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## *Vigna trilobata* (L.) Verdc: a review of medicinal uses, phytochemistry and pharmacology

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**Abstract**

*Vigna trilobata* (L.) VERDC. belongs to family Papilionaceae found throughout the tropical and warm temperate regions of the world. In folk medicine, it is used in arthritis, fever, cough, dysentery and urinogenital disorders. Different secondary metabolites such as alkaloids, glycosides, terpenoids, flavonoids have been reported in *Vigna trilobata*. Antioxidant, antidiabetic, anti-inflammatory activities have been shown by *Vigna trilobata*.

**Keywords:** *Vigna trilobata*, ethnomedicine, phytochemistry, pharmacology

**Introduction**

*Vigna trilobata* (L.) Verdc. Belongs to family Papilionaceae is native to Asia and found throughout the tropical and warm temperate regions of the world including Africa, Australia, Madagascar, Mauritius, South America and India<sup>[1]</sup>.

**Name of *Vigna trilobata* in different languages**<sup>[1-3]</sup>

Languages	Names
Bengla	Mugani
English	African gram, Jungle mat bean, Math bean, Three-lobed kidney bean, wild kidney bean
Gujrati	Adavada, Magavala, Adabaumagi
Hindi	Ranmoong, Mudgarni, Mgani, Mugawana, Mungani, Triangul Rakhalkalai, mugam, trianguli, mungvan, Ranmoong, mudgarni, Mugani, Mugawana, Mungani, Trianguli, Banmoong
Marathi	Ranmath, Jangalimath, Arkamath, Ranamuga
Sanskrit	Aranyamudga, Ilrasva, Karanjija, Koshila, Kurangika, shimbi, Vanamudga, Vanya, Kshudrasaha, Mudgaparni, Aranyamudga, kakamunga
Sinhala	Bin-me, munwenna
Tamil	Naripayar, Panipayar
Urdu	Jangli-math, Mukni, Mugwan

**Taxonomy**<sup>[1-4]</sup>

Kingdom	Plantae
Family	Papilionaceae
Subfamily	Faboideae
Tribe	Phaseolae
Sub tribe	Phaseolinae
Genus	<i>Vigna</i>
Species	<i>trilobata</i>
Synonyms	<i>Dolichos trilobatus</i> L., <i>Phaseolus trilobatus</i> (L.) Schreb., <i>Phaseolus trilobus</i> Ait.
Plant	Annual or perennial herb, prostrate, branches glabrous or pubescent.
Leaves	Alternate and trifoliate, 4-8cm long with grooved petiole. petiole 3.7-7.5 cm long; leaflet 1.2-2.5 cm long, usually as broad, generally 3-lobed, the middle lobe bigger, oblong, broadly spatulate, obtuse, the lateral lobes oblong, broadly spatulate, obtuse or subacute, glabrous to subglabrous; petiolule 1.5-2.5 cm long; stipels small; stipules 4-15 mm long.
Inflorescence	Axillary, many flowered, peduncle 2.5-9.5 cm long, bracts 4-5 mm long, pedicel 2-3 mm long, bracteoles 4-7 mm long.
Flower	Inflorescence a few flowered raceme, peduncle c. 8-22.5 cm long. Bract deciduous; bracteoles c. 3 mm long, below the calyx. Pedicel 2.5 mm long. Calyx 2.5 mm long, glabrous, teeth minute. Corolla yellow, 5-6.5 mm long.
Fruit	2.5 to 6 or 7 cm long, 3 mm wide, glabrous or sparingly pubescent, green when immature and turn black on maturity, dehiscent, with small, black, blue or sometimes whitish seeds.
Seeds	6-12 and are uniform with a dark brown shining seed coat.

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*Vigna trilobata***Table 1:** Ethnomedicine [1, 3]

Part	Uses
Plant	Febrifuge, anti-inflammatory, sedative, arthritis, oedema, urinogenital disorders.
Leaves	Antibilious, coolant, sedative, tonic, eye problem.
Fruit	Anthelmintic, aphrodisiac, astringent, styptic, biliousness, burning sensation, cough, dysentery, fever, gout, inflammation, pile, thirst.
Roots	Fever, cough, diarrhea, dyspepsia, hemorrhoids.

