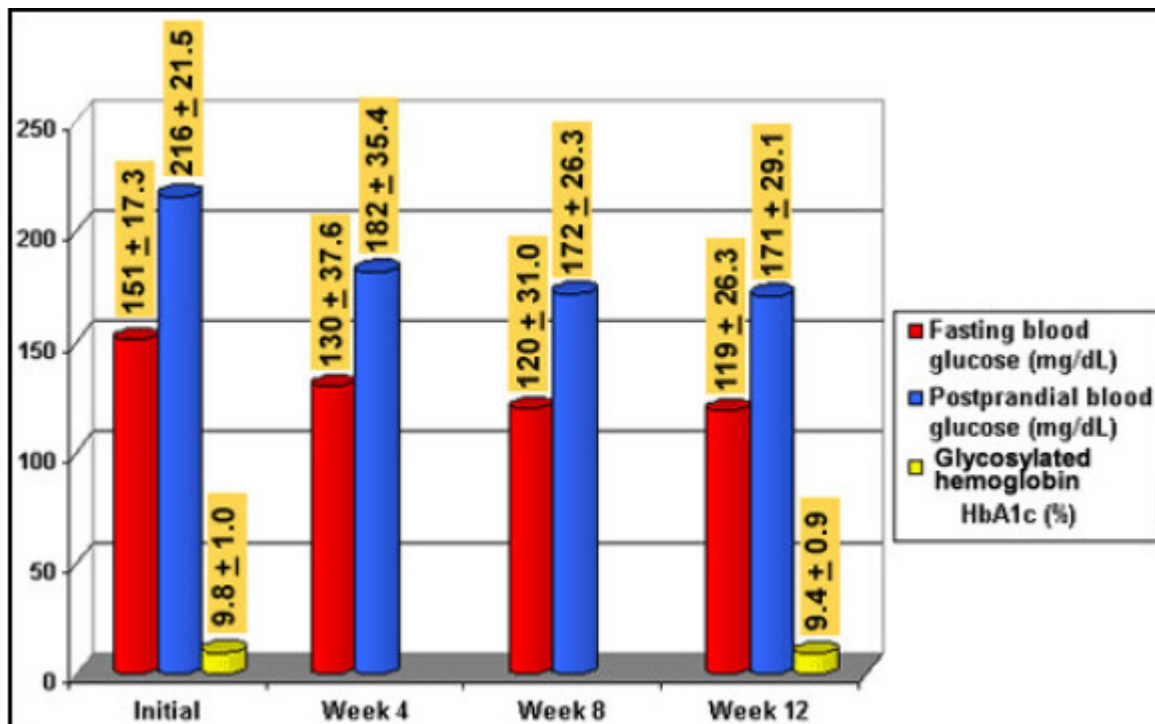


Figure 1. Mean blood glucose and HbA1c levels of patients during 12- week Vijaysar treatment. (No. of patients: Fasting blood glucose = 93, Postprandial blood glucose = 93, & HbA1C = 67)

Of the three cardinal symptoms for diabetes, a marked reduction was observed for polyuria (the production of large volumes of urine). The other two symptoms, symptomspolyphagia (gluttonous excessive eating) and polydipsia (abnormally intense thirst), initially observed in 21 and 7 patients respectively, disappeared in 14 and 7 patients, respectively by 12 weeks. Control of both fasting and postprandial blood glucose was achieved in 67 of 93 newly diagnosed or untreated NIDDM patients. Approximately 73% of these patients required a daily dose of 2 g of Vijaysar. Only 10% of the patients required a higher dose of 4 g per day, and this dose was well tolerated. No relationship was found between the dose of Vijaysar and the changes observed in the HbA1c levels. Only 7% of the patients attained control of HbA1c by week 12. None of the patients reported any side effects.

