



SIGMA[®]
UNIVERSITY

White Mulberry



Synonym:

Gujarati: Shetur (શેતૂર)

Hindi: shehtoot (शेहती)

English: mulberry

Botanical name: *Morus alba*

Family: Moraceae

Chemical Constituent:

- Flavonoids:
 - Quercetin
 - Rutin
 - Kaempferol
 - Morin
- Phenolic Compounds:
 - Gallic acid
 - Caffeic acid
 - Chlorogenic acid
- Alkaloids:
 - 1-Deoxynojirimycin (DNJ) – potent antidiabetic agent
- Polysaccharides:
 - Rhamnose
 - Arabinose
 - Glucose

- Galactose
- Vitamins:
 - Vitamin C
 - Vitamin A
 - B-complex vitamins
- Minerals:
 - Calcium
 - Potassium
 - Magnesium
 - Iron
- Amino Acids:
 - Lysine
 - Arginine
 - Other essential and non-essential amino acids
- Other Bioactives:
- Resveratrol
- β -sitosterol
- Coumarins
- Triterpenoids

Therapeutic Effect:

Antidiabetic Activity

- Contains *1-Deoxynojirimycin (DNJ)*, which inhibits carbohydrate-digesting enzymes like α -glucosidase.

- Helps reduce postprandial blood glucose levels.
- Hypolipidemic Effect
 - May lower *LDL cholesterol* and *triglyceride levels*.
 - Supports lipid profile improvement in mild dyslipidemia.
- Antioxidant Properties
 - Rich in flavonoids and phenolic acids (e.g., quercetin, gallic acid).
 - Neutralizes free radicals and reduces oxidative stress.
- Anti-inflammatory Action
 - Suppresses inflammatory mediators like $\text{TNF-}\alpha$ and IL-6.
 - Useful in chronic inflammatory conditions.
- Cardiovascular Support
 - Improves endothelial function and blood pressure regulation.
 - May reduce risk of atherosclerosis.
- Neuroprotective Effects
 - Antioxidants may protect neurons from oxidative damage.
 - Potential role in cognitive health and neurodegenerative disorders.

Marketed preparation:

. Capsules/Tablets

- Standardized extracts containing *1-Deoxynojirimycin (DNJ)*
- Often marketed for *blood sugar control* and *weight loss*
- Popular brands include formulations with 250–500 mg per dose

. Powdered Leaf Extract

- Used in smoothies, shakes, or as a dietary supplement
- Rich in flavonoids and polyphenols
- Available in bulk for nutraceutical and functional food industries

. Herbal Teas

- Dried white mulberry leaves used for infusion
- Promoted for *glucose regulation* and *detoxification*
- Often blended with other herbs like cinnamon or green tea

. Liquid Extracts/Tinctures

- Alcohol or glycerin-based extracts

- Used in traditional medicine and alternative therapies
- Marketed for *antioxidant and anti-inflammatory* effects
- Functional Foods
 - Incorporated into health bars, fortified beverages, and gummies
 - Targeted at *metabolic health* and *cholesterol management*
- Cosmetic Products
 - Extracts used in creams and serums for *skin brightening* and *anti-aging*
 - Often combined with other botanicals like licorice or niacinamide

Key Constituents: flavonoids, alkaloids (morusin), anthocyanins (in fruits).

Uses: fodder, antioxidant, antidiabetic effects in some studies; leaves feed silkworms. Ornamental/fruit tree.