**Table 2:** Nutritional value of seeds [5]

Water	5.19g/100g	Amino acid (g/ 100g of seed protein)	
Energy	1593.96 kJ/100g	Alanine	5.81
Proteins	100g/100g	Arginine	5.28
Ash	2.71g/100g	Aspartic acid	10.53
Crude fibers	8.81g/100g	Glutamic acid	12.61
Fats	5.54g/100g	Glycine	3.41
<b>Proteins ( g/100g)</b>		Histidine	4.11
Albumins	25.90	Isoleucine	3.17
Globulins	62.56	Leucine	7.61
Glutelins	6.34	Lysine	6.12
Prolamines	5.20	Methionine	0.96
<b>Essential minerals</b>		Phenylalanine	4.83
<b>Micro-minerals (mg/ 100g)</b>		Proline	3.43
Copper	2.44	Serine	3.13
Iron	11.60	Threonine	2.72
Manganese	4.23	Tyrosine	3.05
Zinc	8.44	Valine	5.94
<b>Macro-minerals (mg/ 100g)</b>		<b>Fattyacids (%)</b>	
Calcium	464.14	Linoleic acid	27.33
Magnesium	290.71	Linolenic acid	9.19
Phosphorus	168.78	Oleic acid	22.40
Potassium	1397.68	Palmitic acid	25.23
Sodium	24.26	Palmitoleic acid	2.81
-----	-----	Stearic acid	9.60

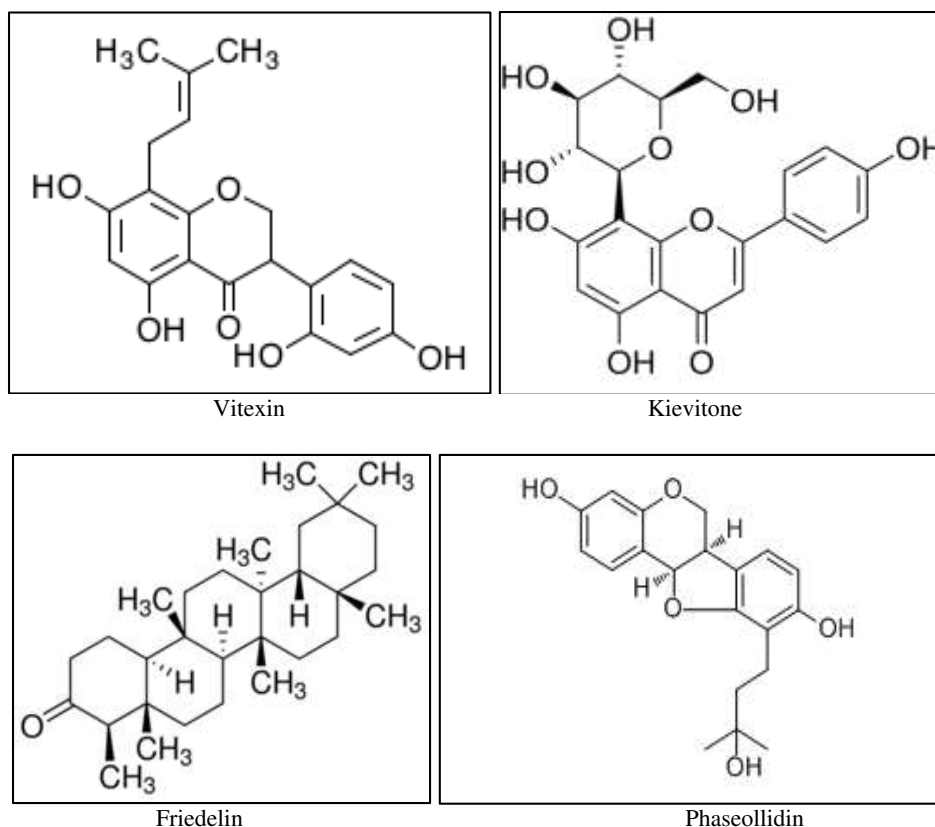
**Phytoconstituents**

Different secondary metabolites have been reported from various parts of *Vigna trilobata* as dalbergioidin, fats, fixed

oil, flavonoids, glycosides, isovitexin, kaempferol, kievitone, phaseollidin, quercetin, saponins, sterols, tannins, terpenoids and vitexin [6-8].