The Indian Council of Medical Research concluded that Vijaysar (*P.marsupium*) be used in the treatment of newly diagnosed or untreated NIDDM patients. In addition they suggested that the treatment be restricted to mild diabetics (those that have blood glucose levels between 120 and 180 mg/dL and postprandial blood glucose levels between 180 and 250 mg/dL). Another study on 20 patients with maturity onset diabetes mellitus was performed. The patients were divided into two groups- Group A and Group B.

Group A consisted of 10 patients who received Vijaysar (*P. marsupium* heartwood) granules (5 g tid after breakfast, lunch, and dinner). Group B consisted of 10 patients who had received conventional drugs such as chlorpropamide, tolbutamide, and phenformin before receiving the Vijaysar granules. The study was conducted for 3 weeks. Significant reductions in the

fasting and postprandial blood sugar levels were observed after treatment with Vijaysar that were comparable with the conventional drug therapies. Subjective improvements concerning reduction of appetite, polyurea, polydipsia, burning pains in limbs and general weakness were observed in a majority of cases within an 8-10 day period, and blood sugar levels were controlled at the end of 2 weeks.

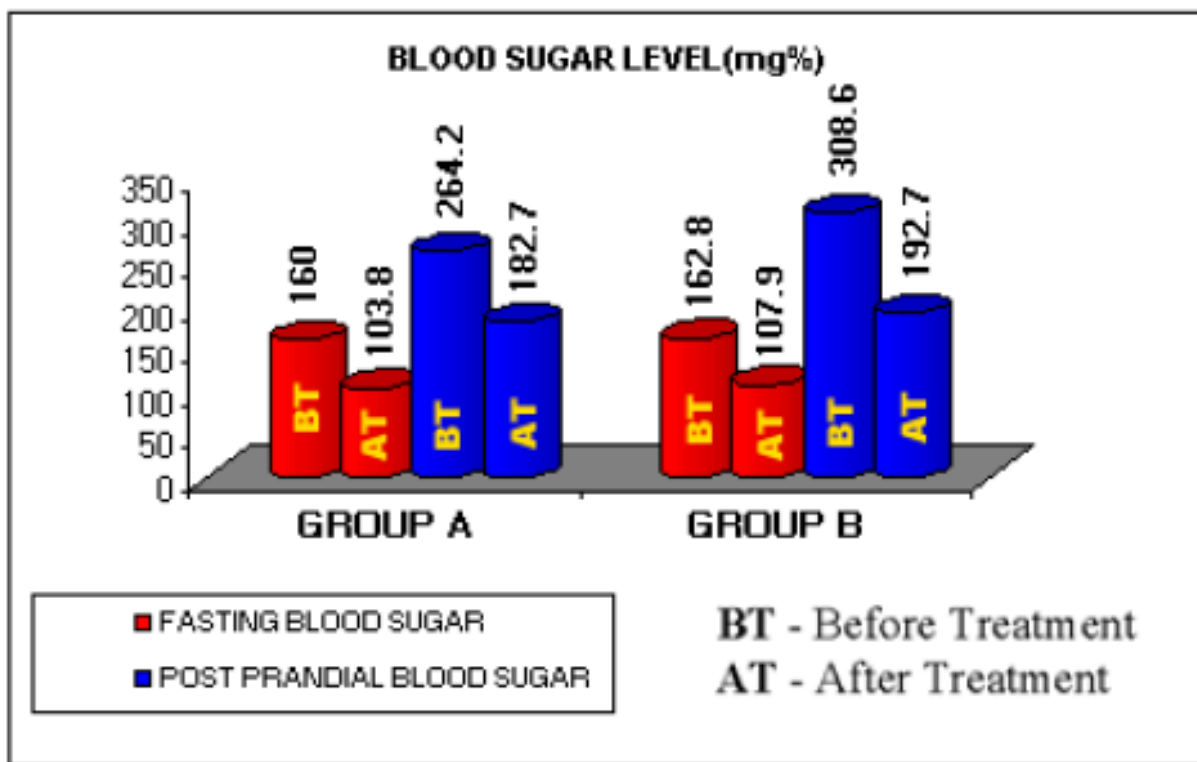


Figure 2. Reduction of Fasting and Post Prandial Blood Sugar Level of diabetic patients during a 3 week treatment, Group A: Vijaysar (Aqueous extract) granules treated Group B: Vijaysar treated after withdrawal of oral hypoglycemics

