

Papain (Carica papaya)

Common Name: Papaya.

Location: South Asia and Southeast Asia.

Description: Papain is the protein-dissolving enzyme extracted from the milky white latex of unripe papaya fruit. It is also found in papaya fruit and papaya leaf.

Properties: Green papaya is used in Southeast Asia as a salad vegetable. It is an excellent source of papain. Worldwide, most papaya are eaten green. In many countries in South Asia and Southeast Asia, green papaya is used to make a tart and tasty salad to accompany yams or rice. Green papaya is a richer source of the therapeutically active papain than is the ripe fruit.

Uses: Papain is a digestive aid for those who have trouble digesting proteins. It is also useful for pain relief. It aids digestion and heartburn, stimulates appetite, and helps to prevent ulcers. Papain also helps bruises and other injuries to heal faster. Benefits of papaya for specific health conditions include treatment of benign prostatic hypertrophy (BPH); bruises, sore muscles, sprains, and recovery from surgery, celiac disease, herpes virus infection and shingles.

Doses: Papain is available in the form of a single-herb capsule and a combined bromelain/papain tablet for internal use. It is also available in the form of a cream for external use.

Warnings: pregnant women can eat ripe papaya fruit in moderation, but should not use unripened papain, papaya latex, or the herb's leaves. If you take anticoagulant medication, you should use papain in moderation only.

Papaya Leaf

Also known as

Carica papaya, Custard Apple Leaf.

Introduction

The papaya is a small tropical tree with a straight stem marked by scars where leaves have fallen directly from it. Papayas do not have branches. The papaya fruit is pear-shaped with a bright golden-yellow skin. The flesh of the fruit is a brighter orange-yellow, juicy and silky smooth, with a sweet and sour flavor. The shiny gray or black seeds in the interior of the fruit have a peppery taste and are edible, although they are usually discarded. The papaya is an extraordinarily useful plant. In the tropics around the world papaya is the breakfast fruit, served either green or ripe. The juice is a popular beverage, and the leaves and young stems are steamed and served as a vegetable. The fruit yields an enzyme, papain, best known as a digestive aid but most commonly used to "clear" freshly brewed beer. The latex is used as a freckle remover, and the seed has antibacterial action against *Bacillus cereus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and *Shigella flexneri*. The leaves have been used as a substitute for soap, and for dressing wounds.

Constituents

The leaf contains beta-carotene, calcium, carpaine, fats, flavonols, niacin, papain, tannins, and vitamin

C (in higher concentration in the leaf than in the fruit). The leaf, unlike the fruit, is not a source of the protein-dissolving enzyme papain, but the latex (sap) in the leaf stem is. Papain remains in leaf preparations that have been dried over low heat, but it may be destroyed in products that are dried at high heat.

Parts Used

Dried leaf.

Typical Preparations

Infusions or teas, taken in small doses. For convenience it may be taken as a capsule or extract.

Summary

Physicians of nineteenth century America used papaya leaf to treat "fermentative indigestion," a condition of bloating, nausea, and flatulence frequently following excessive consumption of fermented foods. King's Dispensatory noted that teas (decoctions) of papaya leaf helped reduce the oxalic acid content of the urine, presumably reducing the formation of oxalic acid kidney stones. The primary use of papaya leaf in herbal medicine today is as a vermifuge, that is, to remove intestinal worms. Papaya leaf has less of the protein-dissolving papain than the fruit, so it is less likely to "dissolve" the worms, but it contains tannins that the fruit does not. These tannins protect the intestine from reinfection by "tanning" proteins in the lining of the intestinal wall so that worms cannot attach themselves.

Precautions

Avoid overdosing. Excessive use of the herb can result in a very strong laxative effect.