

**JOURNAL OF SCIENTIFIC & INNOVATIVE RESEARCH****Carica papaya as a pack of enzymes and its medicinal value: Short review**Aswani<sup>\*1</sup>, Jakir Husain<sup>1</sup>

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The papaya, papaw, or pawpaw is the fruit of the plant *Carica papaya*, the only species in the genus *Carica* of the plant family Caricaceae. It is native to the tropics of the Americas. The papaya is a large, tree-like plant, with a single stem growing from 5 to 10 m (16 to 33 ft) tall, with spirally arranged leaves confined to the top of the trunk. The leaves are large, 50–70 cm in diameter, deeply palmately lobed, with seven lobes.

The nutritional values of papaya help to prevent the oxidation of cholesterol. Papaya is rich in iron and calcium; a good source of vitamins A, B and G and an excellent source of vitamin C (ascorbic acid). The extracts of

unripe *C. papaya* contain terpenoids, alkaloids, flavonoids, carbohydrates, glycosides, saponins, and steroids.

**Table: Enzymes obtained from the plant**

Phytoconstituents	<i>Carica papaya part</i>
Enzyme Papain, chymopapain	Unripe fruit
Carotenoids B carotene, cryptoxanthin	Fruits
Carposide	Roots
Glucosinolates Benzyl isothiocyanate, papaya oil	Seeds

Minerals Ca, K, Mg,Zn,Mn,Fe	Shoots, leaves
Monoterpenoids Linalool,4-terpinol	Fruits
Flavonoids Myricetin,kaemferol	Shoots
Alkaloids Carpinine,carpaine,vitamin C and E	Leaves

### **Proteolytic,enzymes-**

Papaya contains several unique protein-digesting proteolytic enzymes including papain and chymopapain.

### **Papain-**

This enzyme is similar to pepsin, a digestive enzyme in our body.

### **Chymopapain-**

A drug made from chymopapain used to be very popular in treating slipped disk.

Both papain and chymopapain can help lower inflammation and improve healing from burns.

### **Carpaine-**

The alkaloid, Carpaine, slows the heart rate in humans and thus reduces blood pressure. Its action is similar to the drug prescribed for heart patients, digitalis. The alkaloid is

reported to be able to kill worms and amoebas.

### **Lycopene-**

Papaya has an abundance of cancer fighting lycopene. It is a key intermediate in the biosynthesis of many important carotenoids, such as beta-carotene and xanthophylls.

### **Fibrin-**

Another useful compound not readily found in the plant kingdom is Fibrin. It reduces the risk of blood clots and improves the quality of blood cells, optimizing the ability of blood to flow through the circulatory system. Fibrin is also important in preventing stroke.

**Medicinal Importance of the Plant:****Colon cancer-**

The fiber of papaya is able to bind cancer-causing toxins in the colon and keep them away from the healthy colon cells. These nutrients provide synergistic protection for colon cells from free radical damage to their DNA.

**Anti-inflammatory effects-**

Protein enzymes including papain and chymopapain and antioxidant nutrients found in papaya; including vitamin C, vitamins E, and beta-carotene, reduce the severity of the conditions such as asthma, osteoarthritis, and rheumatoid arthritis.

**Rheumatoid arthritis-**

Vitamin C-rich foods, such as papaya, provide humans with protection against inflammatory polyarthritis, a form of rheumatoid arthritis involving two or more joints.

**Promote lung health-**

If you are smoker, or if you are frequently exposed to second hand smoke. Eating vitamin A rich foods, such as papaya, help your lung healthy and save your life.

**Anti Sickling activity-**

Current research proves that papaya is having an anti sickling activity

**Prevent prostate cancer-**

Men consuming lycopene-rich fruits and vegetables such as papaya, tomatoes, apricots, pink grapefruit, watermelon, and guava were 82% less likely to have prostate cancer compared to those consuming the least lycopene-rich foods.

**Anticoagulant effect-**

Injection of papian extract in a dog increases prothrombin and coagulation threefold. It is also claimed that the enzyme eliminates necrotic tissues in chronic wounds, burns and ulcers. Papain is also of commercial importance in the brewery industry, in the food industry and in the textile industry.

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