**Table 3:** Pharmacological activities

Part	Extract	Pharmacological activity
Leaves	Aqueous	Sedative [9]
	Methanol	Antiemetic [10]
Root	Methanol, aqueous	Antiemetic [11]
Root	Methanol	Antidiabetic [6]
Seeds	Methanol, aqueous	Hepatoprotective, antioxidant [12, 13]
Stem	Petroleum ether, methanol	Antimicrobial [14]
Whole Plant	Methanol	Antitussive [15]
Whole Plant	-----	Anti-inflammatory [16]

Chemical structures of some phytoconstituents of *Vigna trilobata* [1]**Conclusion**

Medicinal uses, phytochemistry and pharmacology of *Vigna trilobata* presented in this review could be helpful for future studies and research. The plant has good future prospective for the discovery of new molecules and pharmacological activities.

**References**

- Kaur N, Sehrawat R, YC T. Phytochemical and pharmacological attributes of *Phaseolus trilobus*—A major herbal ingredient of Pharma products. *Universities Journal of Phytochemistry and Ayurvedic Heights* 2012;1(12):58-63.
- Roskov Y *et al.*, ILDIS World Database of Legumes (version 12, May 2014), in *Species 2000 & ITIS Catalogue of Life*, 20th December Digital resource at [www.catalogueoflife.org/col/](http://www.catalogueoflife.org/col/), R. Y., *et al.*, Editors. 2018, Species 2000: Naturalis: Leiden, the Netherlands 2017.
- National Medicinal Plants Board, D.o.A., Ministry of Health and Family Welfare and Government of India, *Agro-techniques of Selected Medicinal Plants*, 2008, TERI Press, The Energy and Resources Institute: Lodhi Road, New Delhi, India.
- Ali SI. *Papilionaceae*, in *Flora of Pakistan*, E. Nasir and S.I. Ali, Editors. Department of Botany, University of Karachi 1973.
- Siddhuraju P, Vijayakumari K, Janardhanan K. *Nutritional and chemical evaluation of raw seeds of the tribal pulse Vigna trilobata (L.) Verdc.* *International Journal of Food Sciences and Nutrition* 1992;43:97-103.
- Kaur N *et al.*, *Phytochemical and antidiabetic evaluation of Phaseolus trilobus roots.* *Journal of Pharmacy Research* 2012;5(11):5202-5205.
- Sehrawat R, Tripathi Y, Kaur N. Phytochemical constituents and HPTLC fingerprinting profile of *Phaseolus trilobus*. *Journal of Science, Technology and Management* 2014;7(1):13-18.
- Pandey S. Review on medicinal importance of *Vigna* genus. *Plant Science Today* 2019;6(4):450-456.
- Ahir C *et al.*, Evaluation of sedative activity of aqueous extract of *Vigna trilobata (L) Verdc. Leaves.* *International Journal of Research in Ayurveda and Pharmacy* 2011;2(4):1328-1331.
- Salman A *et al.*, Antiemetic activity of leaves extracts of five leguminous plants [J]. *Int J Res Ayur Pharm* 2012;3(2):251-253.
- Hussain M *et al.*, Assessment of antiemetic potential of crude extract of *Vigna trilobata (Linn.)* against different emetogenic stimuli: An in vivo study. *Indo American Journal of Pharmaceutical Research* 2015;5(4):1588-1593.
- Fursule RA, Patil SD. Hepatoprotective and antioxidant activity of *Phaseolus trilobus*, Ait on bile duct ligation induced liver fibrosis in rats. *Journal of Ethnopharmacology* 2010;129(3):416-419.
- Patil S, Fursule R. Effect of *Phaseolous trilobus* seeds on the paracetamol induced liver damage in rats. *Journal of Pharmacology and Toxicology* 2009;3(7):485-492.
- Yadava R, Yadav P. Isolation and characterization of two new compounds from *Phaseolus trilobus* Ait. *American Journal of Phytomedicine and Clinical Therapeutics*, 2013;1(9):672-680.
- Khan RA, Sultana N, AI. Analgesic and antitussive activities on methanol extract of *Vigna trilobata (L) Verdc.* *Journal of Basic and Applied Sciences* 2007;3(2):81-83.
- Subramanian R *et al.*, Wound healing ethnopharmacological potentials of selected medicinal plants used by Malayali Tribes. *International Research Journal of Pharmacy* 2011;2(5):132-137.