Karela
(*Momordica charantia*)

Karela is known as Bitter melon or Bitter gourd originated on the Indian subcontinent, and was introduced into China in the 14th century.[1] In Southern India, it is used in the dish Pachadi ,which is considered a medicinal food for diabetics.

Karela has been used in various Asian and African herbal medicine systems for a long time.[2,3] Recent studies have indicated that *Karela* contains a 'plant based insulin' which is helpful in lowering blood sugar levels. According to the Memorial Sloan Kettering Cancer Center, *Karela* has a number of uses that are thought to be beneficial including cancer prevention, treatment of diabetes, fever and infections. *Karela* has adequate quantity of vitamin B2, B1, B3, zinc, magnesium, dietary fiber, which are really essential for our body.

Karela consists of fresh fruit of *Momordica charantia* Linn. ,Fam. Cucurbitaceae; a monoecious climber found throughout the country often under cultivation, up to an altitude of 1500 m.[4]

Active contents:
The main constituents of bitter melon (Karela) are triterpene, protein, steroid, alkaloid, inorganic, lipid, and phenolic compounds.[5] Karela contains bitter chemicals like, charantin, vicine, glycosides and karavilosides along with polypeptide-p.

Herb actions:
Anti Diabetic: Bitter gourd has certain phytonutrients like polypeptide P (insulin like protein) that exerts the action of insulin and lowers blood sugar levels in those suffering from diabetes. Charantin and momordicin are also important constituents which help to regulate normal blood sugar. Another compound known as vicine is a glycol alkaloid that has hypoglycemic effects. *Karela* increases serum protein levels by enhancing peripheral glucose utilization. It also increases glucose absorption and fatty acid oxidation. *Karela* improves insulin sensitivity, thereby significantly reduces hyperglycemia, glycated hemoglobin (Hb A1C) levels.[6]

Hepato-protective: The extract of *Karela* significantly increase the active liver enzymes glutathione s-transferase, glutathione peroxidase and catalase, which suggest the role of *Karela* in preventing Liver toxicity.[6]

Immunity Booster: *Karela* is an extremely rich source of Vitamin C which helps boost your immunity. It is an excellent source of health benefiting flavonoids such as ß-carotene, a-carotene, lutein, and zea-xanthin. It also contains a good amount of vitamin-A. Together, these compounds help act as protective scavengers against oxygen-derived free radicals and reactive oxygen species (ROS) that play a role in aging, cancers and various disease processes.

Hypolipidemic: *Karela* improve lipid profiles. *Karela* fruit has been reported to reduce total cholesterol and triglyceride levels . They reduce the 'bad'cholesterol level by reducing the secretion of apolipoprotein-B which is the primary lipoprotein present in LDL. *Karela* increases apolipoprotein A-1, the major protein component of high-density or 'good' cholesterol.

Digestion: *Karela* stimulates easy digestion and peristalsis of food through the bowel until it is excreted from the body. Thus, it helps in relieving indigestion and constipation problems.

Indication: As an adjuvant in diabetes mellitus.

Contraindication: Should be avoided during pregnancy.

Dose: 1 Capsule two to three times a day or as advised by the Physician.
Composition: Each capsule contains 250 mg standardized extract of Karela (*Momordica charantia*).

References :

1. Bagchi, Indrani (11 April 2005). "Food for thought: Green 'karela' for Red China". *Times of India*.
2. Grover, J. K.; Yadav, S. P. (2004). "Pharmacological actions and potential uses of Momordica charantia: A review". *Journal of Ethnopharmacology* **93** (1): 123–132. doi:10.1016/j.jep.2004.03.035 PMID 15182917.
3. Beloin, N.; Gbeassor, M.; Akpagana, K.; Hudson, J.; De Soussa, K.; Koumaglo, K.; Arnason, J. T. (2005). "Ethnomedicinal uses of Momordica charantia (Cucurbitaceae) in Togo and relation to its phytochemistry and biological activity". *Journal of Ethnopharmacology* **96** (1–2): 49–55. doi:10.1016/j.jep.2004.08.009. PMID 15588650.
4. THE AYURVEDIC PHARMACOPOEIA OF INDIA PART- I VOLUME – II PAGE NO. 89.
5. Grover JK and Yadav SP: Pharmacological actions and potential uses of *Momordica charantia*. *A Rev J Ethnopharmacol* 93(1): 2004; 123-132.
6. (*International Journal of Pharmaceutical Sciences Review and Research, Volume 1, Issue 2, March/April 2010).*