After the 12 week treatment, significant reductions in both the fasting and postprandial blood sugar levels were observed in diabetics taking oral hypoglycemics as well as newly diagnosed diabetics. (Figures 2) The treatment satisfactorily controlled 90% of the newly diagnosed diabetics. Approximately and 80% and 20% of diabetics taking oral hypoglycemics were able to reduce the

dosage of their medications or cease taking their medication, respectively. The treatment was well tolerated by all patients, and no harmful effects were reported.

Another research group compared the antidiabetic effects of two ayurvedic preparations- Gurmur, (a combination of the leaves of *Gymnema sylvestre*, *Aegle marmelos*, and *Azadirachta indica*) and Bija wood water (*Pterocarpus marsupium* water), in 30 diabetic patients aged 40-65. The Gurmur preparation significantly reduced the post meal blood sugar levels to normal levels. *P. marsupium* exerted an antidiabetic effect, but unlike the Gurmur preparation, the *P. marsupium* water exhibited a slow and steady hypoglycemic activity.

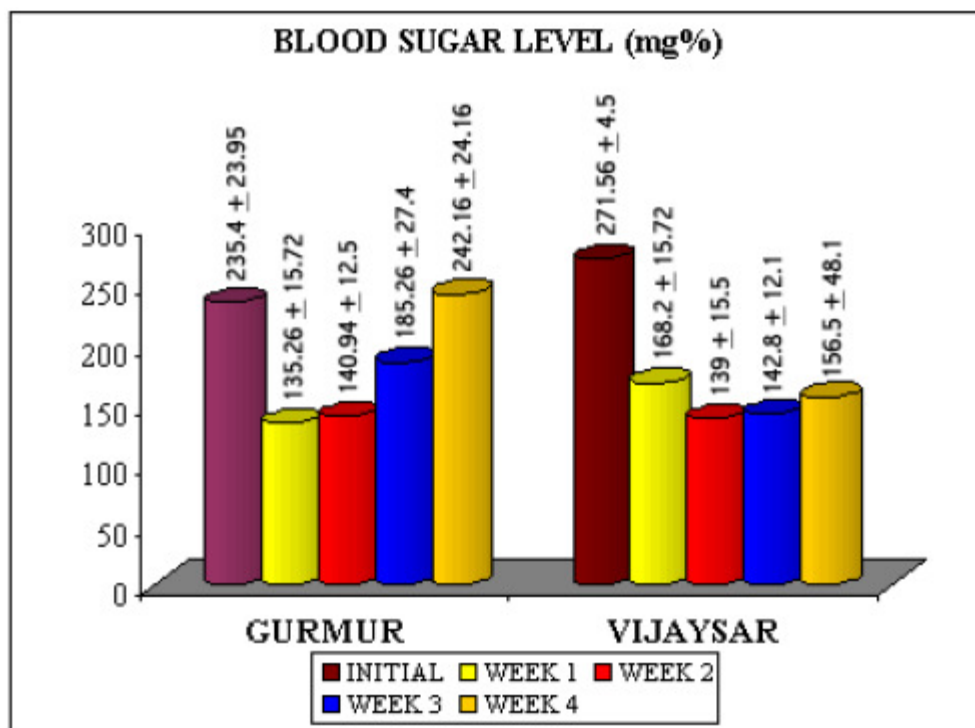


Figure 7. Post meal blood sugar level (mg%) in diabetic patients under treatment of Gurmur

Preparation and Vijaysar wood water for one month ($p < 0.01$)⁶

* Gurmur preparation discontinued after 7 days.

A subsequent study on two drugs - Saussurea lappa and P. marsupium were administered separately to 2 groups of patients 500 mg and 100 ml (decoction) each for 30 days. The study reported favorable results in using P.marsupium in the management of diabetes with no observed side effects.