



SIGMA
UNIVERSITY®

Moringa



Synonym:

Gujarati: સરગવો (Saragvo/Saragvo)

Hindi: sahjan / drumstick tree (सिजन / सिजन)

English: horseradish tree, ben oil tree

Botanical name: *Moringa oleifera*

Family: Moringaceae

Chemical Constituent:

- Flavonoids: Quercetin, Kaempferol, Rutin
- Alkaloids: Moringine, Moringinine
- Phenolic Compounds: Gallic acid, Caffeic acid, Chlorogenic acid
- Vitamins:
 - Vitamin A (β -carotene)
 - Vitamin B1 (Thiamine), B2 (Riboflavin), B3 (Niacin)
 - Vitamin C (Ascorbic acid), Vitamin E
- Minerals: Calcium, Potassium, Iron, Magnesium, Zinc

- Essential Amino Acids: Leucine, Isoleucine, Valine, Lysine, Methionine
- Saponins and Tannins: Present in leaves and seeds
- Fatty Acids (from seeds): Oleic acid, Palmitic acid, Stearic acid
- Others: Glucosinolates, Isothiocyanates, Sterols (β -sitosterol)

Therapeutic Effect:

- Antidiabetic
 - Reduces blood glucose levels by inhibiting α -amylase and α -glucosidase
 - Enhances insulin sensitivity
- Anti-inflammatory
 - Suppresses inflammatory cytokines (TNF- α , IL-6)
 - Useful in arthritis and chronic inflammation
- Antioxidant
 - Neutralizes free radicals

- Protects against oxidative stress and cellular damage
- Antimicrobial
 - Active against *E. coli*, *Staphylococcus aureus*, *Candida albicans*
 - Used in oral and skin infections
- Cardioprotective
 - Reduces cholesterol and blood pressure
 - Improves lipid profile
- Neuroprotective
 - Supports cognitive function and protects neurons
 - Potential role in Alzheimer's and neurodegenerative disorders
- Wound Healing
 - Promotes fibroblast activity and tissue regeneration
- Hepatoprotective
- Protects liver cells from toxins and oxidative damage.

Marketed preparation:

- Powdered Leaf Extracts
 - Used in smoothies, capsules, and teas
 - Rich in vitamins and antioxidants
- Capsules/Tablets
 - Standardized for antidiabetic and anti-inflammatory effects
 - Popular in nutraceuticals and dietary supplements
- Herbal Teas
 - Promoted for detoxification and metabolic health
 - Often blended with ginger or tulsi
- Moringa Oil (Ben oil)
 - Extracted from seeds
 - Used in cosmetics and cooking
 - Rich in oleic acid and antioxidants
- Topical Creams and Serums
 - Used for skin brightening, anti-aging, and wound healing
 - Combined with aloe vera or turmeric

- Functional Foods
 - Incorporated into health bars, fortified drinks, and snacks
- Ayurvedic Formulations
- Used in *Shigru Churna*, *Shigru Guggulu* for joint and metabolic disorders

Key Constituents: vitamins (A, C), minerals (Ca, K), glucosinolates, isothiocyanates, moringine, flavonoids, proteins.

Uses: nutritional (leaves), anti-inflammatory, antioxidant, antimicrobial; pods (drumsticks) used as vegetable; also used in water purification (seeds).